



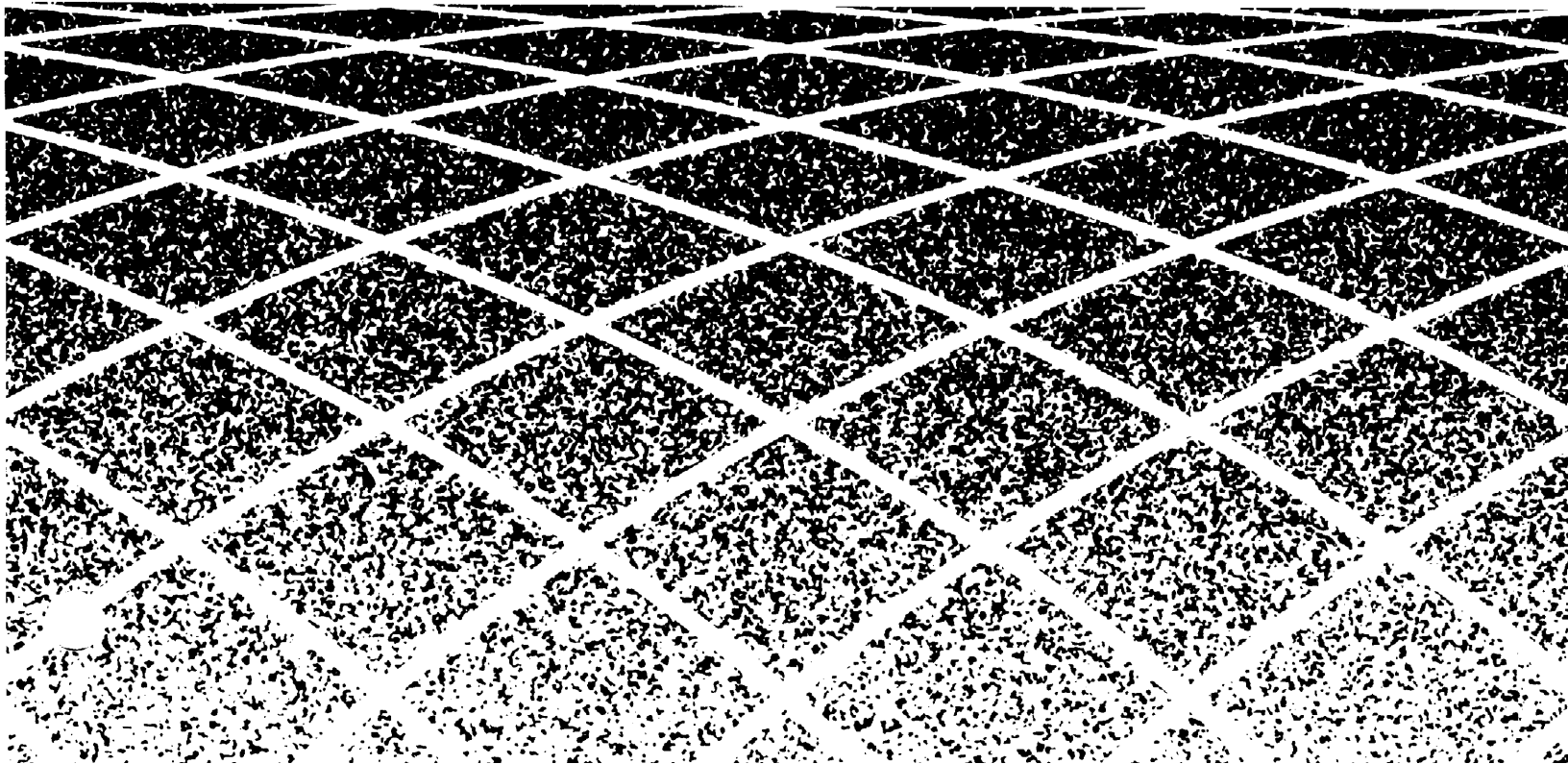
AT&T 555-620-110

Issue 1

October 1992

MERLIN LEGEND™
Communications System
Release 2.0

Feature Reference



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**AT&T 555-620-110
Issue 1
October 1992**

Notice

Every effort was made to ensure that the information in this book was complete and accurate at the time of printing. However, information is subject to change.

Federal Communications Commission (FCC) Electromagnetic Interference Information

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Canadian Department of Communications (DOC) Interference Information

This digital apparatus does not exceed the Class A limits for radio noise emissions set out in the radio interference regulations of the Canadian Department of Communications.

Le Présent Appareil Numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Trademarks

5ESS, ACCUNET, CONVERSANT, Magic On Hold, MEGACOM, MERLIN, and MultiQuest are registered trademarks, and 4ESS, AT&T FAX Attendant System, AUDIX Voice Power, InnManager, MERLIN Attendant, MERLIN LEGEND, MERLIN MAIL, MLX-10, MLX-10D, MLX-20L, and MLX-28D are trademarks of AT&T in the U.S. and other countries.

UNIX is a registered trademark of UNIX System Laboratories, Inc.

MS-DOS is a registered trademark of Microsoft Corp.

Support Telephone Number

AT&T provides a toll-free customer Helpline (1-800-628-2888) 24 hours a day (U.S.A. only). Call the Helpline, or your authorized dealer, if you need assistance when installing, programming, or using the system.

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Tables



The exclamation point in an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

IMPORTANT SAFETY INSTRUCTIONS

When installing telephone equipment, always follow basic safety precautions to reduce the risk of fire, electrical shock, and injury to persons, including:

- Read and understand all instructions.
- Follow all warnings and instructions marked on or packed with the product.
- Never install telephone wiring during a lightning storm.
- Never install a telephone jack in a wet location unless the jack is specifically designed for wet locations.
- Never touch uninsulated telephone wires or terminals unless the telephone wiring has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.
- Use only AT&T-manufactured MERLIN LEGEND™ Communications System circuit modules, carrier assemblies, and power units in the MERLIN LEGEND Communications System (511A) control unit.
- Use only AT&T-recommended/approved MERLIN LEGEND Communications System accessories.
- If equipment connected to the analog station modules (008, 408, 408 GS/LS) or to the MLX telephone modules (008 MLX, 408 GS/LS-MLX) is to be used for in-range out-of-building (IROB) applications, IROB protectors are required.
- Do not install this product near water, for example, in a wet basement location.
- Do not overload wall outlets, as this can result in the risk of fire or electrical shock.
- The MERLIN LEGEND Communications System is equipped with a three-wire grounding-type plug with a third (grounding) pin. This plug will fit only into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace the obsolete outlet. Do not defeat the safety purpose of the grounding plug.
- The MERLIN LEGEND Communications System requires a supplementary ground.

-
- Do not attach the power supply cord to building surfaces. Do not allow anything to rest on the power cord. Do not locate this product where the cord will be abused by persons walking on it.
 - Slots and openings in the module housings are provided for ventilation. To protect this equipment from overheating, do not block these openings.
 - Never push objects of any kind into this product through module openings or expansion slots, as they may touch dangerous voltage points or short out parts, which could result in a risk of fire or electrical shock. Never spill liquid of any kind on this product.
 - Unplug the product from the wall outlet before cleaning. Use a damp cloth for cleaning. Do not use cleaners or aerosol cleaners.
 - Auxiliary equipment includes answering machines, alerts, modems, and fax machines. To connect one of these devices, you must first have a Multi-Function Module (MFM).

 **WARNING:**

- *For your personal safety, DO NOT install an MFM yourself.*
- *ONLY an authorized technician or dealer representative shall install, set options, or repair an MFM.*
- *To eliminate the risk of personal injury due to electrical shock, DO NOT attempt to install or remove an MFM from your MLX telephone. Opening or removing the module cover of your telephone may expose you to dangerous voltages.*

SAVE THESE INSTRUCTIONS

Customer Support Information

Support Telephone Number

In the U.S.A. only, AT&T provides a toll-free customer Helpline (1-800-628-2888) 24 hours a day. Call the Helpline, or your authorized dealer, if you need assistance when installing, programming, or using your system.

Outside the U.S.A., if you need assistance when installing, programming, or using your system, contact your authorized AT&T dealer.

Federal Communications Commission (FCC) Electromagnetic Interference Information

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Canadian Department of Communications (DOC) Interference Information

This digital apparatus does not exceed the Class A limits for radio noise emissions set out in the radio interference regulations of the Canadian Department of Communications.

Le Présent Appareil Numérique n'émet pas de bruits radioélectriques dépassant les limites applicable aux appareils numériques de la class A prescrites dans le règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

FCC Notification and Repair Information

This equipment is registered with the FCC in accordance with Part 68 of its rules. In compliance with those rules, you are advised of the following:

- **Means of Connection.** Connection of this equipment to the telephone network shall be through a standard network interface jack: USOC RJ11C, RJ14C, RJ21X. Connection to E&M tie trunks requires a USOC RJ2GX. Connection to off-premises stations requires a USOC RJ11C or RJ14C. Connection to 1.544-Mbps digital facilities must be through a USOC RJ48C or RJ48X. Connection to DID requires a USOC RJ11C, RJ14C, or RJ21X. These USOCs must be ordered from your telephone company.

This equipment may not be used with party lines or coin telephone lines.

- **Notification to the Telephone Companies.** Before connecting this equipment, you or your equipment supplier must notify your local telephone company's business office of the following:
 - The telephone number(s) you will be using with this equipment.
 - The appropriate registration number and ringer equivalence number (REN), which can be found on the back or bottom of the control unit, as follows:
 - If this equipment is to be used as Key System, report the number AS593M-72914-KF-E.
 - If the system provides both manual and automatic selection of incoming/outgoing access to the network, report the number AS593M-72682-MF-E.
 - If there are no directly terminated trunks, or if the only directly terminated facilities are personal lines, report the number AS5USA-65646-PF-E.The REN for all three systems is 1.5A.
 - For tie line connection, the facility interface code (FIC) is TL31M and the service order code (SOC) is 9.0F.
For connection to off-premises stations, the FIC is OL13C and the SOC is 9.0F.
 - For equipment to be connected to 1.544-Mbps digital service, the FIC is 04DU9-B for D4 framing format or 04DU9-C for extended framing format, and the SOC is 6.0P.
 - For equipment to be connected to DID facilities, the FIC is 02RV2-T and the SOC is 9.0F.
 - The quantities and USOC numbers of the jacks required.
For each jack, the sequence in which lines are to be connected: the line types, the FIC, and the REN by position when applicable.

You must also notify your local telephone company if and when this equipment is permanently disconnected from the line(s).

The REN is used to determine the number of devices that may be connected to the telephone line. Excessive RENs on the line may result in the devices not ringing in response to an incoming call. In most, but not all, areas the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

Installation and Operational Procedures

The manuals for your system contain information about installation and operational procedures.

- **Repair Instructions.** If you experience trouble because your equipment is malfunctioning, the FCC requires that the equipment not be used and that it be disconnected from the network until the problem has been corrected. Repairs to this equipment can be made only by the manufacturers, their authorized agents, or others who may be authorized by the FCC. In the event repairs are needed on this equipment, contact your authorized AT&T dealer or, **in the U.S.A. only**, contact the National Service Assistance Center (NSAC) at 1-800-628-2888.

- **Rights of the Local Telephone Company.** If this equipment causes harm to the telephone network, the local telephone company may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice is not practical, you will be notified as soon as possible. You will also be informed of your right to file a complaint with the FCC.

Your local telephone company may make changes in its facilities, equipment, operations, or procedures that affect the proper functioning of this equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

- **Hearing Aid Compatibility.** The custom telephone sets for this system are compatible with inductively coupled hearing aids as prescribed by the FCC.

- **Automatic Dialers.** WHEN PROGRAMMING EMERGENCY NUMBERS AND/OR MAKING TEST CALLS TO EMERGENCY NUMBERS:

- Remain on the line and briefly explain to the dispatcher the reason for the call.
- Perform such activities in off-peak hours, such as early morning or late evening.

- **Direct Inward Dialing (DID).**

- a. This equipment returns answer supervision signals to the Public Switched Telephone Network when:
 - (1) answered by the called station
 - (2) answered by the attendant
 - (3) routed to a recorded announcement that can be administered by the customer premises equipment user
 - (4) routed to a dial prompt
- b. This equipment returns answer supervision on all DID calls forwarded back to the Public Switched Telephone Network. Permissible exceptions are when:
 - (1) a call is unanswered
 - (2) a busy tone is received
 - (3) a reorder tone is received

Allowing this equipment to be operated in such a manner as not to provide proper answer supervision signaling is in violation of Part 68 rules.

DOC Notification and Repair Information

NOTICE: The Canadian Department of Communications (DOC) label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. The DOC does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to connect it to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring for single-line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or any equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected. This precaution may be particularly important in rural areas.

CAUTION: Users should not attempt to make such connections themselves, but should contact the appropriate electrical inspection authority or electrician, as appropriate.

To prevent overloading, the Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop used by the device. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the Load Numbers of all the devices does not exceed 100.

DOC Certification No. 230 4095A

CSA Certification No. LR 56260

Load No. 6

Renseignements sur la notification du ministère des Communications du Canada et la réparation

AVIS: L'étiquette du ministère des Communications du Canada identifie le matériel homologué. Cette étiquette certifie que le matériel est conforme à certaines normes de protection, d'exploitation et de sécurité des réseaux de télécommunications. Le Ministère n'assure toutefois pas que le matériel fonctionnera à la satisfaction de l'utilisateur.

Avant d'installer ce matériel, l'utilisateur doit s'assurer qu'il est permis de le raccorder aux installations de l'entreprise locale de télécommunication. Le

matériel doit également être installé en suivant une méthode acceptée de raccordement. Dans certains cas, les fils intérieurs de l'entreprise utilisés pour un service individuel à ligne unique peuvent être prolongés au moyen d'un dispositif homologué de raccordement (cordon prolongateur téléphonique interne). L'abonné ne doit pas oublier qu'il est possible que la conformité aux conditions énoncées ci-dessus n'empêchent pas la dégradation du service dans certaines situations. Actuellement, les entreprises de télécommunication ne permettent pas que l'on raccorde leur matériel à des jacks d'abonné, sauf dans les cas précis prévus par les tarifs particuliers de ces entreprises.

Les réparations de matériel homologué doivent être effectuées par un centre d'entretien canadien autorisé désigné par le fournisseur. La compagnie de télécommunications peut demander à l'utilisateur de débrancher un appareil à la suite de réparations ou de modifications effectuées par l'utilisateur ou à cause de mauvais fonctionnement.

Pour sa propre protection, l'utilisateur doit s'assurer que tous les fils de mise à la terre de la source d'énergie électrique, des lignes téléphoniques et des canalisations d'eau métalliques, s'il y en a, sont raccordés ensemble. Cette précaution est particulièrement importante dans les régions rurales.

AVERTISSEMENT: L'utilisateur ne doit pas tenter de faire ces raccordements lui-même; il doit avoir recours à un service d'inspection des installations électriques, ou à un electricien, selon le cas.

L'indice de charge (IC) assigné à chaque dispositif terminal indique, pour éviter toute surcharge, le pourcentage de la charge totale qui peut être raccordée à un circuit téléphonique bouclé utilisé par ce dispositif. La terminaison du circuit bouclé peut être constituée de n'importe quelle combinaison de dispositifs, pourvu que la somme des indices de charge de l'ensemble des dispositifs ne dépasse pas 100.

No d'homologation: 230 4095A

No de certification: CSA LR 56260

L'indice de charge: 6

**MERLIN LEGEND D.O.C.
Location Label Placement**

**Ministère des Communications
du Canada emplacement de
l'étiquette**

MERLIN LEGEND

Model 511A Control Unit

**TELEPHONE
EQUIPMENT**

® LR 56260

UL LISTED 538E

MADE IN U.S.A.

Complies with Part 68, FCC Rules. See the System Reference Manual for proper FCC Classification.

FCC Reg. Nos. MF: AS593M-72882-MF-E
KF: AS593M-72914-KF-E
PF: AS5USA-65646-PF-E
REN: 1.5 A

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

WARNING: If equipment is used for out-of-building applications, approved secondary protectors are required. See Installation Manual.

AVERTISSEMENT: Si l'équipement est utilisé pour des applications extérieures, l'installation d'un protecteur secondaire est requise. Voir le manuel d'installation.

CANADA

DR ID

Use only AT&T manufactured MERLIN LEGEND circuit modules, carrier assemblies, and power units, as specified in the installation Manual, in this product. There are no user serviceable parts inside. Contact your authorized agent for service and repair.

This digital apparatus does not exceed the Class A limits for radio noise emissions set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A, prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Security of Your System—Preventing Toll Fraud

As a customer of a new telephone system, you should be aware that there exists an increasing problem of telephone toll fraud. Telephone toll fraud can occur in many forms, despite the numerous efforts of telephone companies and telephone equipment manufacturers to control it. Some individuals use electronic devices to prevent or falsify records of these calls. Others charge calls to someone else's number by illegally using lost or stolen calling cards, billing innocent parties, clipping on to someone else's line, and breaking into someone else's telephone equipment physically or electronically. In certain instances, unauthorized individuals make connections to the telephone network through the use of remote access features.

The Remote Access feature of your system, if you choose to use it, permits off-premises callers to access the system from a remote telephone by using an 800 number or a 7- or 10-digit telephone number. The system returns an acknowledgement signaling the user to key in his or her authorization code, which is selected and administered by the system manager. After the authorization code is accepted, the system returns dial tone to the user. If you do not program specific egress restrictions, the user will be able to place any call normally dialed from a telephone associated with the system. Such an off-premises network call is originated at, and will be billed from the system location.

The Remote Access feature, as designed, helps the customer, through proper administration, to minimize the ability of unauthorized persons to gain access to the network. Most commonly, phone numbers and codes are compromised when overheard in a public location, through theft of a wallet or purse containing access information, or through carelessness (writing codes on a piece of paper and improperly discarding it). Additionally, hackers may use a computer to dial an access code and then publish the information to other hackers. Enormous charges can be run up quickly. It is the customer's responsibility to take the appropriate steps to properly implement the features, evaluate and administer the various restriction levels, protect access codes, and distribute access codes only to individuals who have been fully advised of the sensitive nature of the access information.

Common carriers are required by law to collect their tariffed charges. While these charges are fraudulent charges made by persons with criminal intent, applicable tariffs state that the customer of record is responsible for payment of all long-distance or other network charges. AT&T cannot be responsible for such charges and will not make any allowance or give any credit for charges that result from unauthorized access,

To minimize the risk of unauthorized access to your communications system:

- Use a nonpublished Remote Access number.
- Assign authorization codes randomly to users on a need-to-have basis, keeping a log of ALL authorized users and assigning one code to one person.

- Use random sequence authorization codes, which are less likely to be easily broken.
- Deactivate all unassigned codes promptly.
- Ensure that Remote Access users are aware of their responsibility to keep the telephone number and any authorization codes secure.
- When possible, restrict the off-network capability of off-premises callers, via use of Call Restrictions and Disallowed List capabilities.
- When possible, block out-of-hours calling.
- Frequently monitor system call detail reports for quicker detection of any unauthorized or abnormal calling patterns.
- Limit Remote Call Forward to persons on a need-to-have basis.

Limited Warranty and Limitation of Liability

AT&T warrants to you, the customer, that your MERLIN LEGEND Communications System will be in good working order on the date AT&T or its authorized reseller delivers or installs the system, whichever is later ("Warranty Date"). If you notify AT&T or its authorized reseller within one year of the Warranty Date that your system is not in good working order, AT&T will without charge to you repair or replace, at its option, the system components that are not in good working order. Repair or replacement parts may be new or refurbished and will be provided on an exchange basis. If AT&T determines that your system cannot be repaired or replaced, AT&T will remove the system and, at your option, refund the purchase price of your system, or apply the purchase price towards the purchase of another AT&T system.

If you purchased your system directly from AT&T, AT&T will perform warranty repair in accordance with the terms and conditions of the specific type of AT&T maintenance coverage you selected. If you purchased your system from an AT&T-authorized reseller, contact your reseller for the details of the maintenance plan applicable to your system.

This AT&T limited warranty covers damage to the system caused by power surges, including power surges due to lightning.

The following will not be deemed to impair the good working order of the system, and AT&T will not be responsible under the limited warranty for damages resulting from

- failure to follow AT&T's installation, operation, or maintenance instructions
- unauthorized system modification, movement, or alteration
- unauthorized use of common carrier communication services accessed through the system
- abuse, misuse, or negligent acts or omissions of the customer and persons under the customer's control
- acts of third parties and acts of God

AT&T'S OBLIGATION TO REPAIR, REPLACE, OR REFUND AS SET FORTH ABOVE IS YOUR EXCLUSIVE REMEDY.

EXCEPT AS SPECIFICALLY SET FORTH ABOVE, AT&T, ITS AFFILIATES, SUPPLIERS, AND AUTHORIZED RESELLERS MAKE NO WARRANTIES, EXPRESS OR IMPLIED, AND SPECIFICALLY DISCLAIM ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Limitation of Liability

EXCEPT FOR PERSONAL INJURY, DIRECT DAMAGES TO TANGIBLE PERSONAL PROPERTY PROXIMATELY CAUSED BY AT&T, AND LIABILITY OTHERWISE EXPRESSLY ASSUMED IN A WRITTEN AGREEMENT SIGNED BY AT&T, THE LIABILITY OF AT&T, ITS AFFILIATES, SUPPLIERS, AND AUTHORIZED RESELLERS FOR ANY CLAIMS, LOSSES, DAMAGES, OR EXPENSES FROM ANY CAUSE WHATSOEVER (INCLUDING ACTS OR OMISSIONS OF THIRD PARTIES), REGARDLESS OF THE FORM OF ACTION, WHETHER IN CONTRACT, TORT OR OTHERWISE, SHALL NOT EXCEED AN AMOUNT EQUAL TO THE LESSER OF THE DIRECT DAMAGES PROVEN OR THE PURCHASE PRICE OF THE SYSTEM. IN NO EVENT SHALL AT&T OR ITS AFFILIATES, SUPPLIERS, OR AUTHORIZED RESELLERS BE LIABLE FOR INCIDENTAL, RELIANCE, CONSEQUENTLY, OR ANY OTHER INDIRECT LOSS OR DAMAGE (INCLUDING LOST PROFITS OR REVENUES) INCURRED IN CONNECTION WITH THE SYSTEM. THIS LIMITATION OF LIABILITY SHALL SURVIVE FAILURE OF THE EXCLUSIVE REMEDY SET FORTH IN THE LIMITED WARRANTY ABOVE.

Voice Mail Systems

Your Voice Mail system permits callers to leave verbal messages for system users or gain access to the back-up position in an emergency as well as create and distribute voice messages among system users.

The Voice Mail system, through proper administration, can help you reduce the risk of unauthorized persons gaining access to the network. However, phone numbers and authorization codes can be compromised when overheard in a public location, are lost through theft of a wallet or purse containing access information, or through carelessness (writing codes on a piece of paper and improperly discarding them). Additionally, hackers may use a computer to dial an access code and then publish the information to other hackers. Substantial charges can accumulate quickly. It is your responsibility to take appropriate steps to implement the features properly, evaluate and administer the various restriction levels, protect and carefully distribute access codes.

Under applicable tariffs, you will be responsible for payment of toll charges. AT&T cannot be responsible for such charges and will not make any allowance or give any credit resulting from unauthorized access.

To reduce the risk of unauthorized access through your Voice Mail system, please observe the following procedures:

- Employees who have voice mailboxes should be required to use the passwords to protect their mailboxes.
 - Have them use random sequence passwords.
 - Impress upon them the importance of keeping their passwords a secret.
 - Encourage them to change their passwords regularly.
- The administrator should remove any unneeded voice mailboxes from the system immediately.

- AUDIX Voice Power™ has the ability to limit transfers to subscribers only. You are strongly urged to limit transfers in this manner.
- Use the PBX or Key system administration capability to do the following:
 - Block direct access to outgoing lines and force the use of account codes/authorization codes.
 - Disallow trunk-to-trunk transfer unless required.
 - Assign toll restriction levels to all AUDIX Voice Power ports.
 - If you do not need to use the Outcalling feature, completely restrict the outward calling capability of the AUDIX Voice Power ports.
- Monitor SMDR reports or Call Accounting System reports for outgoing calls that might be originated by AUDIX Voice Power ports.

Remote Administration and Maintenance

The Remote Administration and Maintenance feature of your telecommunications system, if you choose to use it, permits users to change the system features and capabilities from a remote location.

The Remote Administration and Maintenance feature, through proper administration, can help you reduce the risk of unauthorized persons gaining access to the network. However, telephone numbers and authorization codes can be compromised when overheard in a public location, are lost through theft of a wallet or purse containing access information, or through carelessness (writing codes on a piece of paper and improperly discarding them). Additionally, hackers may use a computer to dial an access code and then publish the information to other hackers. Substantial charges can accumulate quickly. It is your responsibility to take appropriate steps to implement the features properly, evaluate and administer the various restriction levels, and protect and carefully distribute access codes.

Under applicable tariffs, you will be responsible for payment of toll charges. AT&T cannot be responsible for such charges and will not make any allowance or give any credit resulting from unauthorized access.

To reduce the risk of unauthorized access through Remote Administration and Maintenance, please observe the following procedures:

- The System Administration and Maintenance capability of a PBX or Key system is protected by a password.
 - Change the default password immediately.
Continue to change the password regularly.
 - Only give the password to people who need it and impress upon them the need to keep it secret.
 - If anyone who knows the password leaves the company, change the password immediately.

- If you have a special telephone line connected to your PBX or Key system for Remote Administration and Maintenance, you should do one of the following:
 - Unplug the line when it is not being used.
 - Install a switch in the line to turn it off when it is not being used.
 - Keep the Remote Administration and Maintenance telephone number secret. Only give it to people who need to know it, and impress upon them the need to keep it a secret. Do not write the telephone number on the PBX or Key system, the connecting equipment, or anywhere else in the system room,
- If your Remote Administration and Maintenance feature requires that someone in your office transfer the caller to the Remote Administration and Maintenance extension, you should impress upon your employees the importance of only transferring authorized individuals to that extension.

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About This Book

The MERLIN LEGEND™ Communications System is an advanced digital switching system that integrates voice and data communications features. Voice features include traditional telephone features, such as Transfer and Hold, and advanced features, such as Group Coverage and Park. Data features allow both voice and data to be transmitted over the same system wiring.

This book provides detailed information about system features and telephone features. It is intended for use as a reference by anyone needing such information, including support personnel, sales representatives, and account executives. It is also intended for technicians who are responsible for system installation, maintenance, and troubleshooting. Refer to the following documentation for additional information:

- *Equipment and Operations Reference* provides detailed information on system hardware, telephones, and other equipment.
- *System Programming* gives procedural instructions for programming system features.
- *User's Guides and Operator's Guides* give procedural instructions for programming and using telephone features.

"Related Documents," later in this section, provides a complete list of system documentation together with ordering information.

In the U.S.A. only, AT&T provides a toll-free customer Helpline (1-800-628-2888) 24 hours a day. Call the Helpline, or your authorized dealer, if you need assistance when installing, programming, or using your system.

Terms and Conventions Used

The following conventions are used in this book:

- **Bold type** is used for imprinted (dedicated) or programmed telephone buttons:

Two types of **Auto Dial** buttons can be programmed.

- *Italic type* is used for emphasis and for information for which a specific value will be substituted:

When calls are forwarded to an outside number, the feature is called *Remote Call Forward*.

Dial *ext. no.*, then dial *feature code*.

- `Constant width type` is used for information that appears on a telephone display screen, on a PC screen, in a report heading, or in the system programming menu path that appears in the “At A Glance” box that begins each feature:

`Barge-In` appears only on system operator consoles.

- **Bold constant width type** is used for information that the user enters exactly as shown:

If a user wishes to specify a different language, he or she can do so using the `-1` option as follows:

```
spm -1 english
```

```
spm -1 french
```

```
spm -1 spanish
```

- Keys on the PC are shown in boxes.

Press `[F7]`.

Product Safety Labels

An exclamation point inside a triangle and the word “caution” or “Warning” indicate hazardous situations. These product safety labels appear as follows:



WARNING:

Warning indicates the presence of a hazard that could cause death or severe personal injury if the hazard is not avoided.



CAUTION:

Caution indicates the presence of a hazard that could cause minor personal injury or property damage if the hazard is not avoided.

Security

The use of passwords prevents unauthorized users from abusing the communications system. It is strongly recommended that passwords be assigned whenever possible and that the passwords are provided only to those persons directly responsible for system administration and maintenance.

Non-displaying access codes and telephone numbers provide another layer of security. The following cautionary note pertains to security:



CAUTION:

For more information about the security of your communications system to prevent toll fraud, see the “Customer Support Information” section at the front of this document.

How This Book Is Organized

The description of each feature in this book is organized under the following headings. Each heading is included as applicable for a given feature.

- **At a Glance** provides a convenient table of feature-specific information for quick reference. Information such as Users Affected, Reports Affected, Mode, Telephones, Programming Code, Feature Code, MLX Display Label, System Programming, Hardware, Maximums, and Factory Settings is included as appropriate.
- **Description** provides comprehensive information about the feature and its use.
- **Considerations and Constraints** lists exceptions and unusual conditions pertaining to the feature.
- **Mode Differences** explains variations in the use or operation of the feature in Hybrid/PBX, Key, or Behind Switch mode.
- **Telephone Differences** explains any operational variations on specific telephones or consoles.
- **Feature Interactions** describes how the feature operates when used in conjunction with other features.

Related Documents

A number of related documents are available, providing additional information about the communications system. (For ordering purposes, each title begins with the product name: *MERLIN LEGEND™ Communications System Release 2.0.*)

Within the continental United States, these documents can be ordered from the AT&T Customer Information Center (CIC) by calling 1-800-432-6600 or by contacting your local sales representative or authorized dealer.

| Document No. | Title |
|-----------------------------------|--|
| System Documents | |
| 555-620-114 | <i>System Overview</i> |
| 555-620-110 | <i>Feature Reference</i> |
| 555-620-115 | <i>Equipment and Operations Reference</i> |
| 555-620-116 | <i>Pocket Reference</i> |
| 555-620-111 | <i>System Programming</i> |
| 555-620-112 | <i>System Planning</i> |
| 555-620-113 | <i>System Planning Forms</i> |
| Telephone User Support | |
| 555-620-122 | <i>MLX-10D™, MLX-28D™, and MLX-20L™ Display Telephones User's Guide</i> |
| 555-620-123 | <i>MLX-10D™, MLX-28D™, and MLX-20L™ Display Telephones Quick Reference</i> |
| 555-620-150 | <i>MLX-10D™ (Display) Telephone Tray Cards (6 cards)</i> |
| 555-620-152 | <i>MLX-28D™ and MLX-20L™ Telephone Tray Cards (5 cards)</i> |
| 555-620-124 | <i>MLX-10™ Non-Display Telephone User's Guide</i> |
| 555-620-125 | <i>MLX-10™ Non-Display Telephone Quick Reference</i> |
| 555-620-151 | <i>MLX-10™ (Non-Display) Telephone Tray Cards (6 cards)</i> |
| 555-620-120 | <i>Analog Multiline Telephones User's Guide</i> |
| 555-620-121 | <i>Analog Multiline Telephones Quick Reference</i> |
| 555-620-128 | <i>MLC-5 Cordless Telephone Quick Reference</i> |
| 555-620-126 | <i>Single-Line Telephones User's Guide</i> |
| 555-620-127 | <i>Single-Line Telephones Quick Reference</i> |
| System Operator Support | |
| 555-620-134 | <i>MLX Direct-Line Consoles Operator's Guide</i> |
| 555-620-135 | <i>MLX Direct-Line Consoles Quick Reference</i> |
| 555-620-132 | <i>Analog Direct-Line Consoles Operator's Guide</i> |
| 555-620-133 | <i>Analog Direct-Line Consoles Quick Reference</i> |
| 555-620-136 | <i>MLX Queued Call Console Operator's Guide</i> |
| 555-620-137 | <i>MLX Queued Call Console Quick Reference</i> |
| Miscellaneous User Support | |
| 555-620-130 | <i>Calling Group Supervisor's Guide</i> |
| 555-620-131 | <i>Calling Group Supervisor's Quick Reference</i> |
| 555-620-129 | <i>Data User's Guide</i> |

| <u>Document No.</u> | <u>Title</u> |
|---------------------|--|
| 555-620-140 | Documentation for Qualified Technicians <i>Installation, Programming, & Maintenance (IP&M) Binder</i> (consists of 555-620-141, 555-620-142, 555-620-143, and 555-620-144) |
| 555-620-141 | <i>Installation</i> |
| 555-620-142 | <i>System Programming & Maintenance (SPM)</i> |
| 555-620-143 | <i>Maintenance and Troubleshooting</i> |
| 555-620-144 | <i>Programming Summary</i> |

How to Comment on This Document

We welcome your comments about the usefulness of this document. Please tell us what you like, as well as what you would improve. You may use the feedback form on the next page to let us know how we can continue to serve you. If the feedback form is missing, write directly to:

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Features

This book is designed to provide both summary and detailed information about every feature in the communications system. For each feature, the following types of information are provided, as applicable:

- **At a Glance**—summary information about the feature, including, for example, users affected, telephones supported, programming code, and factory settings
- **Description**—a detailed description of the functions and typical uses of the feature
- **Considerations and Constraints**—an explanation of exceptions and unusual conditions pertaining to the feature
- **Mode Differences**—an explanation of variations in the use of the feature in the different modes supported by the communications system
- **Telephone Differences**—an explanation of variations in the use of the feature with different telephones
- **Feature Interactions**—a list of issues and considerations to be aware of when using a feature in conjunction with another feature.

For ease of reference, features are covered in alphabetical order. For the convenience of users of the previous releases of the communication system and related products, an “Index of Feature Names” is included, showing where information can now be found about features that may have been renamed or reorganized in this release.

Index of Feature Names

| Feature Name | See |
|---|--|
| 400EM Module | * |
| 7500B Module | * |
| A | |
| Abbreviated Ring | Ringing Options |
| Account Code Entry | Account Code Entry/Forced Account Code Entry |
| Adapter | * |
| Adjuncts | |
| Alarm | Alarm, * |
| Alarm Clock | Display |
| Allowed Lists | Allowed/Disallowed Lists, Night Service |
| Applications | * |
| Area Code Tables | Automatic Route Selection |
| Asynchronous data management | * |
| Attendant Barge-In | Barge-In |
| Attendant DSS | Direct Station Selector-MLX |
| Attendant Message Waiting | Messaging |
| Attendant console - display | Display |
| Attendant console — Switched Loop | Queued Call Console |
| AUDIX Voice Power | Integrated Administration, * |
| Auto Answer - All | Auto Answer All |
| Auto Answer - Intercom | Auto Answer Intercom |
| Auto Dial | Auto Dial |
| Auto Intercom | Auto Answer Intercom |
| Auto Login/Logout (calling group) | Group Calling |
| Automated Attendant Service | Integrated Administration, * |
| Automated Document Delivery System (ADDS) | * |
| Automatic Answer (data management) | Auto Answer All, * |
| Automatic Callback | Callback, Remote Access |
| Automatic Completion | Transfer |
| Automatic Extended Call Completion | Queued Call Console |
| Automatic Hold or Release | Queued Call Console, Hold |
| Automatic Line Selection | Automatic Line Selection and Ringing/Idle Line Preference |
| Automatic Maintenance Busy | Automatic Maintenance Busy |
| Automatic Route Selection (ARS) | Automatic Route Selection |
| Autoqueuing | Remote Access |
| Auxiliary Power Units | * |

* See *Equipment and Operation* for further information.

| Feature Name | See |
|--|--|
| B | |
| Backup, battery | * |
| Barge-In | Barge-In |
| Barrier code | Remote Access |
| Behind Switch Mode | * |
| Behind Switch Operation | Recall/Timed Flash, Centrex Operation, * |
| Billing number of caller | Primary Rate Interface, Display |
| Bridging of station lines on multiline set | Personal Lines, System Access/Intercom Buttons |
| C | |
| Call Accounting Systems | * |
| Call Accounting Terminals | * |
| Call by Call Services Table | Primary Rate Interface |
| Call completion | Transfer (One-Touch) Queued Call Console (Extended) |
| Call Answer Service | Integrated Administration, * |
| Call Coverage | Coverage |
| Call Forward(ing)/Following | Forward and Follow Me |
| Call Management System | * |
| Call Park | Park |
| Call Pickup | Pickup |
| Call Pickup-directed | Pickup |
| Call Pickup-group | Pickup |
| Call Records | Station Messaging Detailed Recording (SMDR) |
| Call Restrictions | Calling Restrictions |
| Call Waiting | Call Waiting |
| Callback | Callback |
| Callback Queuing | Callback |
| Calling Group | Group Calling, Integrated Administration |
| Calls-In-Queue Alarm | Group Calling, Queued Call Console (QCC) |
| Camp On | Camp On |
| Cancel Delivered Message | Messaging |
| Capacities | * |
| CAS 100, 200 | * |
| CAS Hospitality | * |
| CAS Plus | * |
| CAS UNIX | * |
| CAT — Business | * |
| CAT — Hospitality | * |
| Central Office (CO) Facilities | * |

* See *Equipment and Operation* for further information.

| Feature Name | See |
|-------------------------------------|-------------------------------------|
| Centralized Telephone Programming | Programming, † |
| Centrex | Centrex Operation, * |
| Class of Restriction | Remote Access |
| Channel Service Unit | * |
| Common Administration | Integrated Administration |
| Conference | Conference |
| Consultation Transfer | Transfer |
| CONVERSANT® Intro | * |
| Coverage Delay Interval | Coverage |
| Coverage Group | Coverage, Integrated Administration |
| Coverage Inhibit | Coverage |
| Coverage On/Off | Coverage |
| Coverage | Coverage |
| D | |
| Data Hunt Groups | * |
| Data Management | * |
| Data Privacy | * |
| Data Status | * |
| Data Support | * |
| Data transmission speed | * |
| Default Local and Toll tables | Automatic Route Selection |
| Delay Announcement | Group Calling |
| Delay Ring | Ringing Options |
| Delete Message | Messaging |
| Deliver Message | Messaging |
| Dial by name (display feature) | Directories |
| Dial Dictation System Access (DDSA) | * |
| Dial Dictation adjunct | * |
| Dial Plan | System Renumbering |
| Dial Plan Routing Table | Primary Rate Interface |
| Dial Tone | Inside Dial Tone |
| Dialed number | Display |
| DID | * |
| Digital Data Ports | * |
| Digits in Extension | System Renumbering |

* See *Equipment and Operations Reference* for further information.

† See *System Programming* for further information.

| Feature Name | See |
|---|--|
| Direct Dept. Calling (Hunting, Hunt Groups) | Group Calling |
| Direct Facility Termination (DFT) | Personal Lines |
| Direct Group Calling (DGC) | Group Calling |
| Direct Inward Dialing (DID)Trunks | * |
| Direct Inward System Access (DISA) | Remote Access |
| Direct-line console | Direct-Line Console |
| Direct Pool Termination (DPT) | Pools |
| Direct station selector | Direct Station Selector-MXL |
| Directory built into PBX | Directories |
| Directory of System Speed Dial numbers | Speed Dial |
| Directory of extension numbers | Directories |
| Disallowed Lists | Allowed/Disallowed Lists |
| Display | Display |
| Display of name associated with station | Labeling |
| Display prompting | Display |
| Distinctive Ringing | Ringling Options |
| Do Not Disturb | Do Not Disturb |
| Drop | Conference |
| DSI facilities | * |
| E | |
| Electromagnetic interference (EMI) filter | * |
| Electrostatic discharge (ESD) | * |
| Environmental Requirements | * |
| Executive Barge-In | Barge-In |
| Extended call completion | Queued Call Console |
| Extended Station Status | Extension Status |
| Extension Auto Dial | Auto Dial |
| Extension Directory | Directories, Integrated Administration |
| Extension Pickup | Pickup |
| Extension programming | Programming, † |
| Extension Status | Extension Status, Group Calling |
| External Alerts | * |
| F | |
| Facility alpha/number for incoming calls | Labeling |
| Facility Restriction Level (FRL) | Automatic Route Selection |
| Fax Attendant | Integrated Administration |
| Fax message waiting | Messaging |
| FCC Registration | * |

* See *Equipment and Operation* for further information.
† See *System Programming* for further information.

| Feature Name | See |
|--------------------------------------|---|
| Feature feedback | Display |
| Flexible Numbering | System Renumbering |
| Follow me | Forward and Follow Me |
| Forced Account Code Entry | Account Code Entry/Forced Account Code Entry |
| Forward | Forward and Follow Me |
| G | |
| General Pickup | Pickup |
| General Purpose Adapter (GPA) | * |
| Ground Start Trunks | * |
| Grounding Requirements | * |
| Group Assignment | Night Service |
| Group Call Pickup | Pickup |
| Group Calling | Group Calling, Extension Status, Integrated Administration |
| Group Coverage | Coverage |
| Group Paging (Speakerphone) | Paging |
| Group Pickup | Pickup |
| H | |
| Hands Free Answer on Intercom (HFAI) | Auto Answer Intercom |
| Hands Free Unit | Auto Answer Intercom |
| Handset Mute | Headset Options |
| Headset Auto Answer | Headset Options |
| Headset Disconnect | Headset Options |
| Headset/Handset Mute | Headset Options |
| Headset Hang Up | Headset Options |
| Headset Operation | Headset Options |
| Headset Options | Headset Options |
| Headset Status | Headset Options, Queued Call Console |
| Headsets, hardware | * |
| Hold | Hold |
| Hold Reminder station | Display |
| Hold Return | Queued Call Console |
| Hotel mode | Extension Status |
| Hunt Groups | Group Calling |
| Hunt type | Group Calling |
| Hybrid/PBX Mode | * |

* See *Equipment and Operation* for further information.

| Feature Name | See |
|--|--|
| I | |
| ICOM buttons | System Access/Intercom Buttons |
| Identification of stations being covered, on covering party's display | Display |
| Idle Line Preference | Automatic Line Selection and Ringing/Idle Line Preference |
| Immediate ring | Ringing Options |
| Individual Coverage | Coverage |
| Individual Paging | Paging |
| Individual Pickup | Pickup |
| Information Service | Integrated Administration |
| InnManager Guest Management System™ | * |
| In-range Out-of-Building (IROB) protectors | * |
| Inside Auto Dial | Auto Dial |
| Inside Dial Tone | Inside Dial Tone |
| Inspect | Inspect |
| Inspect screen | Display |
| Integrated Solution II/III | * |
| Intercom (ICOM) Buttons | System Access/intercom Buttons |
| Intercom dialing | System Access/Intercom Buttons |
| Interfaces | * |
| IROB protectors | * |
| ISDN/PRI Interface | Primary Rate Interface (PRI), * |
| K | |
| Key Mode | * |
| L | |
| Labeling | Labeling |
| Last Number Dial | Last Number Dial |
| Last Number Redial | Last Number Dial |
| Leave Message | Messaging |
| Leave Word Calling | Messaging |
| Line Pickup | Pickup |
| Line request | Line Request |
| Linesfirunks | * |
| Line/trunk pool button access | Pools |
| Line/trunk queuing | Callback |

* See *Equipment and Operations Reference* for further information.

| Feature Name | See |
|-----------------------------------|------------------------------|
| Loop Start Trunks | * |
| Loudspeaker paging | Paging, * |
| M | |
| Maintenance Alarm | Alarm |
| Maintenance Busy | Automatic Maintenance Busy |
| Manual signaling | Signal/Notify |
| Menu-based feature activation | Display |
| Menu-based station programming | Programming |
| MERLIN Attendant™ | * |
| MERLIN®II modules | * |
| MERLIN II System Display Console | Direct-Line Console |
| MERLIN Mail™ | * |
| Message (fax) | Messaging |
| Message Center Operation | Queued Call Console |
| Message Drop Service | Integrated Administration, * |
| Message Indicator | Messaging |
| Message Status (operator) | Messaging |
| Message Waiting Receiver | Group Calling |
| Messaging | Messaging |
| Microphone Disable | Microphone Disable |
| Missed Reminder | Reminder Service |
| Mode Codes | * |
| Modem pooling, external | * |
| Modems | * |
| Modes of Operation | * |
| Multi-Function Module | Multi-Function Module, * |
| Music-on-Hold | Music-on-Hold |
| Mute | Microphone Disable |
| Mute, Headset/Handset | Headset Options |
| N | |
| N11 table | Automatic Route Selection |
| Name/number of internal caller | Display |
| Network Central Office facilities | * |
| Network Interfaces | * |
| Next Message | Messaging |
| Night Service | Night Service |
| No Ring option | Ringing options |
| Notify | Signal/Notify |
| Numbering Plan | System Renumbering |

* See *Equipment and Operations Reference* for further information.

| Feature Name | See |
|------------------------------------|--|
| O | |
| Off-premises extensions | * |
| Off-premises Range Extender (OPRE) | * |
| On- or off-hook queuing | Callback |
| On-premises host access (data) | * |
| One-Touch Hold | Transfer |
| One-Touch Transfer | Transfer |
| Operator Automatic Hold | Hold |
| Operator Hold Timer | Hold |
| OPRE | * |
| Originate Only | System Access/Intercom Buttons |
| Out-of-Building Station | * |
| Outside Auto Dial | Auto Dial |
| Outward Restriction | Calling Restrictions, Night Service |
| P | |
| Page All | Paging |
| Paging | Paging |
| Park | Park |
| Patterns | Automatic Route Selection |
| PBX mode | * |
| Personal Directory | Directories |
| Personal Speed Dial | Speed Dial |
| Personalized Ring | Ringing Options |
| Pickup, Call Waiting | Call Waiting |
| Pool Dial-Out Code Restriction | Calling Restrictions |
| Pool routing | Automatic Route Selection |
| Pools | Pools |
| Port/Expansion carrier port slots | * |
| Position Busy Backup | Queued Call Console |
| Posted Messages | Messaging |
| Power Failure Stations | * |
| Power Failure Transfer | * |
| Power Requirements | * |
| PRI | Primary Rate Interface |
| PRI Applications | * |
| Primary Coverage | Coverage |
| Primary Rate Interface (PRI) | Primary Rate Interface |
| Prime Line | Centrex Operation |
| Principal/User | Personal Lines, System Access/Intercom Buttons |
| Printer | Station Message Detail Recording (SMDR) |

* See *Equipment and Operation* for further information.

| Feature Name | See |
|-------------------------------|---|
| Printers, hardware | * |
| Priority call ringing | Ringing Options |
| Privacy | Privacy |
| Product Element Codes | * |
| Programming | Programming, Integrated Administration |
| Q | |
| Queue Priority | Queued Call Console |
| Queued Call Console | Queued Call Console |
| R | |
| Recall | Recall/Timed Flash |
| Recorded Announcement | * |
| Release Differences | * |
| Reminder Service | Reminder Service |
| Remote Access | Remote Access |
| Remote Administration | † |
| Remote Call Forwarding | Forward and Follow Me |
| Remote Programming | † |
| Restrictions | Calling Restrictions |
| Retrieve Message | Messaging |
| Return Call | Messaging |
| Return Ring Interval | Queued Call Console |
| Ring Buttons | System Access/Intercom Buttons |
| Ring Generator | * |
| Ring Timing Options | Ringing Options |
| Ringback (Transfer Audible) | Transfer |
| Ringling/Idle Line Preference | Automatic Line Selection and Ringing/Idle Line Preference |
| Ringing Options | Ringing Options |
| Rotary Signaling | Touch-Tone or Rotary Signaling |
| Routes per Pattern | Automatic Route Selection |
| Routing by Dial Plan | Primary Rate Interface |
| S | |
| SA buttons | System Access/Intercom Buttons |
| Saved Number Dial | Saved Number Dial |
| Scroll | Messaging |
| Secondary Coverage | Coverage |

* See *Equipment and Operation* for further information.
 † See *System Programming* for further information.

| Feature Name | See |
|---------------------------------------|---|
| Selective Callback | Callback |
| Send All Calls | Do Not Disturb |
| Send/Remove Message | Messaging |
| Send Ring | Ringing Options |
| Set Up Space | System Renumbering |
| Shared System Access | System Access/Intercom Buttons |
| Signaling | Signal/Notify |
| Simultaneous Conversations | * |
| Six-digit screening | Automatic Route Selection |
| SMDR | Station Message Detail Recording (SMDR) |
| Software Capacities | * |
| Speakerphone paging | Paging |
| Special Numbers Pattern | Automatic Route Selection |
| Special Services Selection Table | Primary Rate Interface |
| Speed Dial | Auto Dial, Directories, Speed Dial |
| SPM | Programming, † |
| Station Conference - External Parties | Conference |
| Station Conference - Total Parties | Conference |
| Station DSS auto dial | Direct Station Selector |
| Station lines | System Access/Intercom Buttons |
| Station Message Detail Recording | Station Message Detail Recording (SMDR) |
| Station programming | Programming |
| Station-to-Station Messaging | Messaging, Signal/Notify |
| Supplemental Alert Adapter | Multi-Function Module, * |
| Surge Protectors | * |
| Switched Loop Console | Queued Call Console |
| Switchhook (Flash) | Recall/Timed Flash |
| Switching, Digital | * |
| System Access buttons | System Access/Intercom Buttons |
| System Directory | Directories |
| System Numbering | System Renumbering |
| System Programming | Programming, † |
| System Programming and Maintenance | Programming, † |
| System Speed Dial | Speed Dial |
| T | |
| T1 Interface (DS1) | Primary Rate Interface, * |
| Telephones, hardware | * |
| Three-Digit Numbering | System Renumbering |

* See *Equipment and Operation* for further information.

† See *System Programming* for further information.

| <u>Feature Name</u> | <u>See</u> |
|---------------------------------|--|
| Tie Trunks | * |
| Time day date (display) | Display |
| Timed flash | Recall/Imed Flash |
| Time of Day Routing | Automatic Route Selection |
| Tip/Ring devices | * |
| Toll Restriction | Calling Restrictions |
| Toll Type | Toll Type |
| Touch-Tone Receivers | Touch-Tone or Rotary Signaling, * |
| Touch-Tone Signaling | Touch-Tone or Rotary Signaling |
| Transfer | Transfer |
| Transfer Audible | Transfer |
| Transfer Return Identification | Display |
| Transfer Return Interval | Transfer |
| T/R Devices | * |
| Trouble Alarm Connections | * |
| Trunk Pools | Pools |
| Trunk-to-Trunk transfer | Transfer |
| TTRs | Touch-Tone or Rotary Signaling, * |
| Two-Digit Numbering | System Renumbering |
| U | |
| UDC/DDC | Group Calling |
| Unit Loads | * |
| Unrestricted Restriction | Calling Restrictions |
| V | |
| Video Conferencing | * |
| VMI Ports | Group Calling |
| Voice announce | Paging |
| Voice announce disable | Voice Announce to Busy |
| Voice announce inside calls | Paging, System Access/Intercom buttons |
| Voice announce on busy stations | Voice Announce to Busy |
| Voice Announce Transfer | Transfer |
| Voice Buttons | System Access/Intercom Buttons |
| Voice mail message waiting | Messaging |
| Voice mail systems | Integrated Administration, * |
| Voice Messaging Systems | Integrated Administration, * |

* See *Equipment and Operation* for further information.

Abbreviated Ring

See Ringing Options.

Account Code Entry/Forced Account Code Entry

At a Glance

| | |
|--------------------|--|
| Users Affected | Telephone users, operators |
| Reports Affected | Extension Directory Extension Information SMDR |
| Mode | All |
| Telephones | All touch-tone telephones |
| Programming Code | *82 |
| Feature Code | 82 |
| MLX Display Label | Account Code [Acct] |
| System Programming | Enter extensions required to use account codes before making an outside call: ● Extensions → Account |
| Hardware | Printer for SMDR Reports or PC and printer equipped with AT&T CAS software needed for Account Code Reports |
| Maximums | 16 characters (0-9, *) |
| Factory Settings | Forced Account Code not assigned to any extensions |

Description

Account Code Entry is used to enter account codes (developed by accounting or administrative personnel) for outside calls, both incoming and outgoing. These codes appear on Station Message Detailed Recording (SMDR) reports, along with other call information, and are used for billing or cost accounting to associate outgoing calls with a project, client, or department. Users can enter an account code before or during a call, or not at all. They can also change, correct, or cancel an account code while the call is in progress.

Forced Account Code Entry is similar, but affects only outgoing calls and requires the user to enter an account code before placing an outside call. Users can change or correct an account code while a call is in progress; they cannot cancel it.

To enter, change, or correct an account code during a call, the user activates the feature and enters the account code. The person who enters the account code hears the tones generated by dialing the account code number. To cancel an account code (when permitted), the user activates the feature and exits without entering a code.

With Forced Account Code, a user who tries to make an outside call without entering an account code experiences the following:

- If a user selects an outside line on an **SA** button (by dialing a dial-out code) or on an **ICOM** button (by dialing the Idle Line Access code) without entering an account code, the call will be blocked. Depending on the type of telephone used, this may be indicated by the **Account Code Entry** button flashing, the **SA** button going to the off/idle state, or by hearing an intercept tone.
- If a user tries to make an outside call on a **Personal Line** or **Pool** button without entering an account code, the caller does not receive dial tone.

Considerations and Constraints

An account code cannot be entered for incoming calls if SMDR is administered to record outgoing calls only.

The system does not validate account codes; it only checks for the number of characters entered (maximum of 16) and for completion (dialing # or pressing an Account Code Entry display or feature button).

Account codes can be no more than 16 characters in length, and only the digits 0-9 and the character * can be used.

With Forced Account Code Entry, account codes can be entered for incoming calls and for incoming calls added to a conference call by using the Account Code Entry feature. The user does not have to enter account codes in these situations. (Outgoing calls added to a conference must have an account code.)

A user cannot change an account code entered from another telephone.

An incoming caller cannot hear account codes entered during a call.

An **Account Code Entry** button only activates and completes the account code entry. It does not automatically enter an account code. A separate outside **Auto Dial** button can be programmed with the account code number.

Mode Differences

Behind Switch Mode

In Behind Switch mode, single-line sets must be programmed through Idle Line Preference to select an **SA** or **ICOM** button when the user lifts the handset to make an outgoing call.

Queued Call Consoles

To make an outgoing call activate Account Code Entry by selecting the feature from the Home screen or by pressing the **Feature** button and selecting Account Code Entry from the display. After the account code is dialed, the entry is completed by dialing #. Then select a **Personal Line, SA, or Pool** button on which to make the call.

Normally account codes cannot be entered when a Group Coverage call is answered at a **Group Cover** button programmed on a multiline telephone. However, when the QCC queue is programmed as the receiver for a Coverage group, **Cover** buttons are not required and the QCC system operator can enter account codes. Those account codes appear on the SMDR printout. In this case, the Account Code Entry feature must be activated from the display and cannot be activated by dialing the feature code.

Other Multiline Telephones

An MLX telephone user can program account codes either individually, on outside **Auto Dial** buttons, or as an entry in the Personal Directory (MLX-20L™ telephones). The user can enter an account code by pressing the **Feature** button and selecting `Account Code` from the display.

On all other multiline telephones, Account Code Entry is activated by pressing a programmed **Account Code Entry** button or by pressing the **Feature** button and dialing 82. After the account code is dialed, the entry is completed by pressing a programmed **Account Code Entry** button or dialing #. On MLX display telephones, the feature can also be activated and completed by pressing the **Feature** button and selecting the feature from the display. Once the entry is completed, the user can select a **Personal Line, SA, or Pool** button, lift the handset, and make the call.

NOTE:

If the multiline telephone user completes the entry by dialing a #, account codes cannot be entered with System Speed Dial or Personal Speed Dial, since the # is used to complete the entry and cannot also be used to activate Speed Dial.

When Account Code Entry is assigned to a button, the LED flashes when the user lifts the handset and attempts an outside call. On MLX display telephones, the feature name appears on the display. The user can then enter the account code, press the **Account Code Entry** button (the green LED goes from flashing to on), select the outside line, and proceed with the call.

Single-Line Telephones

Single-line telephones in Behind Switch mode by default cannot use Account Code Entry or Forced Account Code Entry. If this feature will be used, the single-line telephone must be programmed through Idle Line Preference to select an **SA** or **ICOM** button so that the user will hear internal dial tone when the handset is lifted for an outgoing call.

Single-line telephones must have touch-tone dialing to use the Account Code Entry feature.

When the single-line telephone has internal dial tone, the feature can be activated by dialing **#82**.

Single-line telephone users cannot enter account codes with System Speed Dial or Personal Speed Dial because these features are activated by dialing **#**. The **#** completes the entry of an account code and cannot also be used to activate the Speed Dial features.

Feature Interactions

| | |
|----------------------------------|---|
| Auto Dial | Frequently used account code numbers can be programmed onto <i>outside</i> Auto Dial buttons. |
| Automatic Line Selection | Account codes can be entered by a single-line telephone user only when Automatic Line Selection is programmed to select an SA or ICOM button when the user lifts the handset. |
| Automatic Route Selection | When ARS is used on the system, an account code can be entered before or after dialing the telephone number. If Forced Account Code Entry is assigned, the user must enter the code before dialing the ARS dial-out code. |
| Callback | An account code must be entered before the user activates Callback. If not, the user must wait until after the call is connected before entering the account code. Account codes cannot be entered while the call is queued. |
| Conference | A separate account code must be entered for each outside call added to a conference. An account code does not carry over to other calls made at the same time. |
| Coverage | When answering calls on a Primary Cover , Secondary Cover , or Group Cover button, a receiver cannot enter an account code. The account code must be entered from the sender's telephone. (If the receiver tries to enter an account code, no error tone sounds, but the account code does not appear on the SMDR printout.) Since Cover buttons are not required when the Queued Call Console (QCC) queue is programmed as a receiver for a Coverage group, a QCC system operator can enter account codes and have them appear on the SMDR printout. |

| | |
|------------------------------|--|
| Display | When the Account Code Entry feature is activated, the <code>Acct :</code> message on the display prompts the user to enter the account code. The account code digits are shown next to the prompt as they are dialed. |
| Forward and Follow Me | Telephones with Forced Account Code Entry assigned can forward calls only to extensions and not to outside numbers. The user hears a fast busy signal if he or she tries to forward a call to an outside number. |
| Remote Access | Account codes cannot be entered on calls made via Remote Access. |
| Speed Dial | Multiline telephone users who use a programmed Account Code button or display telephone users who select the feature from the display can use Personal Speed Dial and System Speed Dial to dial account codes. Single-line telephone users and multiline telephone users who complete the entry by dialing a pound sign (#) cannot use Personal Speed Dial or System Speed Dial to dial account codes because # signals an exit from the feature. |
| SMDR | The account code is printed in the <code>ACCOUNT</code> field of the SMDR record. If the SMDR is administered for outgoing calls only, an account code cannot be entered for an incoming call. |
| Transfer | When a call is transferred, the destination extension cannot enter an account code to change the account code entered at the originating telephone. |

Administration

See Integrated Administration.

See Programming.

Alarm

At a Glance

| | |
|--------------------|---|
| Users Affected | Operators |
| Reports Affected | Extension Information |
| Mode | All |
| Telephones | System operator consoles only (QCC or DLC) |
| Programming Code | *759 |
| MLX Display Label | Alarm [Alarm] |
| System Programming | AuxEquip → MaintAlarms |
| Hardware | Alert device (bell or strobe) for Maintenance Alert |

Description

Alarms provide either a visible or an audible indication when the system detects a problem that needs immediate attention.

- **Alarm button:** A programmed button on Direct-Line Consoles (DLCS) and Queued Call Consoles (QCCs) that alerts the system operator to problems detected by the system software. The red LED next to the **Alarm** button on the system operator console goes on when the system detects a problem that requires immediate attention. It remains on until the problem is corrected.
- **Maintenance Alert:** An alert device such as a bell or strobe light connected to the line or trunk designated as a Maintenance Alarm port. The device rings or lights when the system detects a problem that requires immediate attention.
- The red LED on the processor module goes on when the system detects a problem that requires immediate attention. It remains lit until the problem is corrected.
- The red LED on certain modules goes on when the system detects a module-related problem, for example, a loss-of-service alarm on the 100D.

Considerations and Constraints

The red LED next to the **Alarm** button goes on and/or the Maintenance Alert sounds or flashes as soon as the system detects a problem.

All system operator consoles with an **Alarm** button receive the indication.

Telephone Differences

Direct-Line Consoles

Alarm buttons can be programmed only on system operator consoles; they cannot be programmed on any other telephone.

An **Alarm** button is factory assigned as a fixed feature on an analog DLC, but not on a digital DLC.

A digital DLC operator can use the Inspect feature to display the number of alarms; an analog DLC operator cannot use Inspect.

Queued Call Consoles

Alarm buttons can be programmed only on system operator consoles; they cannot be programmed on any other telephone.

An **Alarm** button is assigned as a fixed feature on a QCC.

A QCC operator can use the Inspect feature to display the number of alarms.

Feature Interactions

| | |
|-----------------------------------|---|
| Automatic Maintenance Busy | The red LED goes on next to the Alarm button on system operator consoles, and the designated Maintenance Alert device sounds or flashes when more than 50 percent of the trunks in the trunk pool are in a maintenance-busy state. |
| Inspect | Inspect can be used on a digital DLC or a QCC to display the number of alarms. Inspect cannot be used on an analog DLC. |
| Personal Lines | A line or trunk jack used for a Maintenance Alarm cannot be assigned as a Personal Line. |
| Pools | A trunk jack used for a Maintenance Alarm cannot be assigned to a trunk pool (Hybrid/PBX only). |

Allowed/Disallowed Lists

At a Glance

| | |
|--------------------|--|
| Users Affected | Telephone users, operators |
| Reports Affected | Access to Allowed Lists Access to Disallowed Lists Allowed Lists Disallowed Lists Remote Access (DISA) Information |
| Mode | All |
| Telephones | All |
| System Programming | Establish, change, or remove Allowed/Disallowed Lists: <ul style="list-style-type: none"> ● Tables → AllowList/Disallow Assign or remove Allowed/Disallowed Lists for individual telephones: <ul style="list-style-type: none"> ● Tables → AllowTo/DisallowTo Assign or remove Allowed/Disallowed Lists for non-tie trunks used for Remote Access: <ul style="list-style-type: none"> ● Lines Trunks → RemoteAccss → Non-TIE Lines → Allow List/DisallowLst Assign or remove Allowed/Disallowed Lists for tie trunks used for Remote Access: <ul style="list-style-type: none"> ● Lines Trunks → RemoteAccss → TIE Lines → Allow List/DisallowLst Assign or remove Allowed/Disallowed Lists for each Remote Access barrier code: <ul style="list-style-type: none"> ● Lines Trunks → RemoteAccss → Barrier Code → Allow List/DisallowLst |
| Maximums | |
| Allowed Lists | 6 digits per number (+ leading 1, if required) 10 numbers per list 8 lists per system 8 lists per telephone |
| Disallowed Lists | 11 digits per number (+ wildcard) 10 numbers per list 8 lists per system 8 lists per telephone |

Description

Used in conjunction with Calling Restrictions (outward and toll), an Allowed List is a list of numbers that the user is allowed to dial, despite restrictions. For example, an Allowed List assigned to an outward-restricted telephone can allow calls to specific local numbers, such as emergency (911), or toll numbers. For toll-restricted telephones, an assigned Allowed List can allow calls to specific area codes and/or exchanges needed for daily tasks.

A Disallowed List is a list of local or toll numbers that the telephone user is not allowed to dial, even if the telephone is otherwise unrestricted. Disallowed Lists can be used as an alternative to or in conjunction with Calling Restrictions.

Both Allowed Lists and Disallowed Lists are assigned to individual extensions.

Allowed and Disallowed Lists can also be used in conjunction with Remote Access to restrict calls made through the system from remote locations. In this case, Allowed and Disallowed Lists can be assigned to either specific Remote Access barrier codes or (if barrier codes are not used) to specific types of trunks--all Tie/DID and all non-Tie/non-DID trunks.

When an Allowed List is assigned to a barrier code or remote access trunks, the remote access user using that code can dial specific numbers included in the list. When a Disallowed List is assigned to a barrier code, the remote access user using that code cannot reach the specific numbers included in the list.

If barrier codes are not used for remote access, then Allowed and Disallowed Lists for remote access users can be assigned to all Tie/DID trunks, and all non-Tie, non-DID trunks.

A Night Service Allowed List can be programmed with up to ten numbers that any user can dial without having to enter the Night Service password. For additional information, see Night Service.

Considerations and Constraints

A Disallowed List takes precedence over an Allowed List. If a telephone number is on both an Allowed List and a Disallowed List assigned to an individual extension, the user cannot dial the number.

If a zero (0) is programmed as the first digit of an Allowed List entry, any toll restriction assigned to a telephone is removed for calls placed through a toll operator.

Individual Allowed and Disallowed Lists are numbered 0 through 7. Within each list, entries are numbered 0 through 9.

The Pause character (entered by pressing **Hold**) can be used as a wild card character in Disallowed Lists, for example, to indicate that calls to a given exchange are restricted in every area code. (The Pause character is shown on the planning form as *p*.) Wild card characters are not permitted in Allowed List entries.

When used in conjunction with Remote Access, Allowed and Disallowed Lists are assigned to specific barrier codes or to types of trunks--all Tie/DID trunks, or all non-Tie DID trunks. Allowed and Disallowed Lists cannot be assigned to trunks on an individual basis.

When used with Automatic Routing System (ARS), Allowed and Disallowed Lists are not applied until the user dials the ARS code and a pool is selected.

Because restrictions imposed by a Disallowed List apply to the telephone used to initiate a call to an outside number, a user with a restricted telephone can circumvent restrictions by asking a system operator with an unrestricted console to connect an outside call.

Feature Interactions

| | |
|----------------------------------|---|
| Auto Dial | A user with a restricted telephone cannot dial a restricted number (outside or toll) by using an Auto Dial button unless the number is on the Allowed List for that telephone. A user cannot dial an outside number by using an Auto Dial button if the number is on a Disallowed List. |
| Automatic Route Selection | Automatic Route Selection (ARS) checks Allowed and Disallowed Lists before choosing the route for a call. This prevents users with restricted telephones from dialing numbers that are not on an Allowed List. ARS also prevents a user from dialing numbers on a Disallowed List. |
| Calling Restrictions | When used with Calling Restrictions, Allowed Lists can permit the dialing of specific numbers such as emergency numbers from an outward-or toll-restricted telephone. |
| Conference | A user with a restricted telephone cannot add a participant (outside or toll) to a conference call unless the participant's number is on the Allowed List for that telephone. A user cannot add an outside number to a conference call if the number is on a Disallowed List. |
| Directories | A user with a restricted telephone cannot use the System Directory to dial a restricted number unless the System Speed Dial number is marked or the number is on the Allowed List for that telephone. |
| Forward and Follow Me | A user with a restricted telephone cannot forward calls to a restricted (outside or toll) number unless the number is on the Allowed List for that telephone. If the number is on the Disallowed List for that telephone, the call cannot be forwarded. When activating Forward, a user with a restricted telephone does not hear an error tone, but when a call is received, the Forward is denied if the number is not on the Allowed List. |

| | |
|-----------------------|--|
| Night Service | A Night Service Emergency Allowed List can be programmed with up to ten numbers that any user can dial without having to enter the Night Service password. For additional information, see Night Service. |
| Personal Lines | A user with a restricted telephone cannot dial a restricted number (outside or toll) on a Personal Line button unless the number is on the Allowed List for that telephone. If the number is on a Disallowed List, the user cannot dial it. |
| Remote Access | Both Allowed and Disallowed Lists are assigned as items of the class of restriction (COR) for the Remote Access feature. When barrier codes are not used, Allowed and Disallowed Lists are assigned to trunks system-wide. When barrier codes are used, Allowed and Disallowed Lists are assigned to individual barrier codes. |
| Speed Dial | When a marked System Speed Dial number (the dialed number is suppressed from the display) is used to dial a number, calling restrictions (such as toll or outward restrictions) assigned to that telephone are overridden. When an unmarked System Speed Dial or a Personal Speed Dial number is used to dial a restricted number the call cannot be completed unless the number is on the Allowed List for that telephone. |
| Toll Type | When trunks with different toll types are connected (for example, basic trunks and PRI facilities), a toll prefix (0 or 1) must be dialed for toll calls on some trunks but is not required on other trunks. In such instances, two Disallowed List entries are needed to restrict users from dialing specific area codes and/or telephone numbers (for example, to restrict users from dialing area code 505, the Disallowed List must include both 505 and 1505). |

Auto Answer All

At a Glance

| | |
|-------------------|--|
| Users Affected | Telephone users, DLC operators |
| Reports Affected | Extension Information |
| Mode | All |
| Telephones | Analog multiline |
| Programming Code | *754 (centralized telephone programming only) |
| MLX Display Label | AutoAnsAll |
| Hardware | General Purpose Adapter (GPA) needed to connect answering device to analog multiline telephone; 502B/502C headset adapter needed for headset options |

Description

With Answering Device: Auto Answer All is used on analog multiline telephones only or analog Direct-Line Consoles (DLCs) with a modem, answering machine, fax machine, or other answering device connected through a GPA to answer both inside and outside calls when the user is not available.

To activate Auto Answer All, the user slides the switch on the GPA to **Auto** and presses the **Auto Answer All** button. The green LED next to the button turns on, and incoming calls are answered automatically.

To deactivate the feature, the user can either slide the switch on the GPA to **Basic** or press the **Auto Answer All** button. If the button is pressed to deactivate the feature, the green LED next to the button goes off. In either case, the telephone returns to normal operation.

With Headset: Auto Answer All can also be used with a 5026 or 502C headset adapter to allow the analog multiline telephone user or analog DLC operator with a headset to be connected automatically to ringing calls. A tone heard through the headset signals an incoming call.

A programmed button is used to activate and deactivate Auto Answer All. The user selects the lines to be answered by the device by programming Immediate Ring or Delay Ring as the ringing option. Lines that are not to be answered are programmed as No Ring.

Telephones Differences

Queued Call Consoles

Auto Answer All cannot be used on a QCC.

Other Multiline Telephones

Auto Answer All cannot be used on MLX telephones or the MLC-5 cordless telephone.

Single-Line Telephones

Auto Answer All cannot be used on single-line telephones.

Considerations and Constraints

When Auto Answer All is used, all voice announcements (including Voice Announce to Busy) should be disabled because the device connected to the GPA cannot answer voice-announced calls.

Auto Answer All cannot be used with a Hands Free Unit (HFU).

Occasionally a second alert (or zip) tone may sound on incoming or intercom calls. This is normal.

Auto Answer All should be used instead of Auto Answer Intercom to allow an answering device to answer intercom calls. Using Auto Answer Intercom can cause intercom calls to be dropped.

Feature Interactions

| | |
|------------------------------|--|
| Auto Answer Intercom | Both Auto Answer All and Auto Answer Intercom can be programmed on the same telephone, but they cannot be used at the same time. |
| Coverage | Auto Answer All is used when a receiver with an analog multiline telephone wants Individual or Group Coverage calls answered by an answering machine connected to the telephone. |
| Forward and Follow Me | An answering device connected to an analog multiline telephone can answer forwarded calls when Auto Answer All is activated. |

Group Calling

Members in a Calling Group with analog multiline telephones can use Auto Answer All when an answering machine is connected to their telephones. When the feature is activated, all incoming calls ringing on the Calling Group member's telephone—both calls for the Calling Group and calls to the member's own extension—are answered automatically by the answering machine.

Ringling Options

The analog multiline telephone user selects the lines to be answered by programming each line for Immediate or Delay Ring and programming the lines not to be answered for No Ring. If the user wants the device to answer only inside calls, all Personal Lines (outside lines assigned to buttons on the telephone) must be programmed for No Ring.

**System Access/
Intercom Buttons**

When Auto Answer All is activated, all calls received at an **SA Ring, ICOM Ring, SA Voice, or ICOM Voice** button can be answered automatically by the device connected to the GPA. If **Shared SA** buttons are assigned, only the principal extension should be programmed for Immediate Ring to prevent the call from being answered at the principal extension and at extensions with the **Shared SA** button.

**Voice
Announce**

Voice-announced calls received at the analog multiline telephone are not answered by a device connected via a GPA because ringing current is not sent to the device.

Auto Answer Intercom

At a Glance

| | |
|-------------------|---|
| Users Affected | Telephone users, operators |
| Reports Affected | Extension Information |
| Mode | All |
| Telephones | Analog multiline |
| Programming Code | *753 (centralized telephone programming only) |
| MLX Display Label | AutoAns Icom |
| Hardware | Hands Free Unit (HFU) is used to answer both inside and outside calls |

Description

Some models of analog multiline telephones do not have a built-in speakerphone. Users with this type of telephone can still answer inside calls without lifting the handset by using Hands Free Answer on Intercom (HFAI). By connecting an optional Hands Free Unit (HFU), a user can also answer outside calls without lifting the handset.

To activate Auto Answer Intercom, the user presses the **Auto Answer Intercom** button. The green LED next to the button turns on. The HFU turns on automatically when a call is received.

To deactivate the feature, the user presses the **Auto Answer Intercom** button. The green LED goes off, and the HFU responds only to outside calls.

Mode Differences

In the Hybrid/PBX mode, when Auto Answer Intercom is activated and a call is received on an **SA** button, the HFU turns on even if the button is programmed for Delay Ring or No Ring.

Telephones Differences

Queued Call Consoles

Auto Answer Intercom cannot be used on a QCC.

Other Multiline Telephones

Auto Answer Intercom cannot be used on MLX telephones or the MLC-5 cordless telephone.

Single-Line Telephones

Auto Answer Intercom cannot be used on single-line telephones.

Considerations and Constraints

Auto Answer All should be used instead of Auto Answer Intercom to allow an answering device to answer intercom calls. Using Auto Answer Intercom can cause intercom calls to be dropped.

In the Hybrid/PBX mode, when Auto Answer Intercom is activated and a call is received on a System Access button, the HFU turns on even if the button is programmed for Delayed Ring or No Ring.

Feature Interactions

| | |
|--|---|
| Auto Answer All | Both Auto Answer All and Auto Answer Intercom can be programmed on the same telephone, but they cannot be used at the same time. |
| Coverage | Auto Answer Intercom does not allow a receiver with an analog multiline telephone to use an HFU to answer calls received on a Primary Cover , Secondary Cover , or Group Cover button. |
| System Access/ Intercom Buttons | When the Auto Answer Intercom feature is activated, the HFU is used to answer inside and outside calls received on an SA button. It is not used to answer calls on a Shared SA button. |

Auto Dial

At a Glance

| | |
|-------------------|--|
| Users Affected | Telephone users, DLC operators |
| Reports Affected | Extension Information |
| Mode | All |
| Telephones | All except QCC and single-line telephones |
| Programming Code | |
| Inside | *22 + ext. no. |
| Outside | *21 + number |
| MLX Display Label | Auto Dial,Inside [AutoD,In] Auto Dial,Outside [AutoD,Out] |
| Maximums | 28 digits, including special characters |



CAUTION:

Emergency numbers and other numbers should be tested during off-peak hours, such as early morning or late evening. The user should remain on the line and briefly explain to the dispatcher the reason for the call.

Description

Auto Dial buttons are used for one-touch dialing of frequently called telephone numbers. Two types of **Auto Dial** buttons can be programmed:

- **Inside Auto Dial:** This button is used for any extension or group extension in the system (such as co-workers, calling groups, fax machines, or a voice mail system), a Paging Group extension, or a calling group extension. A system operator can also program an inside **Auto Dial** button for a Park Zone extension number.

When an inside **Auto Dial** button is programmed, the user can see the status of the extension associated with the button; the green LED next to the button is on when a person at the extension is on a call, using Do Not Disturb, or the telephone is in forced idle for centralized telephone programming or system programming.

- **Outside Auto Dial:** This button is used not only for frequently called telephone numbers, but also for numbers such as account codes, long-distance company access codes, bank access codes, or emergency contact numbers.

Considerations and Constraints

When an **Auto Dial** button is used to make a call, the green LED next to the button does not go on.

Only company extension numbers should be programmed on inside **Auto Dial** buttons. Account codes, access codes, and outside telephone numbers should be programmed on outside **Auto Dial** buttons.

If a user tries to program an incomplete extension number on an inside **Auto Dial** button, the system does not provide an error tone and the button remains as previously programmed.

If numbers are being dialed incorrectly by outside Auto Dial, it is possible that the digits are being dialed before a central office dial tone is received. In this case, a Pause should be programmed as the first digit of the dialed number in the Key mode and the next digit (after the dial-out code) of the dialed number in the Hybrid/PBX mode.

To enter special characters in a telephone number programmed on an **Auto Dial** button, use **Conf** for the Flash character, **Drop** for the Stop character, and **Hold** for the Pause character. See Table 1.

If the Stop character is the last character in the dialed number, it is not displayed when the user presses the **Auto Dial** button. The user must press the **Auto Dial** button again to complete dialing.

Table 1. Special Characters for Auto Dial

| Press... | See*... | Means... |
|-------------------|----------------|--|
| Drop† | s | Stop. Halts dialing within a sequence of automatically dialed numbers. For example, an outside Auto Dial button may be programmed with a password then a Stop, followed by a phone number. To use Auto Dial with a Stop in the sequence, press the button to dial the password, listen for the dialing and connection, and press the button again to dial the phone number. |
| Hold | p | Pause. Inserts 1.5 second pause in the dialing sequence. Multiple consecutive pauses are allowed. |
| Conference | f | Flash. Sends a switchhook flash. Must be the first entry in the dialing sequence. |
| # # | # | End of Dialing for Extension Programming only. Used at the end of a dialing sequence to indicate you have finished dialing or to separate one group of dialed digits from another, for example, account codes from number dialed. |
| # | # | End of Dialing. Used at the end of a dialing sequence to indicate you have finished dialing or to separate one group of dialed digits from another. |

* Display phones only.

† Not available on MLC-5 cordless phones.

Mode Differences

Hybrid/PBX Mode

In the Hybrid/PBX mode, the system automatically turns on the speakerphone and selects an **SA** button when the user presses an inside or outside **Auto Dial** button before lifting the handset.

Key Mode

In the Key mode, the system automatically turns on the speakerphone and selects an outside line button when the user presses an outside **Auto Dial** button without lifting the handset. When the user presses an inside **Auto Dial** button without lifting the handset, the system automatically turns on the speakerphone and selects an **ICOM** button.

Behind Switch Mode

In the Behind Switch mode, the system automatically selects the **Prime Line** button and turns on the speakerphone whenever the user presses an outside **Auto Dial** button. If the Automatic Line Selection sequence has been changed to select the **ICOM** button, the user must press the **Prime Line** or **Outside Line** button before pressing an outside **Auto Dial** button. When the user presses an inside **Auto Dial** button without lifting the handset, the system automatically turns on the speakerphone and selects an **ICOM** button. The system does not automatically select an outside line.

Telephone Differences

Direct-Line Consoles

Inside Auto Dial can be programmed onto available buttons on a DLC. The system operator can use the buttons to transfer a call, make an internal call, or determine availability of the extension.

Queued Call Consoles

Use the Personal or System Directory instead of outside **Auto Dial** buttons, which cannot be programmed on the Queued Call Console (QCC). The Extension directory or **DSS** buttons can be used instead of inside **Auto Dial** buttons.

Other Multiline Telephones

All multiline telephone users can program and use **Auto Dial** buttons. Users of MLX-20L telephones can use Personal Directory in place of Auto Dial.

MLX display telephone users can select the feature from the display to program it.

Single-Line Telephones

Single-line telephones cannot program Auto Dial buttons.

Feature Interactions

| | |
|---|--|
| Account Code Entry | Frequently used account code numbers can be programmed onto outside Auto Dial buttons. |
| Allowed Lists Calling Restrictions | A user with a restricted telephone cannot dial a restricted number (outward or toll) using an Auto Dial button unless the number is on the Allowed List for that telephone. |
| Automatic Route Selection | Automatic Route Selection (ARS) dial-out codes cannot be programmed on inside Auto Dial buttons. An ARS dial-out code can be programmed on an outside Auto Dial button. |
| Conference | Press the Conference button to enter the Flash special character in a telephone number programmed on an Auto Dial button. Press the Drop button to enter the Stop special character in a telephone number programmed on an Auto Dial button. |
| Disallowed Lists | A user cannot dial an outside number using an Auto Dial button when the number is on a Disallowed List assigned to the telephone. |
| Display | When a user presses a programmed Auto Dial button, the digits appear on the display as if the user were dialing them from the dialpad, and the number is automatically dialed. An MLX telephone user can select Auto Dial from the display only during programming. |
| Do Not Disturb | When a user activates Do Not Disturb, the green LED goes on next to all Auto Dial buttons programmed with the user's extension. |
| Forced Account Code Entry | Frequently used account code numbers can be programmed onto outside Auto Dial buttons. |
| Forward and Follow Me | Forward and Follow Me do not work when Auto Dial is used to enter the destination telephone. |

| | |
|---------------------------|--|
| Group Calling | The Calls-in-Queue-Alarm button for a calling group is assigned on a multiline telephone by programming an inside Auto Dial button with the calling group's extension number. When a DSS is not available, Auto Dial buttons programmed with each calling group member's extension are used by the calling group supervisor to monitor group member availability. |
| Headset Options | If headset operation is activated on the telephone or console, the user must select a line button before using Auto Dial to dial an extension or an outside number. |
| Last Number Dial | A number dialed by pressing a programmed outside Auto Dial button is saved for Last Number Dial as if it were dialed with the dialpad, but special characters do not work. An extension dialed by pressing a programmed inside Auto Dial button is not saved for Last Number Dial. |
| Microphone Disable | When an MLX telephone user's microphone is disabled, pressing an Auto Dial button turns on the speakerphone so the user can hear the number being dialed. However, the user must lift the handset to talk once the call is answered. |
| Paging | Paging an extension for a Speakerphone Paging Group can be programmed on an inside Auto Dial button. |
| Park | A system operator can program Park Zone codes on inside Auto Dial buttons. An inside Auto Dial button can also be programmed with a user's (including system operator's) own extension number and can be used to park calls. When the system is programmed for One-Touch Hold with manual completion, a user hears a busy signal when parking a call at his or her own extension number and must complete the transfer by hanging up or pressing the Transfer button. |
| Personal Lines | Only an outside Auto Dial button—not an inside one—can be used on a Personal Line. |
| Pools | Pool dial-out codes cannot be programmed on inside Auto Dial buttons. A pool dial-out code can be programmed on an outside Auto Dial button when a telephone number is also included. |
| Saved Number Dial | A number dialed by pressing a programmed outside Auto Dial button can be saved for Saved Number Dial by pressing the programmed Saved Number Dial button. |
| Signaling | A Signal button and an Auto Dial button cannot be programmed for the same extension. If a user tries to program an Auto Dial button when a Signal button is already programmed, or vice versa, the feature being programmed erases the previously programmed feature. |

| | |
|--|---|
| SMDR | All numbers dialed on an outside call using Auto Dial are recorded on the SMDR report. |
| System Access/ Intercom Buttons | When an inside Auto Dial button is pressed, the system automatically selects an SA or ICOM button and turns on the speakerphone. When an outside Auto Dial button is pressed, the system automatically selects an outside line button in Key mode, a Prime Line button in Behind Switch mode, or an SA button in Hybrid/PBX mode. |
| Transfer | Users can press Auto Dial buttons instead of dialing extension numbers to transfer calls. To use the One-Touch Transfer option, users must program Auto Dial buttons for extensions to which they transfer calls. When a system operator transfers a call and it returns unanswered, the green LED next to the Auto Dial button flashes to indicate the extension from which the call is returning. Only system operators receive this indication. |

Automatic Line Selection and Ringing/Idle Line Preference

At a Glance

| | | | |
|--|---|------------------|------------------------------------|
| Users Affected | Telephone users, operators | | |
| Reports Affected | Extension Information | | |
| Mode | All | | |
| Telephones | All | | |
| Programming Code | | | |
| Ringing/Idle Line Preference | | | |
| On | *343 | | |
| Off | *344 | | |
| ALS sequence (centralized telephone programming only for single-line telephones) | | | |
| Begin button sequence | *14 | | |
| End button sequence | **14 | | |
| MLX Display Label | Line Prefer [LnPrf] AutoLineSel (centralized telephone programming only) | | |
| Maximums | | | |
| Buttons per telephone in ALS sequence | 8 | | |
| Factory Settings | | | |
| Ringing/Idle Line Preference | On | | |
| ALS Sequence by Mode | Hybrid/PBX | Key | Behind Switch |
| MLX Telephones | 3 SA | 8 Personal Lines | 1 Prime Line |
| Analog Multiline Telephones | 3 SA | 8 Personal Lines | 1 Prime Line |
| Single-Line Telephones | 3 SA | 2 ICOM | 1 Prime Line |
| Direct-Line Consoles | 2 SA+ 6 Personal Lines | 8 Personal Lines | 1 Prime Line + 7 Personal Lines |
| Queued Call Console | 5 Call (fixed) | | |

Description

Automatic Line Selection (ALS) and Ringing/Idle Line Preference are two closely related features. Ringing/Idle Line Preference directs the system to select a line button automatically for making or answering a call; ALS specifies the order in which buttons should be selected.

Ringling/Idle Line Preference

Ringling/Idle Line Preference is a single option that controls two aspects of a telephone's behavior. It is turned on or off for each extension through extension programming or centralized telephone programming, using the display or programming codes. When Ringling/Idle Line Preference is on for an extension, the system selects a line button automatically, as follows:

- Ringling Line Preference selects a ringling outside line, **SA** or **ICOM**, or **Cover** button — that is, the red LED goes on next to the button with the ringling call. If the user lifts the handset or presses **Speaker**, he or she is automatically connected to the ringling call.

The button must be programmed for Immediate Ring or Delay Ring. The red LED does not go on next to a button programmed for No Ring, See Ringling Options for additional information.

- Idle Line Preference selects an available outside line, **SA**, or **ICOM** button for an outgoing call. If the user lifts the handset or presses **Speaker** when no call is ringling, the red LED goes on next to an available line button, and the user is automatically connected to that line.

The factory setting for Ringling/Idle Line Preference is on for all extensions. If it is turned off for an extension, no line button at that extension is ever selected automatically. The red LED is never on until the user presses the line button with a ringling call (flashing green LED) or an available line button (green LED off) to make a call.

Automatic Line Selection

When Ringling/Idle Line Preference is turned on at an extension, the system uses the programmed ALS sequence to select an idle **SA** or **ICOM** button or outside line button for originating a call. When the user lifts the handset or presses **Speaker** without selecting a line button, the red LED goes on next to the first button in the programmed sequence and the user is connected to that line. If the first line is busy, the system selects the second button in the sequence, and so on.

For example, if a user normally makes toll calls, a WATS line assigned to the extension can be programmed as the first line in the sequence, and local lines as the second, third, and so on. When the user lifts the handset or presses **Speaker**, the WATS line, if available, is selected automatically.

To override ALS when another line is preferred, the multiline telephone user presses another line button before lifting the handset or pressing **Speaker** (the red LED next to the selected button goes on),

Up to eight line buttons can be programmed in the ALS sequence for an extension, either through centralized telephone programming or — except for single-line telephones — through extension programming, using programming codes only.

Table 2 shows the factory-set ALS sequence for each kind of telephone by system operating mode. When Ringing/Idle Line Preference is on, buttons are selected in the numbered order shown. For multiline telephones (including operator consoles), the factory-set sequence begins with the lower left-hand button of the type indicated, moves upward in the first column, moves to the bottom of the next column to the right (if necessary), and moves upward to the maximum of eight buttons. Where outside line buttons are included in the sequence, they are selected in numeric order (by default, 801, 802, . . .), up to the maximum number of lines shown.

Table 2. Factory-Set Automatic Line Selection Sequence

| Telephone | Mode | | | | |
|---|------------------|------------------|-----------|---------------|---------------|
| | Hybrid/PBX | Key | | Behind Switch | |
| Multiline (MLX or Analog) | 3. SA O | 3. Line 3 | 8. Line 8 | 1. Prime Line | |
| | 2. SA V | 2. Line 2 | 7. Line 7 | | |
| | 1. SA R | 1. Line 1 | 6. Line 6 | | |
| | | | 5. Line 5 | | |
| | | | 4. Line 4 | | |
| Single-Line | 3. SA O | 2. ICOM R | | 1. Prime Line | |
| | 2. SA R | 1. ICOM R | | | |
| | 1. SA R | | | | |
| Direct-Line Consoles (MLX or Analog) | 5. Line 3 | 3. Line 3 | 8. Line 8 | 3. Line 3 | 8. Line 8 |
| | 4. Line 2 | 2. Line 2 | 7. Line 7 | 2. Line 2 | 7. Line 7 |
| | 3. Line 1 | 8. Line 6 | 1. Line 1 | 6. Line 6 | 1. Prime Line |
| | 2. SA V | 7. Line 5 | 5. Line 5 | 5. Line 5 | 5. Line 5 |
| | 1. SA R | 6. Line 4 | 4. Line 4 | 4. Line 4 | 4. Line 4 |
| Queued Call Console | 5. Call 5 | | | | |
| | 4. Call 4 | | | | |
| | 3. Call 3 | | | | |
| | 2. Call 2 | | | | |
| | 1. Call 1 | | | | |

SA R, ICOM R = SA Ring, ICOM Ring
 SA V, ICOM V = SA Voice, ICOM Voice
 SA O, ICOM O = SA Originate Only, ICOM Originate Only

Considerations and Constraints

Outside line buttons and **SA** or **ICOM** buttons can be included in the ALS sequence. However, inside and outside lines should not be interleaved. A typical sequence would consist of all desired **SA** or **ICOM** buttons, followed by all desired outside line buttons.

When Personal Line or **Pool** buttons are assigned to a single-line telephone or other tip/ring device (such as a fax machine) connected to an 012 module or a Multi-Function Module (MFM), the buttons are automatically added to the ALS sequence.

When the user or system manager enters ALS programming, the system clears the current ALS sequence for the extension. If the person programming the telephone exits without selecting any buttons, the telephone has no ALS sequence. The effect is the same as if Ringing/Idle Line Preference is turned off — no line is selected automatically when the user lifts the handset.

Mode Differences

Hybrid/PBX Mode

The factory-set ALS sequence for multiline and single-line telephones includes only **SA** buttons. Users can make outside calls by dialing the pool dial-out code (usually 70) or Automatic Route Selection code (usually 9).

Key Mode

The factory-set ALS sequence for multiline telephones (including DLCs) includes only Personal Line buttons. Users can make inside calls by pressing an available **ICOM** button before dialing.

The factory-set ALS sequence for single-line telephones includes only **ICOM** buttons. Users can make outside calls by dialing the Idle Line Access code (usually 9).

Behind Switch Mode

The factory-set ALS sequence is the Prime Line. The sequence can be changed to an **ICOM** line followed by the Prime Line or outside lines. This allows the single-line telephone user to use system features and to select the Prime Line and/or outside lines by dialing the Idle Line Access code (usually 9).

Telephone Differences

Queued Call Consoles

The ALS sequence on a QCC starts at the lowest **Call** button and moves upward, and Ringing/Idle Line Preference is on. Neither can be changed.

Other Multiline Telephones

The ALS sequence is assigned through extension programming, using programming codes only, or through centralized telephone programming.

Single-Line Telephones

The ALS sequence for a single-line telephone can be changed only through centralized telephone programming. It cannot be changed by the telephone user.

The ALS sequence for single-line telephones and other tip/ring equipment connected to an 012 module, an 008 OPT module, or an MFM is factory-set to include only **SA** or **ICOM** buttons. As outside trunks or pools are assigned to the telephone, they are automatically added to the ALS sequence.

In Key mode, if the ALS sequence for a single-line telephone is changed to include only outside lines, the user cannot use system features except via Recall or switchhook flash when off-hook.

In Behind Switch mode, the factory setting for ALS is the Prime Line. The sequence can be changed to an **ICOM** button followed by the Prime Line or outside lines. This allows the single-line telephone user to use system features and to select the Prime Line and/or outside lines by dialing the Idle Line Access code.

Feature Interactions

| | |
|---|---|
| Account Code Entry/Forced Account Code Entry | Account codes can be entered by a single-line telephone user only when ALS is programmed to select an SA or ICOM button when the user lifts the handset. |
| Coverage | When Ringing/Idle Line Preference is on for an extension, the system automatically selects a Primary Cover , Secondary Cover , or Group Cover button with a ringing call. However, these buttons cannot be programmed in an ALS sequence because they cannot be used to make calls. |
| Headset Options | When an MLX telephone or console is in headset operation, Ringing/Idle Line Preference is off automatically. The user must select a line manually to make a call; if Headset Auto Answer is off, the user must select a ringing line manually to answer the call. |
| Multi-Function Module | When an MFM is installed in an MLX telephone, the ALS sequence for the MFM should be set to select SA Ring or ICOM Ring , then SA Originate Only or ICOM Originate Only , then outside lines (or the Prime Line in Behind Switch mode) assigned to the MFM. Ringing/Idle Line Preference should be on for an MFM. |

- Ringling Options** When Ringing/Idle Line Preference is on, the system does not automatically select an outside line, **SA**, **ICOM**, or **Cover** button programmed for No Ring. The user must select the button manually to answer a call. (The green LED flashes when the call arrives; when the user presses the button, the red LED goes on.)
- System Access/
Intercom Buttons** **SA** (including **Shared SA**) or **ICOM** buttons can be programmed in an ALS sequence. Different button types (Personal Line, **Pool**, **ICOM**, **SA**, or **Shared SA** buttons) should not be interleaved in an ALS sequence.
- Transfer** ALS does not apply when the **Transfer** button is pressed.

Automatic Maintenance Busy

At a Glance

| | |
|--------------------|----------------------------|
| Users Affected | Telephone users, operators |
| Reports Affected | System Information |
| Mode | Hybrid/PBX |
| System Programming | System → MaintenBusy |

Description

When Automatic Maintenance Busy is enabled, a malfunctioning loop-start, ground-start, or tie trunk is automatically put in a maintenance-busy state, preventing outside calls from being made on that trunk. Incoming calls are never blocked.

In general, the two reasons for putting an outside trunk in a maintenance-busy state are as follows:

- Faulty or delayed signaling between the system and the central office. To avoid busying out trunks because of slow telephone company central office responses rather than faulty trunks, four consecutive occurrences of faulty or delayed signaling are required before the trunk is put in the maintenance-busy state.
- Central office failure to disconnect (make the trunk available for use) after the user has hung up. The trunk is put in the maintenance-busy state after two occurrences of a failure to disconnect.

When a trunk is put in the maintenance-busy state, an error is recorded on the internal error log. The log indicates which type of error occurred — faulty or delayed signaling, or central office failure to disconnect.

Once a trunk is in the maintenance-busy state, the three ways to clear the condition and put the trunk back into service are as follows:

- Periodic testing of the trunk by the system's internal maintenance software to verify proper functioning
- Manual clearing of the error from the error log
- Manual seizure of the trunk at the system operator console or via maintenance dial codes

Considerations and Constraints

Incoming calls are received and processed normally on trunks in a maintenance-busy state.

Any Direct Inward Dialing (DID) trunks in the Hybrid/PBX mode are not affected by Automatic Maintenance Busy because these trunks can only receive calls and are not pooled.

100D (DS1) modules configured as ground-start, loop-start, or tie trunks are monitored and maintained by Automatic Maintenance Busy.

No more than 50% of the trunks in a trunk pool are allowed to be placed in the maintenance-busy state at one time *except* when the central office has failed to disconnect a trunk (preventing its use) or when an entire trunk module is manually taken out of service (a “user-imposed” maintenance-busy state). In the case of the 100D module, any failure in the DS1 link will cause the module to generate a loss-of-service alarm, and the entire module will be taken out of service.

Mode Differences

Hybrid/PBX Mode

To provide optimum performance, Automatic Maintenance Busy should be enabled when a Hybrid/PBX system includes trunk pools.

Key and Behind Switch Modes

To provide optimum performance, Automatic Maintenance Busy is not available in the Key and Behind Switch modes.

Feature Interactions

| | |
|----------------------------------|---|
| Alarm | The red LED next to the Alarm button on system operator consoles goes on and the designated Maintenance Alarm alert device sounds or flashes when more than 50% of the trunks in a trunk pool are in a maintenance-busy state. |
| Automatic Route Selection | When Automatic Route Selection (ARS) is used to make an outside call, the system does not select trunks that are in the maintenance-busy state. |

Automatic Route Selection

At a Glance

| | |
|--------------------|---|
| Users Affected | Telephone users, operators |
| Reports Affected | Automatic Route Selection Extension Directory Extension Information Remote Access (DISA) Information |
| Mode | Hybrid/PBX only |
| Telephones | All |
| System Programming | Specify the type of table (six-digit, area code, local exchange, or 1 + 7) and the area codes and/or exchanges to be included in the table: <ul style="list-style-type: none"> ● Tables → ARS → ARS Input Specify that 1 + 7 tables should be searched when a leading 1 is dialed: <ul style="list-style-type: none"> ● Tables → ARS → ARS 1+7Dial Specify time of day when calls are routed by using Subpattern A or B routing information: <ul style="list-style-type: none"> ● Tables → ARS → Sub B Start/Stop Identify the trunk pools (up to six) on which calls are to be routed: <ul style="list-style-type: none"> ● Tables → ARS → Sub A Pools/Sub B Pool Assign or remove the FRL associated with each route: <ul style="list-style-type: none"> ● Tables → ARS → Sub A FRL/Sub B FRL Specify the number of digits that need to be absorbed by the system when it routes calls on an identified route: <ul style="list-style-type: none"> ● Tables → ARS → Sub A Absorb/Sub B Absorb Specify the digits or special characters that must be added by the system to the number dialed by the user when calls are routed on an identified route: <ul style="list-style-type: none"> ● Tables → ARS → Sub A Digit/Sub B Digit |

Continued on next page

At a Glance *(continued)*

| | |
|---------------------------------|--|
| System Programming continued | <p>Specify the FRL and/or digits that must be added when people dial emergency numbers in the Special Numbers (N11) table:</p> <ul style="list-style-type: none"> ● Tables → ARS → More → SpecialNumber → ARS FRL/ARS Digit <p>Specify the pool routing, FRL, and digits or special characters that must be added by the system to the number dialed by the user when calls are routed on the Dial 0 table:</p> <ul style="list-style-type: none"> ● Tables → ARS → More → Dial 0 → ARS Pool/ARS FRL/ARS Digits <p>Specify whether a route is to be used for voice, data, or both on a PRI call:</p> <ul style="list-style-type: none"> ● Tables → More → Sub A Data/Sub B Data <p>Allow or restrict Remote Access users (without barrier codes) from using selected trunks:</p> <ul style="list-style-type: none"> ● Lines Trunks → RemoteAccss → Non-TIE/TIE Lines → ARS Restrct <p>Allow or restrict Remote Access users (with barrier codes) from using selected trunks:</p> <ul style="list-style-type: none"> ● Lines Trunks → RemoteAccss → BarrierCode → ARS Restrct <p>Assign or restrict extensions from using selected trunks:</p> <ul style="list-style-type: none"> ● Extensions → ARS Restrct |
| Maximums | |
| Programmable Routing Tables | 16 (1-16) |
| Entries per table | 100 |
| Factory-set tables | 4 — Dial 0 (table 19), Special Numbers (N11, table 20), Default Toll (table 17), Default Local (table 18) |
| Subpatterns | 2 per programmable table |
| Routes | 6 (1-6) per subpattern |
| Absorbed digits | 11 (0-11) per route |
| Pre-pended (added) characters | 20 (0-9, *, and Pause) per route |

Continued on next page

At a Glance *(continued)*

| | |
|----------------------------|--|
| Factory Settings | |
| ARS dial-out code | 9 |
| FRL (routes) | 3 (0-6; 0 least restrictive, 6 most restrictive) |
| FRL (telephones) | 3 (0-6; 0 most restrictive, 6 least restrictive) |
| FRL (Remote Access) | 0 (0-6; 0 most restrictive, 6 least restrictive) |
| Barrier Codes and trunks) | |
| Time to Start | 00:00 (midnight, both Subpattern A and B) |
| Added characters | None |
| Absorbed digits | 0 |
| 1 + 7 Dialing Requirements | Not within Area Code |
| Data | Voice Only |

Description

Automatic Route Selection (ARS) is available only in Hybrid/PBX mode. ARS allows outgoing calls to be dynamically routed over selected trunk facilities. ARS allows the system to be programmed to select the least expensive route for each call.

Programmable lists, called *tables*, indicate the desired routes for specified area codes and/or exchanges. A table contains some or all of the following types of information:

- **Table Type:** An indicator of how the information in the table is to be interpreted. Table types are Area Code, Local Exchange, 6-Digit, 1 +7, Dial 0, Special Numbers (N11), Default Toll, and Default Local. Details for each table type are discussed later in this section.
- **Digit Strings:** An array of 3-digit entries in the table. These are typically Area Codes or Exchanges. Dialed digits are compared to the stored digits. A match should occur in only one table, and therefore cause selection of the routes specified in that table.
- **Subpattern:** An array of up to six routes. There are 2 subpatterns for all tables except the Special Numbers (N11) and Dial 0 tables. The subpattern selected depends on the time of day that the call is made, and the start time associated with each subpattern. (The start time for Subpattern A is specified as the stop time for Subpattern B.)

The Special Numbers (N11) Table always uses the main pool and thus has neither subpatterns or routes. The Dial 0 Table has no subpatterns and only one route.

- **Routes:** A structure that defines possible trunks to be used in a preferred order, usually based on lowest cost and the telephone user's privilege level or Facility Restriction Level (FRL). Routes cannot be programmed for the Special Numbers (N11) Table. A Route contains the following types of information.
 - **Pool:** A group of trunks that are to be used for this route. A pool must be programmed before any other route information.
 - **Facility Restriction Level:** A value from 0 to 6 associated with the route. (0 is the least restrictive and 6 is the most restrictive.) A caller (telephone or Remote Access Barrier Code/Trunk) must have a level that is equal to or greater than that of the route in order to use the route.
 - **Absorbed Digits:** The number (0 to 11) of user-dialed digits that ARS will absorb (*not* dial out) on this route. Digits are absorbed starting with the first user-dialed digit.
 - **Prepended Digits:** A string of up to 20 digits (0-9, *, and pause) that ARS will dial out on this route *before* dialing any remaining user-dialed digits.

ARS allows up to 16 programmable tables, each of which may contain one of the following types of information:

- **Area Code Tables:** These tables are lists of 3-digit area codes. Area code tables are useful if just one type of trunk (for example, a regional WATS trunk) is used for all calls to each area code on the list.
- **Local Exchange Tables:** These tables list 3-digit exchanges within the local area code. They can be used to route calls over in-state WATS lines.
- **6-Digit Tables:** If the cost of calls to another area code varies according to the exchange, this table can be used to route calls on different trunk pools, depending on both the area code and the exchange.

In the 6-digit tables, an area code is the first entry and the remaining 99 entries are exchanges within the area code. The system scans the first 6 digits of the user-dialed number (area code and exchange) to route the call.
- **1+7 Tables:** In some areas, callers must dial a 1 and a 7-digit number to call certain exchanges even though the call is within the local area code. A 1 + 7 table contains a list of exchanges within the local area code that require dialing a 1 but not an area code before the 7 digits.

In addition to the fully programmable tables, ARS has 4 factory-set tables:

- **Dial 0 Table:** This factory-set table routes calls to numbers that start with 0. (The international dialing code, 011, is treated as a special case and can be put into a programmable table. If 011 is not specified in a programmable table, international calls are routed through the Dial 0 Table. Programming of this table is limited to a single pool, its FRL, and pre-pended digits.
- **Special Number (N11) Table** This factory-set table routes calls to the special numbers 411, 611, 811, and 911. The main pool is always used. This table is not programmable.
- **Default Toll Table** This factory-set table routes toll calls to numbers that do not match entries in any of the area code or 6-digit tables. This table has two subpatterns of up to six routes each, but neither digit absorption nor pre-pending is provided.
- **Default Local Table** This factory-set table routes local calls to numbers that do not match entries in the local exchange or 1 + 7 digit tables. This table has two subpatterns of up to six routes each, but neither digit absorption nor pre-pending is provided.

The system can have up to 20 tables, 16 of which are fully programmable. The Dial 0, Special Number (N11), Default Toll, and Default Local tables are factory-set and have limited programming.

Each table (where appropriate) can have two subpatterns (A and B) with an associated start time. (The start time for Subpattern A is specified as the stop time for Subpattern B.) One or the other subpattern is selected based on the time of day and the subpattern start time. (If both subpatterns have 00:00 start time, subpattern A is selected.) Each subpattern can contain up to six routes, listed in order of preference or cost-effectiveness.

In addition, each route has a Facility Restriction Level (FRL) associated with it. The FRL is used to refine the route selection process still further. Each telephone is assigned an FRL from 0 through 6 (0 is the most restrictive). Each route is also assigned an FRL from 0 through 6, but for routes, 6 is the most restrictive and 0 is the least restrictive. A telephone can use a route only if the telephone's FRL is greater than or equal to the route's FRL.

Other digits or special characters may be required so the system can route a call on a particular trunk pool. For example, some companies use an alternate toll call carrier that requires dialing the telephone number with pauses and access codes. Each ARS route may have up to 20 characters automatically pre-pended, when the user dials a number. The allowed characters are the digits 0 through 9, *, , and Pause.

ARS also provides an absorb (delete) digit capability for each route. For example, if the central office does not require 1 before an area code, the system can be programmed to absorb that first digit. Up to 11 characters can be automatically be absorbed when the user dials a number.

How ARS Works

1. A caller with internal dial tone on an **SA** button dials the ARS Access Code (usually 9) and is connected to ARS.
2. The user dials a call.

NOTE:

For 10-digit toll calls, the prefix "1" *must* be dialed to indicate to ARS that a toll call is about to be dialed. If the Central Office does not require the prefix 1 to be dialed for toll calls, the ARS digit absorption feature may be used to eliminate the prefix as the destination is dialed.

3. ARS selects the table and route to use for the call as follows:
 - If the telephone is restricted or toll restricted, and the dialed number is not on an allowed list, or the dialed number is on the disallowed list, the user receives a system error tone.

NOTE:

Emergency numbers must be on an allowed list to be called from a call restricted telephone.

- Initially, all 20 tables are in the list of available tables associated with the call.
- If the dialed number is 411, 611, 811, 911, or 10xxx (equal access code), the call is routed over the main pool. otherwise, the Special Numbers (N11) Table is eliminated from the list of available tables.
- If the first digit is not a 1, the Default Toll Table, all Area Code Tables, all 1 + 7 Tables, and all 6-Digit Tables are eliminated from the list of available tables.

If the first digit is a 1, the Default Local Table and all Local Exchange Tables are eliminated from the list of available tables.

- If the first digit is not a 1, the first three digits are compared against all entries in each Local Exchange table:
 - If a single match is found, that Local Exchange Table is selected
 - If more than one match is found, the lowest numbered Local Exchange Table containing a match is selected
 - If no match is found and the first digit is not 0, the Default Local Call table is selected
 - If no match is found and the first digit is 0, the Dial 0 Table is selected

- If the first digit is a 1 and only 7 digits have been dialed, all Area Code Tables and all 6-Digit Tables are eliminated from the list of available tables. Then, the next three digits are compared against all entries in each 1 + 7 table. Any of these tables that do not have a match are eliminated from the list of available tables.
 - If there are no 1 + 7 Tables containing a match, the Default Toll Table is selected.
 - If there is exactly one 1 + 7 Table that matches, it is selected.
 - If more than one 1 + 7 Table matches, the lowest numbered 1+7 Table is selected.

- If the first digit is a 1 and *more* than 7 digits have been dialed, all 1 + 7 Tables are eliminated from the list of available tables. Then, the next three digits are compared against all entries in each Area Code Table and against the first entry (area code) in each 6-Digit Table. Any of these tables that do not have a match are eliminated from the list of available tables.

If there are any 6-Digit Tables containing a match on the first entry, the next three digits are compared against the remaining entries (2-99) in those 6-Digit Tables.

 - If there is exactly one 6-Digit Table that matches, it is selected.
 - If more than one 6-Digit Table matches, the lowest numbered 6-Digit Table is selected.
 - If there are no 6-Digit Tables that match, and no Area Code Tables that match, the Default Toll Table is selected.
 - If there are no 6-Digit Tables that match and one Area Code Table matches, the matching Area Code Table is selected.

— If there are no 6-Digit Tables that match and there are more than one Area Code Tables that match, the lowest numbered Area Code Table is selected.

- If appropriate for the selected table, the time of day is compared to the Subpattern A and B start times. (The start time for Subpattern A is specified as the stop time for Subpattern B.) If the time of day is between Subpattern B start time and Subpattern A start time (Subpattern B stop time), Subpattern B is selected, otherwise, Subpattern A is selected. If both Subpatterns have 00:00 start times, Subpattern A is selected.
- If the telephone's FRL is equal to or greater than the FRL of any of the routes in the selected subpattern, those routes are eligible for selection.

For a PRI call, any route that does not match the call type (voice or data) is eliminated from eligibility. Each route may be specified as voice, data, or both.

Any remaining eligible routes are scanned from the beginning of the list. The first eligible route that is not busy is selected. If all eligible routes are busy, the user will hear fast busy and can use Callback to queue the call *for the first route only*.

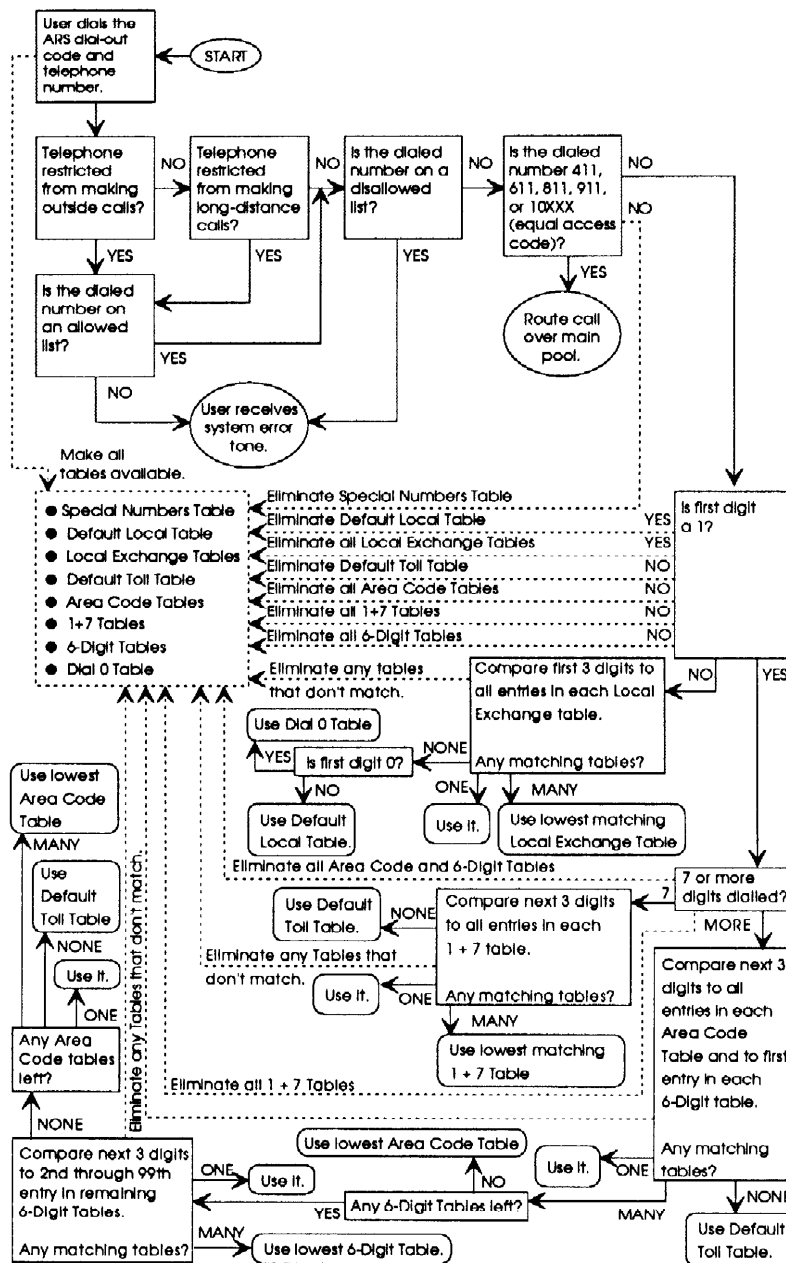


Figure 1. ARS Table Selection

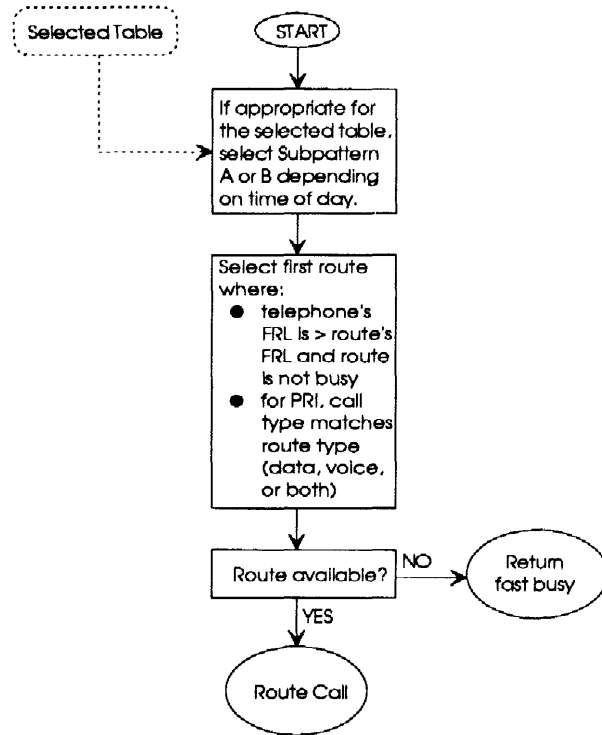


Figure 2. ARS Route Selection within a Table

Considerations and Constraints

Even if the local telephone company does not require it, users must dial 1 before any 10-digit telephone number.

ARS restrictions (FRLs) operate independently of dial access to pool restrictions, providing greater flexibility in assigning the type of usage a telephone is allowed.

The FRL assigned to telephones or Remote Access users is the opposite from the FRL assigned to ARS routes. For ARS routes a value of 0 is the least restrictive and a value of 6 is the most restrictive. For telephones and for Remote Access barrier codes/trunks, a value of 0 is most restrictive and a value of 6 is least restrictive.

The international dialing code, 011, can be included in any fully administrable table. If this is done, calls beginning with 011 are routed according to the table on which 011 is entered, and not according to the Dial 0 table.

The wildcard character (Pause) cannot be used in system programming to enter area codes and/or exchanges in ARS tables.

Calls made to the equal access code (10xxx) are always routed immediately over the main pool, regardless of whether or not they appear in other ARS tables.

Users who are restricted from using a particular ARS route will hear a high-low error tone indicating the call cannot be completed.

To allow determination of whether a call is toll or local, users must dial 1 before 10-digit calls. If the 1 is not required by the local Central Office, the digit absorption feature may be used to remove it.

Some Central Offices still require the prefix 1 for dialing certain exchanges. If 1 + 7-Digit Dialing Requirements is programmed as **within Area Code**, the system will expect either dial timeout or a # (end of dialing) to indicate whether a 1 + 7-digit or a 1 + 10-digit number has been dialed. (This may result in delays while the user waits for timeout.) To avoid timeout delays, 1 + 7-Digit Dialing Requirements can be administered as **Not within Area Code**, but all exchanges requiring a pre-pended 1 must be listed in a Local Exchange Table and the 1 must be specified as a character to be pre-pended. In this case, users must *not* dial the 1 before dialing those exchanges.

Area Codes 800 and 900 are treated as entries in programmable tables. They may be administered as either area codes or as exchanges.

Mode Differences

ARS is available only in PBX mode.

Feature Interactions

| | |
|--------------------------------------|--|
| Account Code Entry | When ARS is used on the system, an account code can be entered before or after dialing the telephone number. |
| Allowed Lists | ARS prevents users with restricted telephones from dialing numbers that are not included on an Allowed List. Emergency numbers must be included on an Allowed List if they are to be called from restricted telephones. |
| Auto Dial | The ARS code can be programmed before a telephone number on an Auto Dial button. |
| Automatic Maintenance Busy | When ARS is used to make an outside call, the system selects another trunk in the pool when the first trunk is in the maintenance-busy state. |
| Callback | When a call is made via ARS and all possible trunk routes are busy, the call can be queued for the <i>first</i> route in the pattern only. However, if the FRL for the telephone does not allow the call to be made over the route, the call is not queued. |
| Calling Restrictions | The use of ARS does not allow users to avoid calling restrictions. The system checks for outward or toll restrictions assigned to the telephone before it selects the best route for making the call. If the ARS FRL assigned to the telephone restricts use of all routes, the user hears an error tone and the call does not go through. Since FRL assignment determines pools selected in each route, a user may be allowed to select a pool via ARS even if the telephone is restricted from the pool dial-out code. |
| Direct Station Selector (DSS) | The LED next to a DSS button for the ARS code is always off. |
| Directories | System Directory and Personal Directory (MLX-20L telephones only) numbers can include the ARS dial-out code. |
| Disallowed Lists | The use of ARS does not allow the user to dial numbers on a Disallowed List assigned to the telephone. |
| Display | Only the ARS dial-out code and the number dialed are displayed. Digits added by ARS before the dialed number and digits absorbed by ARS are not displayed. The digit 9 is replaced with <code>OUTSIDE</code> when ARS selects a line. |
| Forced Account Code Entry | If Forced Account Code Entry is assigned to the telephone, the user must enter the code before dialing the ARS dial-out code. |

| | |
|---------------------------------------|---|
| Forward and Follow Me | ARS can be used to select the facility on which to forward calls to an outside telephone number. The user enters the ARS code before the telephone number. The FRL for the call is that of the telephone from which calls are being forwarded. |
| Night Service | When Night Service with Outward Restriction is programmed, the user must enter the password before dialing the ARS dial-out code unless the telephone is assigned to an Exclusion List or the number is on the Night Service Emergency Numbers List. |
| Recall | Before Release 2.0, Recall cannot be used to hold an outside line if ARS was used to make the call. For Release 2.0 and later, Recall can be used with calls made through ARS. |
| Remote Access | Remote Access users can make calls by using ARS. The user dials into the system, enters a barrier code if one is required, and dials the ARS code while listening to the system dial tone. FRLs can be assigned to restrict the routes that remote callers can use. When barrier codes are not used, FRLs are assigned to all remote access trunks. When barrier codes are used, FRLs are assigned to individual barrier codes. |
| Saved Number Dial | The ARS dial-out code is saved with the telephone number dialed. |
| Speed Dial | Personal Speed Dial and System Speed Dial numbers can include the ARS code. |
| SMDR | SMDR reports for systems with ARS show all the digits dialed by the user in the <code>Called Number</code> field, including any digits absorbed by digit absorption and the facility used to make the call. The reports do not include the ARS dial-out code or any digits added by ARS. |
| System Access/Intercom Buttons | The ARS FRL assigned to the telephone being used to make the call applies to calls made on both SA and Shared SA buttons. |
| System Numbering | The ARS access code can be renumbered (factory setting is 9). |
| Toll Type | In certain areas, the local telephone company requires dialing the prefix 1 for certain exchanges. In these cases, the exchanges can be assigned to a 1+7 Table and the 1+7 Dialing Requirements must be set to "Within Area Code" so that people calling numbers in other exchanges do not have to dial the 1 . |

Barge-In

At a Glance

| | |
|-----------------------|---|
| Users Affected | Telephone users, operators |
| Reports Affected Mode | Extension Information All |
| Telephones | All except Single-line telephones |
| Programming Code | *58 (centralized telephone programming only except for QCC) |
| QCC Display Label | Barge In |

Description

Barge-In allows a user to contact a co-worker in an emergency or if the user has been given special instructions to interrupt. If the extension is busy, Barge-In bridges the user onto the call. If Do Not Disturb is activated, Barge-In overrides the feature and makes the telephone ring.

On multiline telephones, except QCCs, the user bridges onto a call or overrides Do Not Disturb by calling the extension number and then pressing the programmed **Barge-In** button. On a QCC, the user presses the **Feature** button and selects *Barge In* from the display.

A tone, heard by the user and the people on the call, indicates that the user is bridged onto an in-progress conversation. If the user hears ringing, it indicates a Do Not Disturb override.

Considerations and Constraints

Barge-In does not override Privacy.

If Caller A is in the process of dialing and Caller B uses Barge-In to reach Caller A, the touch-tones generated by dialing cancel the Barge-In tone. As a result, Caller A may not be aware that someone else is joining the call.

If the user presses the **Barge-In** button while calling an MLX telephone, an extra ring occurs on the MLX telephone. A user cannot program a **Barge-In** button; the button can be programmed only via centralized telephone programming.

Telephone Differences

Direct-Line Consoles

If the DLC operator uses Barge-In for a user who is using Coverage or Forward (including Remote Call Forward), the call from the operator is not directed to the destination telephone.

Queued Call Consoles

A QCC operator can use Barge-In only by selecting the feature from the display. Barge-In can be used to join only an inside call to a QCC operator and only if the user dials the caller's extension instead of the QCC operator's extension number. A user can barge in on the call by dialing the other extension number, not that of the QCC operator. If a user tries to use Barge-In after dialing a QCC system operator's extension and waiting in the QCC queue, the feature has no effect and the user hears an error tone. If the error tone times out while the call is still in the QCC queue, the call is disconnected. However, if a QCC system operator becomes available before the error tone times out, the error tone is removed and the call is delivered to the system operator normally.

Single-Line Telephones

Single-line telephones cannot use Barge-In.

Feature Interactions

| | |
|-------------------|--|
| Callback | If Callback is used to request a busy extension or pool and the user is waiting on the line for the queued call, Barge-In cannot be used to interrupt. |
| Conference | Barge-In can be used to interrupt conference calls; all participants hear the Barge-In tone. Barge-In does not connect the user to a conference call if the conference already has the maximum number of participants. If Barge-In is used to connect to a conference call that involves an outside trunk and the person on the outside trunk hangs up, the person using Barge-In is also dropped. |
| Coverage | Barge-In can be used for Individual or Group Coverage calls answered at any receiver's telephone. If a system operator uses Barge-In to an extension with Coverage, the call from the system operator is not directed to the receiver's telephone. |
| Display | Barge-In appears on the display as a feature choice only on QCC operator consoles. On an MLX display telephone receiving a Barge-In call, the message <code>Barge In</code> and either the name or extension number of the person joining the call |

| | |
|------------------------------|--|
| | remains on the display until the receiving telephone user hangs up. If Barge-In is denied because Privacy has been activated, an error message is not displayed on the calling telephone to indicate that the attempt was not successful. |
| Do Not Disturb | If Do Not Disturb is activated, Barge-In overrides the feature and makes the telephone ring. |
| Forward and Follow Me | When a forwarded call is answered at the destination extension, Barge-In can be used to join the call only by dialing the extension number for the destination extension (not the extension for the originating extension). Barge-In cannot be used to join a call forwarded to an outside telephone number. If a system operator uses Barge-In to an extension with Call Forward or Remote Call Forward, the call from the system operator is not directed to the destination telephone. |
| Group Calling | Barge-In can be used for calling group members, but the member's extension must be used instead of the calling group extension. If a user tries to use Barge-In after dialing the calling group extension number and waiting in the queue, the feature has no effect. If a person uses Barge-In to reach another user who is waiting in a calling group queue, the call is removed from the queue and both people and the delay announcement, if programmed, are connected. If a person uses Barge-In for the delay announcement extension and the device is playing a message to a caller, the call is removed from the queue and both people and the delay announcement are connected. |
| Headset Options | If Barge-In is used to contact a user with Headset Auto Answer, the call is automatically answered. |
| Messaging | If Barge-In is used to contact a user with a posted message, the caller's telephone does not display the posted message. |
| Paging | Barge-In cannot be used to join speakerphone or loudspeaker paging calls. |
| Privacy | Barge-In does not override Privacy. The caller hears a busy signal. |

Call Waiting

At a Glance

| | |
|-------------------|--|
| Users Affected | Telephone users, DLC operators |
| Reports Affected | Extension Information |
| Mode | All |
| Telephones | All except QCC |
| Programming Code | |
| On | *11 |
| Off | **11 |
| Feature Code | 87 (for Call Waiting pickup) |
| MLX Display Label | CallWaiting,On [CWait,On] CallWaiting,Off [CWait,Off] |
| Factory Settings | Off |

Description

When a telephone is programmed with Call Waiting, a user whose telephone is busy hears a tone when another call is received. For an inside call, the user hears one beep; for an outside call, the user hears two beeps. MLX display telephone users also see `Call Waiting` on the display. The caller hears a special ringback to indicate that the telephone is busy and that the Call Waiting tone has been sent.

A multiline telephone is considered busy when no **SA** or **ICOM** button is available for incoming calls and, if Coverage is programmed, all Coverage points are busy.

A single-line telephone is considered busy when a call is ringing on the telephone or the user has lifted the handset and, if Coverage is programmed, all Coverage points are busy.

Each telephone can be programmed with Call Waiting on or off. The default is Call Waiting off.

The user hears a Call Waiting tone for the following types of calls that ring on an **SA** or **ICOM** button:

- an inside call
- a call received on a Direct Inward Dial (DID) trunk
- a call from a Remote Access user
- a call received on an automatic dial-in tie trunk

The user does not hear a Call Waiting tone for calls received on a Personal Line unless the business subscribes to the Call Waiting service from the local telephone company.

The user receiving the Call Waiting tone has these options:

- Ignore the new call and continue with the current call. The caller continues to hear the special ringback.
- Complete the current call, hang up, and answer the waiting call when it rings. The caller hears normal ringback.
- Put the current call on hold and answer the new call using an **ICOM Originate Only** or **SA Originate Only** button, if one is available.

Considerations and Constraints

A user can have more than one call waiting.

Call Waiting is not activated if a line button of the appropriate type (such as **ICOM** or **SA**) is available to receive a call.

An extension programmed as a fax port can activate Call Waiting so callers can wait until a fax machine is available. To prevent disruption of an in-progress fax message, a Call Waiting tone is not sent to an extension programmed as a fax port.

If a user is in the process of dialing and Call Waiting is being used to reach the user, the touch-tones generated while dialing cancel the Call Waiting tone. As a result, the user may not be aware that a call is waiting.

Calls answered by using Call Waiting Pickup cannot be transferred.

Telephone Differences

Direct-Line Consoles

When the Direct-Line Console (DLC) system operator uses Camp-On to transfer a call to a busy extension, the call is placed in the Call Waiting queue and the caller hears the Call Waiting tone whether or not the extension has the Call Waiting feature activated.

If the system is programmed for One-Touch Transfer with automatic completion, the system operator uses Camp-On by pressing the **Transfer** button, dialing the extension manually, activating Camp-On, hanging up, and pressing another line button or the **Transfer** button again. If the system operator presses an **Auto Dial** or **DSS** button, the transfer is automatically completed and Camp-On cannot be used.

Queued Call Consoles

Call Waiting cannot be used on Queued Call Consoles. (The calls are already queued.)

A QCC system operator can release a call to a busy extension by selecting **Camp-On** from the display or by pressing the **Release** button. If Camp-On is used, the call does not return to the QCC queue until the Camp-On return interval expires. If the system operator presses the **Release** button, the extension being called receives the Call Waiting tone (not Camp-On) and the call returns to the QCC queue when the Transfer Return Interval expires.

If the system is programmed for Automatic Extended Call Completion, to use Camp-On, the system operator must press the **Start** button, dial the extension manually, activate Camp-On, and press **Release**. If the system operator presses a **DSS** button, the transfer is automatically completed and Camp-On cannot be used.

Other Multiline Telephones

If a multiline telephone does not have a **SA Originate Only** or **ICOM Originate Only** button assigned or available, the user cannot pick up the waiting call. To pick up the call, the user presses an available **SA Originate Only** or **ICOM Originate Only** button and picks up the call by pressing the **Feature** button and dialing 87.

Single-Line Telephones

If the single-line telephone user presses and releases the **Retail** or **Flash** button or the switchhook after picking up a waiting call, the call that was picked up is disconnected and the user is reconnected to the original call. If the user hangs up after picking up a waiting call, the picked-up call is disconnected and Transfer is initiated for the first call. (The original call goes on hold and Transfer Return applies.)

Feature Interactions

| | |
|------------------------------|--|
| Callback | When Automatic Callback is used to queue a call at an extension that has Call Waiting, Callback overrides Call Waiting. The user with Call Waiting does not hear the Call Waiting tone, and the call is queued until the extension becomes available. |
| Camp-On | A user with no available buttons to receive a transferred call hears the Call Waiting tone when a co-worker uses Camp-On to transfer a call, even if Call Waiting is not activated. |
| Conference | A Call Waiting tone is only heard by the person receiving the call and not by other conference participants. If the conference originator reaches a busy extension, hears the Call Waiting special ringback, and tries to add the call to the conference, the system returns a busy tone. The user must press the Drop button and then press the line button used to call the busy extension to drop the busy tone from the conference. |
| Coverage | <p>A call to a sender with Call Waiting activated goes to Individual and/or Group Coverage first. If all Coverage points are busy, the sender receives the Call Waiting tone.</p> <p>Changing the status of Coverage On/Off to On after hearing the Call Waiting tone will not force the waiting call to Coverage receivers, but it can be used to send subsequent calls to Coverage.</p> |
| Display | When a user has a call waiting, <code>Call Waiting</code> is shown on the display. |
| Forward and Follow Me | Call Waiting does not apply to forwarded calls because the system tries the destination telephone instead of the forwarding telephone. However, if the call is not forwarded for any reason (the trunk selected is an unreliable loop-start trunk), Call Waiting functions normally. |
| Group Calling | Calls made to a calling group are not eligible for Call Waiting because the call rings into the calling group's queue. However, Call Waiting can be used for calls to individual members of the calling group. |
| Hold | A person with all calls on hold cannot hear the Call Waiting tone. |
| Paging | Call Waiting cannot be used for Group Paging calls to busy extensions. |
| Personal Lines | A user does not hear a Call Waiting tone for calls received on a Personal Line unless the business subscribes to the Call Waiting service from the local telephone company. |
| Pickup | Pickup features cannot be used to answer a waiting call at another telephone. |

| | |
|--|---|
| Reminder Service | Reminder Service calls are not eligible for Call Waiting. |
| SMDR | SMDR does not begin measuring the duration of Call Waiting calls until the call is answered. |
| System Access/ Intercom Buttons | A telephone is considered busy when all SA or ICOM buttons (excluding SA Originate Only or ICOM Originate Only) are in use. The user can dial the Call Waiting feature code to pick up a waiting call only when an SA Originate Only , Shared SA , or ICOM button is available. |
| Transfer | <p>If Call Waiting is on, and a transfer is completed to a busy destination telephone, the user at the destination telephone hears the Call Waiting tone, and the caller hears ringback. If Call Waiting is off at the destination telephone, the call waits in queue until the Transfer Return Interval expires.</p> <p>Calls answered by using Call Waiting Pickup cannot be transferred.</p> |

Callback

At a Glance

| | |
|-------------------------------|---|
| Users Affected | Telephone users, DLC operators |
| Reports Affected | Extension Information Remote Access (DISA) Information System Information |
| Mode | All |
| Telephones | All except QCC |
| Programming Code | |
| Auto on | *12 |
| Auto off | **12 |
| Selective | *55 |
| Feature Code | |
| Selective | 55 |
| Cancel request | #*55 (single-line telephones) |
| MLX Display Label | Cback Auto,On [CbckA,On] Cback Auto,Off [CbckA,Off] Cback Sel [CbckS] |
| System Programming | Specify the number of rings to the Callback originator before the system cancels a Callback request: ● Options → Callback Enable or disable the use of Callback for busy trunk pools for Remote Access users: ● Lines Trunks → RemoteAccss → AutoQueuing |
| Maximums | |
| Dialed digits per queued call | 40 |
| Queued calls in the system | 64 |
| Factory Settings | |
| Callback rings | 3 before system cancels Callback request (range 1-6) |
| Automatic Callback | Off |

Description

Callback provides users with an easy way to complete calls to busy extensions and, in the Hybrid/PBX mode, to outside numbers when all trunks are busy in the pool through which calls are made. (See Line Request for information about busy lines in Key and Behind Switch modes.)

Two types of Callback can be programmed for a telephone:

- **Automatic:** Callback is activated automatically whenever the user reaches a busy extension or when all trunks in a pool are busy. This is a status feature that is set to On or Off for each telephone.
- **Selective:** Callback is activated only when a user chooses—by dialing a feature code or, on multiline telephones, by pressing a programmed Selective Callback button. On MLX display telephones, a user can also select the feature from the display.

With Automatic Callback, when a user reaches a busy extension or trunk pool, he or she hears the queuing tone (five short beeps) instead of the busy tone. This indicates that the system is putting the call into the Callback queue.

With Selective Callback, when the user reaches a busy extension, he or she must activate Callback while listening to the busy signal. If the user tries to make a call by using a pool in which all trunks are busy, the user hears a fast busy signal immediately after dialing the pool dial-out code. After activating Callback, the user receives dial tone; after all digits are dialed, the user receives the queuing tone and the call is added to the Callback queue.

With both types of Callback, a user can either stay on the line until the call is completed or hang up.

- If the user stays on the line, the red and green LEDs are on next to the line button used to make the call. When the busy extension or pool is available, the user hears the dequeuing tone (three short beeps) and the call is completed automatically.
- If the user hangs up, the green LED flashes next to the line button, indicating that the button is being held for the queued call. When the busy extension or pool is available, the user hears a priority ring (four bursts of ring on an MLX telephone and three bursts of ring on an analog multiline telephone or single-line telephone). If the user does not answer the Callback call within the number of rings programmed for the system (1-6), the Callback request is canceled.

For an outside call, the system makes the call when a trunk is available, and the user hears ringback. If the person being called picks up before the user answers the ringback, the person being called is automatically put on hold and hears Music-on-Hold.

For an inside call, the user hears ringback when the extension is available, but the system does not make the call until the user picks up.

Considerations and Constraints

Callback cannot be used for Personal Lines assigned to buttons on a telephone (DFTs). See Line Request for additional information. If more than one call is waiting for the same extension or trunk pool, the call that has been in queue the longest is connected first.

When a call is waiting in queue for an extension, no new calls are sent to the extension until after the queued call is completed.

When the queue contains 64 calls (system limit), additional calls sent to the queue result in a busy signal.

No more than 40 dialed digits can be included in a queued call.

Mode Differences

Hybrid/PBX Mode

Callback can be used for busy extensions and for outside calls on pools where all trunks are busy.

Key and Behind Switch Modes

Callback can be used only for busy extensions. Line Request is used for busy outside lines that are assigned to line buttons.

Telephone Differences

Queued Call Consoles

A QCC operator cannot use Callback.

Other Multiline Telephones

On all other multiline telephones, Selective Callback is activated by pressing a programmed **Callback** button or by pressing the **Feature** button and dialing 55. On MLX display telephones, Selective Callback is also activated by pressing the **Feature** button and selecting the feature from the display. If the user is on another call when the system tries to call back, the user hears an abbreviated ring.

A multiline telephone user can queue more than one call to the same extension.

A multiline telephone user can cancel a Callback request by pressing the **SA/ICOM** button used to make the call, lifting the handset, pressing the **Drop** button, and pressing the **SA/ICOM** button again. The red and green LEDs next to the button go off, and the request is canceled.

Single-Line Telephones

The user can make and receive other calls while waiting for the call to be completed. The request remains in the queue until the user who initiated the request is available. Queued calls ring at a single-line telephone in the order in which they were queued.

A single-line telephone can queue only one call at a time. If a single-line telephone user who has already queued one call then tries to transfer a second call to a busy pool, the transferred caller hears a fast busy tone. The system considers the transfer complete, and the call is not returned to the single-line telephone user who transferred the call.

A single-line telephone user can cancel a Callback request by lifting the handset and dialing ****55** while listening to internal dial tone. The system sends a confirmation tone to indicate that the request is canceled.

A single-line telephone user cannot use Callback if another call is on hold.

A waiting incoming outside call rings at a single-line telephone before any calls queued for that telephone.

Feature Interactions

| | |
|----------------------------------|--|
| Account Code Entry | An account code must be entered before the user activates Callback. If not, the user must wait until after the call is connected before entering the account code. Account codes cannot be entered while the call is queued. |
| Automatic Route Selection | When a call is made via Automatic Route Selection (ARS) and all possible trunk routes are busy, the call can be queued for the first route in the pattern. However, if the Facility Restriction Level (FRL) for the telephone does not allow the call to be made over the route, the call is not queued. |
| Barge-In | If Callback is used to request a busy extension or pool and the user is waiting on the line for the queued call, Barge-In cannot be used. |
| Calling Restrictions | In the Hybrid/PBX mode, a user with a restricted telephone can use Callback for a busy pool because restrictions are based on the specific trunk being used to make the call. When a trunk in the busy pool is available, the system checks for restrictions assigned to the telephone. If the telephone is restricted, the user hears a fast busy signal to indicate that the call is not dialed. |
| Call Waiting | When Automatic Callback is used to queue a call at an extension that has Call Waiting, Callback overrides Call Waiting—the user with Call Waiting does not hear the Call Waiting tone, and the call is queued until the extension becomes available. |

| | |
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| Conference | With Automatic Callback, the call is automatically queued; however, if the user tries to add the queued call to the conference, the system returns a busy tone. With Selective Callback, the system also returns a busy tone. The user must press the Drop button and the line button used for the call to drop the busy tone from the conference. |
| Coverage | The sender and all Coverage receivers must be busy before a call to a sender can be queued. The call is sent to Coverage before it is put in the Callback queue. Once a call is in the Callback queue, it is not sent to Coverage again. The Callback call indicating that a busy extension or pool is available is not eligible for Individual or Group Coverage. |
| Display | When a call is queued by Automatic Callback on multiline telephones or by Selective Callback on analog multiline telephones, the display shows a feedback message. When an MLX telephone user activates Selective Callback, the display prompts the user to enter the telephone number. When the queued call rings the user's telephone, the display indicates that it is a returning Callback call. |
| Do Not Disturb | Calls to extensions that are using Do Not Disturb are not eligible for Callback queuing. If the Callback originator is using Do Not Disturb, the system overrides the feature and the telephone rings when the busy extension or trunk is available. |
| Extension Status | In the Hotel mode, an extension in Extension Status 1 or 2 cannot use Callback to request busy pools. |
| Forced Account Code Entry | An account code must be entered before Callback is activated. If not, the user hears a busy tone. |
| Forward and Follow Me | <p>If a user queues a call and then uses Forward, Remote Call Forward, or Follow Me, the call does not ring back at the destination extension or telephone number; the Callback call returns only to the forwarding telephone.</p> <p>When a user with Automatic Callback activated selects a pool on which to forward calls to an outside number and all trunks in the pool are busy, the caller hears queuing tone when the call is queued for the busy pool. When the pool is available, the caller hears the dequeuing tone and the call is forwarded.</p> <p>When a user with Automatic Callback deactivated selects a pool on which to forward calls to an outside number and all trunks in the pool are busy, the caller hears a busy signal to indicate all trunks in the pool are busy. The user can activate Selective Callback and queue the call for the forwarding telephone and not the busy pool. Outside callers cannot use Callback when the forwarding telephone is busy.</p> |

| | |
|------------------------------|---|
| Group Calling | Calls made to a calling group are not eligible for Callback because the call rings into the calling group's queue. However, Callback can be used for calls to individual calling group member extensions or to the delay announcement device. Calling group calls are not sent to a group member when the member has used Callback for a busy extension or pool, or if another person used Callback to reach the member and the Callback call is ringing on the member's telephone. |
| Headset Options | Callback calls are answered automatically by using Headset Auto Answer, but the user hears the dequeuing tone instead of the zip tone. When both calling and receiving users have headsets with Headset Auto Answer activated (MLX telephones only), the person being called hears zip tone when the Callback call is completed; the Callback originator does not hear zip tone or dequeuing tone. |
| Hold | Pressing the Hold button while waiting for a queued call is the same as hanging up—the call is disconnected. If an operator presses another line button, an Auto Dial button, or a DSS button while waiting on the line for a queued call, the call is disconnected—Automatic Hold does not work. |
| Line Request | Returning Callback calls cancel Line Request. |
| Multi-Function Module | Both Automatic and Selective Callback can be used from an MFM; however, a Callback call cannot be manually canceled because the MFM does not recognize the switchhook flash produced by pressing the Drop button. |
| Music-on-Hold | An outside caller waiting in the Callback queue hears Music-on-Hold. |
| Paging | Callback cannot be used for calls to a Speakerphone Paging Group. A voice-announced inside call that is queued via Callback automatically becomes a ringing call. Systems with Loudspeaker Paging can be set up to allow calls to be queued for the Loudspeaker Paging system by placing the Loudspeaker Paging port in its own pool and having users access the paging system through the pool. When the pool is busy, the call can be queued. |
| Park | Calls waiting in a Callback queue cannot be parked. |
| Personal Lines | The Callback feature cannot be used to request a busy Personal Line. See Line Request. |
| Pickup | A Callback request cannot be picked up at another telephone. |
| Reminder Service | Reminder Service calls cannot be queued by using Callback. |

| | |
|--|---|
| Remote Access | If the system is programmed for Remote Access Callback (Autoqueuing), Remote Access users can use Callback. The user cannot hang up but must wait on the line until the extension or trunk pool is available. The user hears Music-on-Hold if it is programmed. |
| SMDR | SMDR begins measuring the duration of Callback calls when the call is completed. |
| System Access/ Intercom Buttons | Callback can be used on SA and ICOM buttons. When Callback is used on an SA button, the Callback from the system rings and the LED next to the button flashes only at the telephone that originated Callback. If a user other than the person originating the Callback selects an SA or ICOM button with a queued call and lifts the handset, the person hears the queuing tone and the green LED on the originator's telephone goes from flashing to steady. If the second person hangs up, the green LED on the originator's telephone goes back to flashing and the system directs the Callback call to the originator. If the second person does not hang up, the system directs the call to the second person and not to the Callback originator. |
| Transfer | A queued Callback call cannot be transferred, but calls transferred to busy extensions are eligible for Callback. When a user reaches a busy extension while transferring a call, Automatic Callback or Selective Callback can be used to queue the call before completing the transfer. The caller hears ringback or Music-on-Hold as with any transfer. When the extension is available, the call is transferred to the extension automatically. If the extension is not available before the Transfer Return Interval expires, the call is removed from the Callback queue and returned to the originator. |

Calling Restrictions

At a Glance

| | |
|--------------------|--|
| Users Affected | Telephone users, operators |
| Mode | All |
| Telephones | All |
| System Programming | <p>Assign or remove outward/toll restriction for individual telephones:</p> <ul style="list-style-type: none"> ● Extensions → Restriction <p>Assign or remove pool dial-out code restriction for individual telephones:</p> <ul style="list-style-type: none"> ● Extensions → Dial OutCd <p>Assign or remove outward/toll restriction from non-tie trunks used for Remote Access:</p> <ul style="list-style-type: none"> ● LinesTrunks → RemoteAccss → Non-TIE Lines → Restriction <p>Assign or remove outward/toll restriction from tie-trunks used for Remote Access:</p> <ul style="list-style-type: none"> ● LinesTrunks → RemoteAccss → TIE Lines → Restriction <p>Assign or remove outward/toll restriction for each Remote Access barrier code:</p> <ul style="list-style-type: none"> ● LinesTrunks → RemoteAccss → BarrierCode → Restriction <p>Assign or remove the ARS FRL for individual telephones:</p> <ul style="list-style-type: none"> ● Extensions → More → ARS Restrct <p>Assign or remove the ARS FRL associated with each route:</p> <ul style="list-style-type: none"> ● Tables → ARS → Sub A FRL or Sub B FRL <p>Assign or remove the ARS FRL associated with non-tie trunks used for Remote Access:</p> <ul style="list-style-type: none"> ● Lines Trunks → RemoteAccss → Non-TIE → ARS Restrct <p>Assign or remove the ARS FRL associated with tie trunks used for Remote Access:</p> <ul style="list-style-type: none"> ● Lines Trunks → RemoteAccss → TIE Lines → ARS Restrct <p>Assign or remove the ARS FRL for each Remote Access barrier code:</p> <ul style="list-style-type: none"> ● Lines Trunks → RemoteAccss → BarrierCode → Ars Restrct |

Continued on next page

At a Glance *(continued)*

| | |
|--|---|
| Factory Settings | |
| Phones | |
| Outward/Toll Restriction | Unrestricted |
| ARS FRL | 0 (range 0-6) |
| Pool Dial-Out Code | All telephones can dial any code |
| Remote Access Trunks/ Barrier Codes | |
| Outward/Toll Restriction | Unrestricted |
| ARS FRL | 3 (range 0-6) |
| | See Allowed/Disallowed Lists, Remote Access, and Night Service for additional calling restrictions. |

Description

Calling Restrictions is used to control outgoing calls from individual extensions, specific pools, types of trunks used for Remote Access, or specific trunks associated with individual barrier codes. When used in conjunction with Automatic Route Selection, it can be used to apply ARS Facility Restrictions on specific extensions, routes, types of trunks used for Remote Access, and specific trunks associated with individual barrier codes. (Incoming calls are never restricted.) Through Calling Restrictions, users at individual telephones can be restricted from making certain types of calls, as follows:

- **Outward Restriction:** The telephone cannot be used to make any outside calls.
- **Toll Restriction:** The telephone cannot be used to make toll calls.
- **Pool Dial-Out Code Restriction** (Hybrid/PBX only): The telephone cannot be used to dial specific pool dial-out codes. This restricts outgoing calls from specific pools and can be used to reserve pools for specific purposes—for example, for data communications only.
- **Facility Restriction Level** (Hybrid PBX only): The Automatic Route Selection (ARS) Facility Restriction Level (FRL) is used to restrict the telephone to certain routes. When Automatic Route Selection (ARS) is used, an FRL is assigned to control or restrict access to specific routes in an ARS table. There are seven FRLs assigned to routes, ranging from 0 to 6, where 0 is the least restricted and 6 is the most restricted.

FRLs from 0 to 6 are also assigned to telephones and are used to determine whether callers have permission to use the routes. However, the FRL assigned to a telephone is the opposite of an FRL assigned to a route. In other words, a telephone with an FRL of 0 has the fewest ARS privileges (that is levels 1 through 6 cannot be used), and a telephone

with an FRL of 6 has the most privileges. To use a route, the telephone must have an FRL equal to or greater than the route's FRL.

See Automatic Route Selection for additional ARS information.

Outward/toll and FRL calling restrictions can also be applied to Remote Access users. These calling restrictions can be applied to each individual barrier code (up to 16), or, if barrier codes are not used, to all remote access TIE/DID trunks and all remote access non-TIE, non-DID trunks. See Remote Access for additional information.

Other call restrictions can be applied when Night Service is activated. Night Service can be set up to require a password to be dialed before a non-emergency call can be placed. When the correct password is entered, the system then checks for calling restrictions assigned to each telephone before allowing calls to outside numbers.

A Night Service Exclusion List can be created to exempt specific telephones from the password requirement. However, normal calling restrictions (if any) assigned to the telephone are still in effect. A Night Service Emergency Allowed List can also be created, which can contain up to 10 numbers that can be dialed without entering the Night Service password. See Night Service for additional information.

If the restrictions are too limiting, an Allowed List can be used in conjunction with Calling Restrictions. An Allowed List is a list of telephone numbers (such as emergency numbers) that a user with an outward- or toll-restricted telephone can dial. If no calling restrictions are assigned to a telephone or to supplement Calling Restrictions, a Disallowed List can be used. A Disallowed List is a list of telephone numbers (for example, 900 numbers) that cannot be dialed from a telephone. See Allowed/Disallowed Lists for additional information.

Considerations and Constraints

In the Hybrid/PBX mode, an outward-restricted telephone cannot be used to make an ARS call except to emergency numbers. See Allowed List for additional information.

Only outgoing calls are affected; users can receive inside, local, and toll calls on restricted telephones and can join any type of call in progress.

When a user with an outward-restricted telephone presses the dialpad while on a call, the call is disconnected, the user hears a fast busy, and the trunk is released. The reason is that the system assumes that the user is trying to make an outside call, which is not allowed because of the outward restriction assigned to the telephone.

Users with **Pool** buttons on their telephones can use the pool even if the pool dial-out restriction is assigned to the telephone.

Since calling restrictions apply to telephones used to initiate a call transfer to an outside number, a user with a restricted telephone can circumvent restrictions by asking a system operator with an unrestricted console to connect an outside call.

When a marked System Speed Dial code is used to dial a number, the System Speed Dial number overrides calling restrictions (such as outward or toll restrictions).

Mode Differences

Hybrid/PBX Mode

In the Hybrid/PBX mode, all calling restrictions can be assigned.

Key and Behind Switch Modes

In the Key and Behind Switch modes, outward and toll restrictions can be assigned, while the pool dial-out code restrictions and ARS FRL cannot be assigned.

Feature Interactions

| | |
|----------------------------------|---|
| Allowed Lists | When used with Calling Restrictions, Allowed Lists can permit the dialing of specific numbers (such as emergency numbers) from an outward- or toll-restricted telephone. |
| Auto Dial | A user with a restricted telephone cannot dial a restricted number (outward or toll) by using an Auto Dial button unless the number is on the Allowed List for that telephone. |
| Automatic Route Selection | The use of ARS does not allow users to avoid calling restrictions. The system checks for outward or toll restrictions assigned to the telephone before it selects the best route for making the call. If the ARS FRL assigned to the telephone restricts use of the route, the user hears an error tone and the call does not go through. Since FRL assignment determines pools selected in each route, a user may be allowed to select a pool via ARS even if the telephone is restricted from the pool dial-out code. |
| Callback | In the Hybrid/PBX mode, a user with a restricted telephone can use Callback for a busy pool because restrictions are based on the specific trunk being used to make the call. When a trunk in the busy pool is available, the system checks for restrictions assigned to the telephone. If the telephone is restricted, the user hears a fast busy signal to indicate that the call is not allowed. |
| Conference | A user with an outward/toll-restricted telephone cannot add an outside/toll participant to a conference unless the participant's number is on an Allowed List for that telephone. |

| | |
|--|---|
| Disallowed Lists | <p>Disallowed Lists can prevent the dialing of specific numbers from an unrestricted or toll-restricted telephone.</p> <p>A Disallowed List takes precedence over an Allowed List.</p> |
| Display | <p>The <code>Call Denied</code> message is shown on an MLX display telephone when a call is denied because of calling restrictions. The message is not shown on an analog multiline display telephone.</p> |
| Extension Status | <p>To allow users in the Hotel configuration of Extension Status to dial emergency or other selected numbers when the telephone is in status 1 or 2, the telephone must be assigned to an Allowed List.</p> |
| Forward and Follow Me | <p>A user with an outward- or toll-restricted telephone cannot forward calls to a number (outward or toll) unless the number is on an Allowed List for that telephone. No error tone sounds when the user with a restricted telephone activates the Forward feature; however, when a call is received at the extension, the system checks restrictions and denies the forward if the number is not on the Allowed List.</p> |
| Night Service | <p>For Night Service with Outward restriction, a Night Service Emergency Allowed List must be created consisting of emergency numbers that can be dialed from any telephone without dialing the password (10 emergency numbers, 9 digits each). Any restrictions assigned to a telephone on the Night Service Exclusion List are in effect when Night Service is activated.</p> |
| Personal Lines | <p>A user with an outward-restricted telephone cannot dial a restricted number (outward or toll) on a Personal Line unless the number is on an Allowed List for that telephone.</p> |
| Pools | <p>Specific pools can be restricted from being used for outgoing calls by assigning a Pool Dial-Out Code Restriction to telephones.</p> |
| Speed Dial | <p>A user with an outward-or toll-restricted telephone cannot dial a restricted number (outward or toll) by using Personal Speed Dial or System Speed Dial (except for a marked System Speed dial code) unless the number is on an Allowed List for that telephone.</p> |
| System Access/ Intercom Buttons | <p>For Shared SA buttons, Calling Restrictions apply to the telephone with the Shared SA button, not to the principal user.</p> |

Camp-On

At a Glance

| | |
|--------------------|--|
| Users Affected | Telephone users, operators |
| Reports Affected | System Information |
| Mode | All |
| Telephones | All (except single-line telephones) |
| Programming Code | *57 |
| Feature Code | 57 87 (Call Waiting Pickup) |
| MLX Display Label | Camp On [Camp] → <i>caller's extension label</i> |
| System Programming | Change the amount of time before a camped-on call returns to originator: ● Options → CampOn |
| Factory Settings | |
| Return Interval | 90 sec (range 30-300, in increments of 10 sec) |

Description

Camp-On allows a user to complete a transfer to a busy telephone. The call is put on hold until the telephone can receive a call; then it rings automatically. While the call is on hold, the caller (inside or outside) hears special ringback. The person at the busy telephone hears a Call Waiting tone to indicate that a call is waiting. If the call is not answered within the programmed Camp-On Return Interval (30 to 300 seconds), the call returns to the originator. The originator hears a priority ring (one ring and two beeps) to indicate a returning Camp-On call.

Camp-On can also be used to complete a transfer to an extension that is not busy. This can increase the amount of time before the call returns to the originator because the return is timed according to the Camp-On Return Interval (30-300 seconds) instead of the Transfer Return Interval (1-9 rings), Camp-On can be activated by using either a programmed button or a feature code.

Considerations and Constraints

A Camp-on Return Interval of 30-300 seconds in increments of 10 seconds can be programmed. The factory setting is 90 seconds.

A user at a destination telephone hears a Call Waiting tone when a call is camped-on even if Call Waiting is not programmed on the destination telephone.

Multiple calls can be camped-on to individual telephones.

To use Camp-On, it must be activated while the user is listening to ringing, a busy tone, or Call Waiting ringback. Camp-On can not be activated at other times, and no error tone sounds when a user unsuccessfully tries to use Camp-On at an inappropriate time.

Telephone Differences

Direct-Line Consoles

When a Direct-Line Console (DLC) system operator uses Camp-On to transfer a call to a busy telephone, the call is placed in the Call Waiting queue and the caller hears the Call Waiting tone whether or not the user has the Call Waiting feature activated.

If the system is programmed for One-Touch Transfer with automatic completion, the system operator uses Camp-On by pressing the **Transfer** button, dialing the extension manually, and activating Camp-On.

If the system operator presses an **Auto Dial** or **DSS** button, the transfer is automatically completed and Camp-On cannot be used.

Queued Call Consoles

A **Camp-On** button cannot be programmed on a QCC. Instead, a QCC operator can release a call to a busy extension by selecting `Camp-On` from the display. The call does not return to the QCC queue until the Camp-On Return Interval expires. If the system operator presses the **Release** button, the extension being called receives the Call Waiting tone and the call returns to the QCC queue when the Transfer Return Interval expires.

To use Camp-On when the system is programmed for Automatic Extended Call Completion, the system operator must press the **Start** button, dial the extension manually, activate Camp-On, and press **Release** or hang up. If the system operator presses a **DSS** button, the transfer is automatically completed and Camp-On cannot be used.

Other Multiline Telephones

Camp-On can be used when a multiline telephone user hears ringing, a busy tone, or Call Waiting ringback while transferring a call. To use Camp-On to complete the transfer, the user presses a programmed **Camp-On** button, or presses the **Feature** button and dials **57**. On MLX display telephones, the user can also press the **Feature** button and select `Camp-on` from the display.

Single-Line Telephones

Calls can be camped-onto single-line telephones, but single-line telephone users cannot use Camp-On.

Feature Interactions

| | |
|--------------------------------|--|
| Call Waiting | A user with no available buttons to receive a transferred call hears the Call Waiting tone when a caller uses Camp-On to transfer a call, even if Call Waiting is not activated. |
| Coverage | All Individual and/or Group Coverage points must be busy before a call can be camped-on to a Coverage sender's telephone. Coverage calls answered by a receiver can be camped-on to another user. |
| Direct Station Selector | When Camp-On is used to complete a call transfer and the call returns, the DSS button for the extension where the call was transferred goes off and does not flash as it does for a Transfer return or Park return. |
| Display | After Camp-On is activated, the display on an MLX display telephone shows <code>Camp on:</code> and the caller's extension label. |
| Do Not Disturb | A Camp-On call does not ring when Do Not Disturb is activated. |
| Group Calling | Users can transfer calls to a calling group by using Camp-On, but the calls do not return to the originating telephone, even if it is not answered within the programmed Camp-On Return Interval. |
| Line Request | Returning Camp-On calls cancel Line Request. |
| Music-on-Hold | When Camp-On is used to complete a transfer of an outside call to an extension, whether it is busy or not, the caller hears ringback during the transfer even if Music-on-Hold is programmed as the transfer audible. |
| Paging | Camp-On cannot be used for calls to busy Speakerphone Paging Groups. |
| SMDR | If an incoming call is camped-on but is not picked up by the called extension, the extension of the user who activated Camp-On is shown in the <code>STN</code> (station extension) field of the SMDR report. If an incoming call is camped-on and picked up by the destination extension, the destination extension is shown in the <code>STN</code> field. |

Transfer

A transfer can be completed by using the Camp-On feature whether or not the destination extension is busy. When the feature is used, the Camp-On Return Interval is used instead of the Transfer Return Interval. If a user presses the **Camp-On** button or dials the Camp-On feature code while transferring a call to an outside number, the call to the outside number is disconnected. The original call remains on hold.

Centrex Operation

At a Glance

| | |
|--------------------|--|
| Users Affected | Telephone users, operators |
| Reports Affected | System Information |
| Mode | All |
| Telephones | All touch-tone telephones |
| System Programming | Specify mode of operation: ● Sys Program → System → Mode For additional programming requirements, see Recall/Timed Flash |

Description

Centrex is an optional telephone service that business customers can obtain from telephone companies. A Centrex line provides access to telephone features that formerly were available only from a PBX switch located on the customer's premises. Basic Centrex features often include the following:

- Transfer
- Three-Way Conference
- Drop
- Hold
- Recall
- Call Forwarding
- Call Waiting
- Call Pickup
- Group Pickup
- Automatic Callback

Additional features such as Speed Dialing and Night Service may also be available from some telephone companies. Centrex features other than those specifically discussed in this section are accessed by sending a switchhook flash and dialing the appropriate feature code. These codes are not intercepted or interpreted by the communications system.

To use the features available through Centrex, the user dials a Centrex feature code from a touch-tone telephone. Some features must be programmed especially for the customer by the telephone company at the central office (CO).

The system can be configured for either Full or Limited Centrex service.

Full Centrex

Full Centrex requires that each telephone have a direct Centrex line (*Prime Line*) to the CO. Full Centrex can also be used when only some telephones have Prime Lines, but the telephones without Prime Lines have limited ability to use Centrex features. Prime Lines can be shared between telephones.

The Prime Line allows users to dial outside numbers directly after dialing an access code (usually 9) . For this reason, any calling restrictions for the telephone must be administered by the telephone company at the CO.

The Prime Line is also used to call other four-digit Centrex extension numbers that may be located at different sites served by the same telephone company. The communications system's intercom lines are used to dial other telephones in the communications system,

With Full Centrex, users can send a switchhook flash via the **Recall** button. The fixed function buttons (**Hold**, **Drop**, and **Transfer**) control Centrex features rather than communication system features. (Additional buttons can be programmed for communications system use.) The communications system will not intercept or respond to recall or fixed function button signals. See Recall/Timed Flash for additional information.

For Full Centrex operation, the communications system must be programmed for Behind Switch mode. A Full Centrex configuration operates on three levels as shown in Figure 3. The telephone user must be aware of which level they are at when making a call or activating a telephone feature.

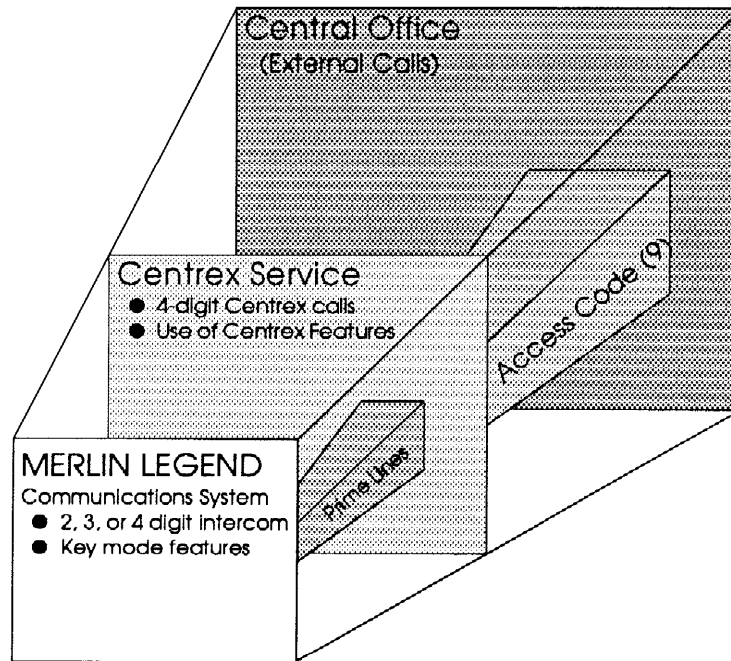


Figure 3. Full Centrex Service

Limited Centrex

With Limited Centrex service users depend principally on the communications system's features, but a limited number of Prime Lines can be used to access the CO Centrex. There are two cases that are particularly suitable for Limited Centrex:

- Centrex lines may be less expensive than other lines
- Different users may have different needs for telephone service, such that some users benefit more from Centrex while other users benefit more from direct use of the communications system

In the Limited Centrex configuration, some telephones may have Prime Lines, while other telephones access the Prime Lines through a pool. Telephones can also be assigned ground-start, TIE, or DID lines, which is not possible in Full Centrex. Telephones without Prime Lines can use a **Pool** button to access Centrex facilities, or may use an **SA** button to access pooled facilities by dialing an access code. Once connected to the pool, users may dial other Centrex extensions, or dial an access code for outside calls. Outside calls made by using an **SA** button to access a pool require two access codes for outside calls, one access code for the pool, and one for outside lines on the Centrex.

For Limited Centrex operation, the communications system must be programmed for Key or Hybrid/PBX mode. The total system operates on three levels as shown in Figure 4. The telephone user must be aware of which level they are at when making a call or activating a feature.

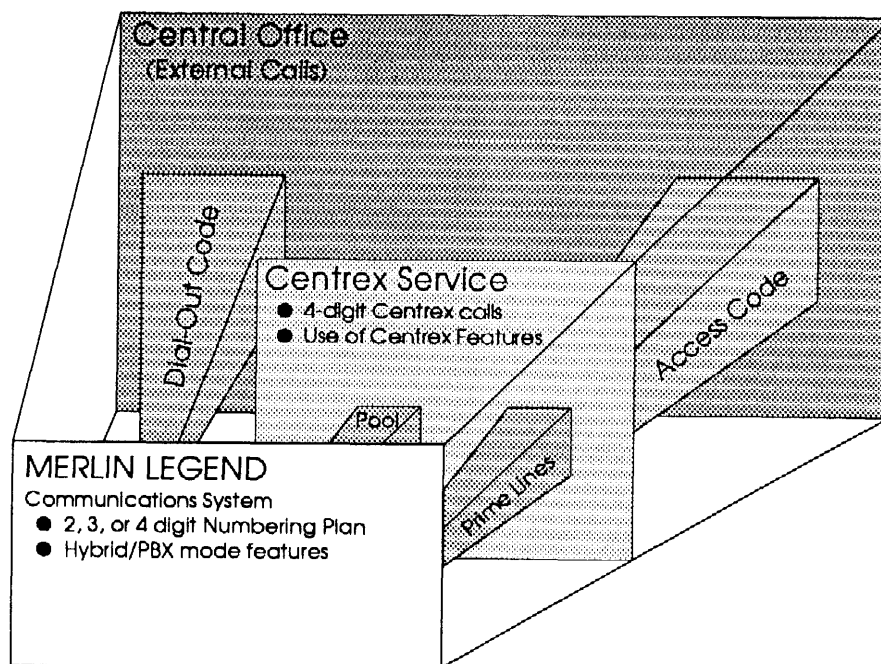


Figure 4. Limited Centrex Service

Differences Between Full Centrex and Limited Centrex

The major difference between Full Centrex and Limited Centrex is where and how PBX functions are provided:

- In Full Centrex, the Centrex Service provides PBX services to all telephones
- In Limited Centrex, the Centrex Service provides PBX services to telephones making calls at the Centrex level on Prime Lines, while other services are provided by the communications system acting as a switch for calls between extensions and calls that do not require Centrex features

In Full Centrex Service:

- The communications system operates in Behind Switch mode
- Calls can be made between Centrex extensions at separate sites served by the same Centrex
- Key mode features are provided by the communications system
- Intercom calls can be made between communications system extensions
- A switchhook flash, feature access code, or feature button is interpreted as intended for the Centrex Service

In Limited Centrex Service:

- The communications system operates in Key or Hybrid/PBX mode
- Intercom calls can be made between communications system extensions
- Calls to Centrex extensions require access to a Prime Line
- A switchhook flash, feature access code, or feature button is interpreted as intended for the communications system
- Outside calls using Centrex Service are made through individual Prime Lines or pooled Prime Lines
- Other types of lines (TIE, DID, T1) can also be used for outside calls without using Centrex Service

Considerations and Constraints

To prevent user confusion, extension numbers in the communications system should reflect the ending digits of the Centrex station line number. For example, a telephone with a Centrex Prime Line number of 4322 should have an extension number of 4322 in a 4-digit numbering plan, 322 in a 3-digit numbering plan, or 22 in a 2-digit numbering plan.

Centrex service supports only touch-tone telephones,

With Full Centrex, the Recall and fixed function buttons (**Conference**, **Transfer**, and **Drop**) control Centrex functions. Corresponding communications system functions can be programmed on buttons if any are available. (See **Recall/Timed Flash** for additional information.) With Limited Centrex, the **Recall** and fixed function buttons control communications system functions. In either case, some Centrex functions can be programmed on **Directory** and **Auto Dial** buttons, but not on other blank feature buttons.

During high-traffic periods, the loop-start lines used by Centrex can cause a glare problem when multiple calls access the same line simultaneously. Loop-start lines also have higher cable losses than ground-start lines, and cannot guarantee secure toll restriction.

With Limited Centrex, in either Key or Hybrid/PBX mode, DID, TIE, WATS, and T1 lines can be used. They cannot be used with Full Centrex in Behind Switch mode.

With Limited Centrex, outside calls made by using an **SA** button to access a pool require two access codes for outside calls, one access code for the pool, and one for outside lines on the Centrex.

Centrex users should not be assigned Calling Restrictions because the system prevents a telephone with Calling Restrictions from sending a switchhook flash to the CO. Calling restrictions should be placed at the Centrex.

Once a call connection is made with Centrex service, the system cannot detect additional calls that are initiated following a Centrex switchhook flash. Therefore, the SMDR and systems such as CAS, Integrated Solution II (IS-II), Integrated Solution III (IS-III), and CAT do not report the additional calls.

Users who have access to both Centrex and communications system features must be aware of which they are connected to when they attempt to use a feature. Use of Centrex buttons when connected to the communications system, or of communications system buttons when connected to Centrex Service will cause misdialed calls.

If an MFM is not being used on an MLX telephone, the second extension should be removed in order to reduce the number of Centrex lines. The automatic assignment of two extensions to each MLX set may mean the installer must renumber the system because the removed numbers are not automatically reassigned, and because their removal leaves empty places in the sequential numbering of extensions. See System Numbering for additional information.

Mode Differences

Hybrid/PBX Mode

The Hybrid/PBX mode can only be used in a Limited Centrex configuration.

Prior to Release 2.0, a switchhook flash can be sent to the Centrex only when the Prime Line is terminated on a Personal Line or **Pool** button. (Prime Lines can be shared.) Accessing the same Prime Line through an **SA** button, does not allow the switchhook flash to be sent to the Centrex.

In Release 2.0 and later, Centrex lines active on an **SA** button (including a **Shared SA** button) can use Recall or switchhook flash.

DID, TIE, WATS, and T1 lines can be used in pools. They can only be used as Personal Lines with Centrex Service in Key and Behind Switch modes.

Key Mode

The Key mode can only be used in a Limited Centrex configuration.

Key mode avoids the problem of each station requiring a Prime Line (or shared Prime Line) to make Centrex calls. It allows the use of an **ICOM** button for access to Centrex lines. It also allows the use of DID, TIE, WATS, and T1 lines as Personal Lines.

Prior to Release 2.0, a switchhook flash can be sent to the Centrex only when the line is terminated on a Personal Line. Accessing the same line through an **ICOM** button does not allow the switchhook flash to be sent to the Centrex. (Prime Lines can be shared.)

In Release 2.0 and later, Centrex lines active on an **ICOM** button can use Recall or switchhook flash.

Behind Switch Mode

For Full Centrex configuration, the communications system must be programmed in Behind Switch mode.

Behind Switch mode does not support MERLIN MAIL, the Call Accounting System, or the Call Management System. These applications are supported only in Key and Hybrid/PBX mode.

Full Centrex service supports only loop-start facilities. While use of non-loop-start lines will not be blocked by the communications system, they have the potential for causing dialing errors. Even random use of non-loop-start modules such as E&M boards will throw off the default line assignments. If non-loop-start boards must be used, they must be positioned after the last loop-start line module, or Prime Lines on later modules may be assigned incorrectly. If the DS1 module is used, it must be placed after all other loop-start boards on the system so that default line assignments on the communications system are not affected. PRI trunks are not supported in Behind Switch mode.

In Behind Switch mode, during periods of high telephone traffic, users may experience delays in obtaining dial tone from the Centrex system. This could cause misdialing when using System or Personal Speed Dialing.

Telephone Differences

Multiline Telephones

MLX Telephones

On MLX telephones, special ringing patterns are used to differentiate various call types. If Personalized Ringing is used, the Personalized Ring comes *before* the distinctive pattern.

- Centrex intercom calls are indicated by the personalized ring followed by a beep.
- Centrex special or priority calls are indicated by the Personalized Ring followed by 3 short rings.
- Outside calls are indicated by the Personalized Ring followed by 2 short rings.
- Centrex special signaling is indicated by the facility tracking tone.

Adjuncts connected to an MFM cannot send a switchhook flash to the Centrex line.

Analog Multiline Telephones

On analog multiline telephones, special ringing patterns are used to differentiate various call types. If Personalized Ringing is used, the Personalized Ring comes *after* the distinctive pattern.

- Centrex intercom calls are indicated by a beep followed by the Personalized Ring.
- Centrex special or priority calls are indicated by 2 short rings followed by the Personalized Ring.
- Outside calls are indicated by 1 short ring followed by the Personalized Ring.
- Centrex special signaling is indicated by the facility tracking tone.

Single-Line Telephones

When single-line sets are used in Behind Switch mode, a Prime Line is assigned automatically to the station if there are enough lines.

Centrex Service supports only touch-tone telephones

When single-line sets are connected directly to a Prime Line, they have limited functionality because they cannot access communications system features or make inside calls. They can, however, use all the Centrex features by dialing the proper access codes.

If the single-line set has the Idle Line Preference programmed for an **ICOM-Ring** button, the user has complete use of all communications system features. Access to Centrex lines and features is gained by dialing the Centrex access code. However, a single-line set cannot use the communication system conference, transfer, or drop because the switchhook flash goes directly to the Centrex line and is not intercepted or interpreted by the communications system.

It is recommended that single-line sets be connected via an 012 or OPT module. If an single-line set is connected to a MFM, it cannot do a switchhook flash,

In Hybrid/PBX mode, special ringing patterns are used on single-line sets to differentiate various call types. Personalized Ringing is not available.

- Centrex intercom calls are indicated by 2-burst ringing.
- Centrex special or priority calls are indicated by 3-burst ringing.
- Outside calls are indicated by 3-burst ringing.
- Centrex special signaling is not indicated.

Feature Interactions

| | |
|-----------------------------|--|
| Calling Restrictions | Centrex users should not be assigned Calling Restrictions because the system prevents a telephone with Calling Restrictions from sending a switchhook flash to the CO. Calling restrictions should be placed at the Centrex. |
| Conference | In Behind Switch mode, the fixed function Conference button applies to Centrex operation and is not recognized by the communications system. A button can be programmed for communications system Conference. |
| Drop | In Behind Switch mode, the fixed function Drop button applies to Centrex operation and is not recognized by the communications system. A button can be programmed for communications system Drop. |

- Recall** In Behind Switch mode, a **Recall** button should be programmed to send switchhook flash to activate Centrex features.
- Speed Dial** During periods of high traffic, users may experience a delay in obtaining dialtone from the Centrex Service. This could cause misdialing when using System Speed Dial or Personal Speed Dial. Pause characters can be programmed as part of the Speed Dial number after entering the access code.
- Transfer** In Behind Switch mode, the fixed function **Transfer** button applies to Centrex transfers and is not recognized by the communications system. A button can be programmed for communications system Transfer.

Conference

At a Glance

| | |
|------------------------|---|
| Users Affected | Telephone users, operators |
| Reports Affected | System Information |
| Mode | All |
| Telephones | All except single-line telephones in Behind Switch mode |
| Programming Code | |
| Conference | *772 |
| Drop | *773 |
| MLX Display Label | Conference [Conf] Drop [Drop] |
| System Programming | Assign host system Conference dial code: ● Options → More → BehndSwitch → Conference Assign host system Drop dial code: ● Options → More → BehndSwitch → Drop |
| Maximums | |
| Multiline telephones | 5 participants (originator + 2 inside, 2 outside) |
| Single-line telephones | 3 participants (originator + 2) |

Description

Conference allows a user to establish a conference call that includes inside lines, outside lines, or both.

NOTE:

Conference is available in all modes; it is a programmable feature only in Behind Switch mode.

Adding Conference Participants

A user can consult privately with each participant before adding the person to the conference. Anyone who has a shared Personal Line or a **Shared SA** button with the user can join the conference on that button and is counted as a participant.

Dropping Conference Participants

A multiline telephone user can selectively drop conference participants while the conference is in progress by using the **Drop** button. However, a QCC system operator cannot selectively drop participants from a conference. When the QCC system operator presses the **Drop** button, only the most recently added participant is dropped. Single-line telephone users can drop the most recently added participant from the conference by pressing and releasing the switchhook.

Leaving a Conference

The conference originator can leave the conference by pressing the **Hold** button (the conference continues). If a conference originator (excluding a QCC system operator) leaves a conference by either hanging up or selecting another line, the entire conference is disconnected.

Considerations and Constraints

Transmission quality may vary during the conferencing of outside lines.

A call to a busy number cannot be added to a conference.

Pressing the **Drop** button and the line button for a participant also disconnects a participant who joined the conference by using a shared outside line or an **SA** or **ICOM** button.

When a conference originator puts the conference on hold, Music-on-Hold is not activated.

Beginning with Release 1.1, the system automatically selects an **SA** or **ICOM** button when the user presses the **CONF** button. In Release 1.0, the system does not automatically select an **SA** or **ICOM** button; the user must select the line manually.

In addition, beginning with Release 1.1, systems use prompting to help the MLX display telephone user set up a conference call. When the user presses the **Conference** button, one of the following happens:

- If the system is in Hybrid/PBX mode and the user has an available **SA** button, the system automatically selects one in the following order of preference:
 - **SA Originate Only** (Ring)
 - **SA Originate Only** (Voice)
 - **SA Ring**
 - **SA Voice**

⚠ CAUTION:

*If the system selects a Voice button, the caller hears a beep instead of ringing. If a person does not answer at the destination extension and the originator completes the conference, the conversation of the other parties will be broadcast on that extension's speaker. The originator must be sure to **Drop** the unanswered destination extension on a Voice button to prevent this from happening*

- If the system is not in Hybrid/PBX mode or the user has no available **SA** button, the prompt `Select a Line` appears on Line 2 of the display on an MLX display telephone.

After the system selects a **System Access** button or the user selects a line, Line 2 displays the prompt `Dial, then Press CONF`. The user can dial a number or select another line. Line 1 shows call handling information, such as dialed digits, while Line 2 is unchanged. When the user presses the **Conference** button again to connect all parties, the prompt on Line 2 is replaced by the date and time. Line 1 displays the number of parties on the conference.

If the conference originator presses the **Conference** button, selects a line button, dials a number, and presses the **Conference** button again before the person being called answers, all conference participants hear ringback, which may cause voices to cut in and out.

If the conference originator calls a co-worker and presses the **Conference** button and the co-worker, while on hold for the conference, presses a **Hold**, **Conference**, or **Transfer** button, the call is disconnected.

If a conference participant (excluding the originator) who is included on a conference call on an **SA** or **ICOM** button leaves the conference temporarily by putting the call on hold and then rejoins the conference on a shared outside line or **Shared SA** button, the person is connected to the conference. However, the original conference call appearance on the **SA** or **ICOM** button is disconnected.

Mode Differences

Behind Switch Mode

The fixed **CONF** button on multiline telephones activates Conference from the host system. The dial codes for the host system for Conference and Drop must be system programmed. A multiline telephone user can program a **CONF** or **Drop** button to use the communication system's Conference or Drop features as described above.

A single-line telephone user cannot use the Conference feature in the Behind Switch mode.

Telephone Differences

Queued Call Consoles

A Queued Call Console (QCC) system operator arranges a conference call by pressing the **Conference** button after receiving a call or dialing the first outside number or extension. The green LED next to the **Call** button flashes to indicate that the person is on hold for the conference. An outside participant hears Music-on-Hold if it is programmed; an inside participant hears nothing. The operator then dials the next number and presses the **Conference** button again; all participants, including the originator, are connected.

To add another person, the QCC operator presses the **Conference** button again. The green LED next to the Call button flashes, indicating a call on hold, and the participants can converse. The originator can continue to add participants by dialing the number and pressing the **Conference** button until up to two outside lines and three extensions (including the conference originator) are added. The operator can converse privately with each participant before pressing the **Conference** button to join other participants.

Calls to busy numbers cannot be added to a conference. To disconnect a call to a busy number, the QCC system operator presses the Call button with the conference call. This disconnects the call to the busy number. The system operator can then continue adding participants.

All conference participants are connected together on one Call button. This allows the system operator to put the conference on hold and have other Call buttons available to make or receive other calls. However, since all participants are on one Call button, the system operator can drop only the last party added to the conference by pressing the **Drop** button and the Call button used to originate the conference.

To rejoin a held conference call, the QCC operator presses the Call button with the conference participant. To end the conference, the QCC operator joins the conference and presses the **Forced Release** button, and all participants are disconnected. If, instead of pressing the **Forced Release** button, the system operator hangs up, the conference is put on hold.

When a QCC operator arranges a three-participant conference (the system operator and two other participants) and then presses the **Release** button or hangs up, the QCC operator is released from the call and the other two participants remain connected. If the system operator arranges a three- or four-participant conference, pressing the **Release** button has no effect; however, if the system operator hangs up, the conference is put on hold.

Other Multiline Telephones

A multiline telephone user arranges a conference call by pressing the **Conference** button after receiving a call or dialing the first outside number or extension. The green LED next to the button used to make the call flashes to indicate the person is on hold for the conference. An outside participant hears Music-on-Hold if it is programmed, and an inside participant hears nothing. The user then selects another line button, dials the next number, and presses the **Conference** button again. When the user presses the **Conference** button a second time, all participants (including the originator) are connected.

To add another person, the user presses the **Conference** button again. The green LEDs next to the line buttons flash, but the participants can converse. The originator can continue to add participants by pressing the **Conference** button, selecting a line or dialing the number, and pressing the **Conference** button until up to two outside lines and three extensions (including the conference originator) are in the conference. The user can converse privately with each participant before pressing the **Conference** button to join other participants.

Calls to busy numbers cannot be added to a conference. A user who reaches a busy number can press any of the line buttons associated with the conference call to disconnect the call to the busy number before continuing to add participants.

To selectively drop a participant, the multiline telephone user presses the **Drop** button followed by the line button for the participant to be dropped. To leave the conference call temporarily without disconnecting the call, the user presses the **Hold** button. To rejoin a held conference call, the user presses any line button representing a conference participant. To end the conference, the user hangs up and all participants are disconnected.

Single-Line Telephones

A single-line telephone user sets up a conference call by pressing and releasing the **Recall** button or switchhook after receiving a call or dialing the first outside number or extension. The participant automatically goes on hold (an outside participant hears Music-on-Hold if it is programmed, and an inside participant hears nothing). The user then dials the other number and presses and releases the **Recall** button or switchhook again. All participants are connected on the conference call. A total of three participants can be included on a conference call originated from a single-line telephone. The user can converse privately with each participant before pressing and releasing the **Recall** button or the switchhook to join other participants.

Calls to busy numbers cannot be added to a conference. If the user reaches a busy number, the user can press and release the **Recall** button or switchhook to drop the outside line.

A single-line telephone user can drop the most recently added participant from the conference by pressing and releasing the **Recall** or **Flash** button or switchhook.

If a single-line telephone with a timed disconnect is used, for example, AT&T model 2500YMGK or 2500MMGK, pressing the switchhook disconnects the call. With this type of telephone, the **Recall** button must be used instead of the switchhook to add a conference participant or drop the most recently added conference participant.

Feature Interactions

| | |
|-----------------------------|---|
| Account Code Entry | A separate account code must be entered for each outside call added to the conference if account codes are to be used. |
| Allowed Lists | A user with an outward-restricted telephone cannot add an outside participant to a conference unless the participant's number is on an Allowed List assigned to the telephone. A user with a toll-restricted telephone cannot dial a toll number to add a participant unless the participant's number is on an Allowed List assigned to the telephone. |
| Auto Dial | Press the Conference button to enter the Flash special character in a telephone number programmed on an Auto Dial button. Press the Drop button to enter the Stop special character in a telephone number programmed on an Auto Dial button. |
| Barge-In | Barge-In can be used to interrupt conference calls; all participants hear the Barge-In tone. Barge-In, however, does not connect the user to a conference call if the conference already has the maximum number of participants. If Barge-In is used to connect to a conference call that involves an outside trunk and the person on the outside trunk hangs up, the person using Barge-In is also dropped. |
| Callback | A queued call cannot be part of a conference. With Automatic Callback, the call is automatically queued; however, if the user tries to add the queued call to the conference, the system returns a busy tone. If a user with Selective Callback tries to queue a call while setting up a conference, the system returns a busy tone. The user must press the Drop button and the line button with the queued call to drop the busy tone from the conference. |
| Calling Restrictions | See Allowed Lists and Disallowed Lists in this section. |
| Call Waiting | A Call Waiting tone is only heard by the person receiving the call and not by other conference participants. If the conference originator reaches a busy extension, hears the Call Waiting special ringback, and tries to add the call to the conference, the system returns a busy tone. The user must press the Drop button and then press the line button used to call the busy extension to drop the busy tone from the conference. |

| | |
|----------------------------------|--|
| Coverage | Conference calls can be originated from a Cover button only when the user with a caller on the Cover button presses the Transfer button, dials the number for another person, and then presses the Conference button to complete the transfer. In this case only, instead of the call being transferred, a conference call with three participants (including the originator) is established. |
| Directory | The Extension, Personal, and System Directory features can be used to set up conference calls. Press the Conference button to enter the Flash special character in a directory listing telephone number. Press the Drop button to enter the Stop special character. |
| Disallowed Lists | A user cannot add an outside number to a conference if the number is on a Disallowed List assigned to the telephone. |
| Display | <p>As with any other call, the dialed digits appear on Line 1 of the display as a user sets up a conference call. On MLX telephones, Line 1 of the display shows the number of conference participants., In addition, the MLX telephone display prompts the user each time the Conference button is pressed. The display also prompts the user to drop a conference participant after the Drop button is pressed, and then shows the updated conference information on Line 1 and which line or extension was dropped on Line 2.</p> <p>Beginning with Release 1.1, if the system is not in Hybrid/PBX mode or the user has no available SA or ICOM button the prompt <i>Select a Line</i> appears on Line 2 of the display. After the system selects an SA or ICOM button line, Line 2 displays the prompt <i>Dial, then Press CONF</i>. After the user dials a number or selects another line, the prompt on Line 1 is changed to show call handling information, such as dialed digits. When the user presses the Conference button again to connect all parties, the prompt on Line 2 is replaced by the date and time, while Line 1 displays the number of parties active on the call.</p> |
| Forced Account Code Entry | A separate account code must be entered for each outside call added to the conference. |
| Forward and Follow Me | When calls received on a Personal Line are forwarded to an outside telephone number and another user who shares the Personal Line and the trunk selected to forward the call joins the in-progress call (by pressing the Personal Line button), the person joining the call is considered the conference originator and the forwarded call can be conference. If the person who joined the call hangs up, all participants on the conference call are disconnected. |

| | |
|------------------------------|---|
| Group Calling | Calls waiting in the calling group queue or ringing at a calling group member's extension cannot be added to a conference call. A user must be connected to a calling group member before the call can be added to the conference. |
| Headset Options | Headset Auto Answer is disabled and must be activated manually while an MLX telephone user with a headset is setting up a conference. |
| Hold | <p>The conference originator receives the Hold Reminder tone when the conference is on hold for more than one minute as a result of using the Hold button or adding other participants. If Direct-Line Console (DLC) Operator Automatic Hold is programmed and used by a DLC operator setting up a conference, the entire conference goes on hold.</p> <p>Both sides of an inside call cannot be put on hold. Therefore, if the user presses the Hold button while waiting on hold for a conference initiated by another user (an inside call), or if the user presses the Conference button while waiting on hold on an inside call, all participants are disconnected.</p> |
| Inspect | <p>If the user presses the Conference button while Inspect is activated, Inspect is canceled and the system tries to activate the Conference feature.</p> <p>When a user joins a conference by using a shared outside line or Shared SA button, the QCC display reflects the correct number of participants. However, if the QCC operator uses the Inspect feature to verify the number of participants, the number shown on the display does not include participants joining the conference on a shared button.</p> |
| Multi-Function Module | The Conference feature cannot be used on the MFM because the system ignores the switchhook flash sent by the MFM. |
| Music-on-Hold | If the first participant put on hold for a conference is an outside call, the caller hears Music-on-Hold until the second participant is added. When a conference originator puts the conference on hold, Music-on-Hold is not activated. |
| Paging | Speakerphone and loudspeaker paging calls cannot be added to a conference. |
| Park | Conference calls cannot be parked. |
| Pickup | A conference call cannot be picked up at another telephone. A conference originator can, however, pick up a call and add it to the conference. |
| Recall | A single-line telephone user with a Recall button adds a participant to a conference call and connects all participants by using the Recall button. In addition, the Recall button can be used to drop the most recently added participant or to drop a busy number. |

| | |
|---|---|
| Signaling | signaling can be used during a conference. |
| Speed Dial | Press the Conference button to enter the Flash special character in a Personal Speed Dial or System Speed Dial telephone number. Press the Drop button to enter the Stop special character. |
| SMDR | When a conference call includes inside and outside participants, records are generated only for outside participants. When a call is dropped from a conference call, it is considered a completed call and is sent to the SMDR print queue. |
| System Access/ Intercom Button | Calls on SA and ICOM buttons (including Shared SA buttons) can be included in a conference call. If a user involved in a conference call on an SA or ICOM button also has a Shared SA button for one of the conference participants, the call is active at the SA or ICOM button and not at the Shared SA button for the other participant. |
| Transfer | A conference call with three or more participants (including the conference originator) cannot be transferred. However, if the conference originator has one person on hold for the conference (the originator pressed the Conference button after reaching the first person) and after dialing the number for the next participant decides to transfer the call, the originator can press the Transfer button to transfer the call instead of conferencing it. |

Coverage

At a Glance

| | |
|-------------------------|---|
| Users Affected | Telephone users, DLC operators |
| Reports Affected | Direct Group Calling Information Extension Information Group Coverage Information Operator Information System Information |
| Mode | All |
| Telephones | |
| Individual sender | All except QCC |
| Individual receiver | All multiline telephones except QCC |
| Group member (sender) | All except QCC |
| Group receiver | Multiline telephones, QCC queue, Calling Group (if Calling Group, no others) |
| Programming Code | |
| Sender buttons | |
| Coverage Off | *49 |
| Coverage VMS Off | *46 |
| Receiver buttons | |
| Primary Cover | *40 + sender's ext. no. |
| Secondary Cover | *41 + sender's ext. no. |
| Group Cover | *42 + sender's group no. |
| Feature Code | |
| Coverage Inside Off | **48 (send outside calls only) |
| Coverage Inside On | *48 (send inside and outside calls) |
| MLX Display Label | CoverageOff [CvOff] CoverInside,Off [CvIns,Off] CoverInside,On [CvIns,On] Coverage VMS Off [CvVMS,Off] Coverage,Primary [Cover,Prmry] Coverage,Secondary [Cover,Secnd] Coverage,Group [Cover,Group] |

Continued on next page

At a Glance *(continued)*

| | |
|---|--|
| <p>System Programming</p> | <p>Assign extensions to a Coverage sender group: ● Extensions → More → Group Cover</p> <p>Assign a Calling Group as a Group Coverage receiver: ● Extensions → More → Grp Calling → GrpCoverage</p> <p>Change number of rings before call is sent to Group Coverage receivers: ● Options → More → Cover Delay</p> <p>Change delay for Cover buttons programmed for Delay Ring; change additional delay before call is sent to Group Coverage receivers: ● Options → Delay Ring</p> <p>Assign or remove principal user of a Personal Line (calls will follow Coverage pattern of principal user only): ● Lines Trunks → More → PrncipalUsr</p> <p>Assign QCC queue as receiver for specific Coverage Groups and assign QCC Queue Priority for Group Coverage calls: ● Operator → Queued Call → Call Types → GrpCoverage → Priority</p> <p>Assign QCC operator to receive calls for a Coverage Group: ● Operator → Queued Call → Call Types → GrpCoverage → Operator</p> |
| <p>Maximums</p> | |
| <p>Individual Coverage receivers per extension (sender)</p> | 8 |
| <p>Group Coverage receivers per Coverage Group (senders)</p> | 8 (not counting QCC queue) |
| <p>Group memberships per extension (sender)</p> | 1 |
| <p>Cover buttons per multiline telephone (receiver)</p> | 8 |
| <p>Coverage Groups</p> | 30 |
| <p>Members per Coverage Group</p> | Unlimited |
| <p>Coverage Groups sending to one Calling Group <i>or</i> QCC queue</p> | 30 |

Continued on next page

At a Glance *(continued)*

| | |
|---|--|
| Factory Settings | |
| Coverage | On |
| Coverage Inside | On (inside and outside calls covered) |
| Coverage VMS | On (inside and outside calls covered by VMS) |
| Delay Ring Interval | 2 rings (range 1-6 rings) |
| Coverage Delay Interval | 3 rings (range 1-9 rings) |
| Secondary Coverage Delay Interval | 2 rings (fixed) |
| Retry Timing Interval | 5 seconds (fixed) |
| QCC Queue Priority for Coverage Group | 4 (range 1-7) |
| QCC operator to receive calls for Coverage Group | Primary system operator |

Description

Coverage allows a call ringing at one extension (a *sender*) to ring at another extension (a *receiver*) at the same time, and to be answered at either telephone. It is not necessary for the sender and receiver to have shared Personal Lines or **Shared SA** buttons. A Coverage sender can be an individual extension (*Individual Coverage*) or a group of extensions (*Group Coverage*).

An extension becomes a sender in *either or both* of the following ways:

- An **Individual Cover** button is programmed for the sender on a multiline telephone (a receiver).
- The sender is made a part of a Coverage Group through system programming *and* a receiver is programmed in any of the following ways:
 - A **Group Cover** button is programmed for the group on a multiline telephone (a receiver).
 - The Queued Call Console (QCC) queue is programmed to be a receiver for the group.
 - A Calling Group is programmed to be a receiver for the group.

An individual multiline telephone can have any combination of up to eight **Individual Cover** and **Group Cover** buttons.

Several timers, summarized in Table 3, affect the delivery of a call to Coverage. The descriptions of Individual Coverage and Group Coverage and their interactions in the following sections include explanations of these timers.

Table 3. Timers Affecting Coverage

| Timer | Factory Setting | Range | Description |
|-----------------------------------|------------------------|--------------|--|
| Coverage Delay Interval | 3 rings | 1-9 rings | Delay before sending calls to Group Coverage, when: <ul style="list-style-type: none"> ■ Sender also has Individual Coverage <i>and</i> receiver is available ■ Sender does not have Individual Coverage <i>or</i> receiver is not available, <i>and</i> Group Coverage receiver is Calling Group only or QCC queue only (no Group Cover buttons on multiline telephones) |
| Ring Timing Options: | | | |
| Immediate | — | — | Programmable on any line button, including Cover buttons on multiline telephones |
| Delay Ring | 2 rings | 1-6 rings | <ul style="list-style-type: none"> ■ Programmable on any line button, including Cover buttons on multiline telephones ■ Delay before sending calls to Group Coverage (in addition to Coverage Delay Interval), when sender also has Individual Coverage <i>and</i> receiver is available |
| No Ring | — | — | <ul style="list-style-type: none"> ■ Programmable on any line button, including Cover buttons on multiline telephones ■ On sender telephone, prevents calls from going to Coverage |
| Secondary Coverage Delay Interval | 2 rings | fixed | Delay before sending Individual Coverage calls to Secondary Cover buttons, when sender also has Primary Individual Coverage |
| Retry Timing Interval | 5 sec | fixed | Repetition interval for trying to send calls to Group Coverage when no receiver is available; continues until call is answered by sender or receiver (or caller hangs up) |

Individual Coverage

An Individual Coverage receiver has a button programmed on his or her multiline telephone that corresponds to another extension. A given sender can have up to eight Individual Coverage receivers. A receiver can have separate buttons for up to eight senders, but can have only one button to provide Individual Coverage for a given sender.

A button for Individual Coverage can be programmed as either **Primary Cover** or **Secondary Cover**. The Secondary option provides a two-ring delay (the Secondary Coverage Delay Interval) to allow the sender to answer before the receiver; the Primary option does not provide this delay. In addition, each

Cover button can be programmed with Ring Timing options: Immediate Ring, Delay Ring, or No Ring.

Regardless of how these options are programmed, the green LED next to the Cover button on the receiver’s telephone flashes immediately when a call begins ringing at the sender’s telephone, The receiver’s telephone rings as shown in Table 4. Both telephones continue to ring (as programmed) and the green LED on both telephones continues to flash until the call is answered, either by the sender or by the receiver (or the caller hangs up).

Table 4. Ringing on Individual Coverage {Receiver} Buttons

| <u>Ring Timing Option on Cover Button</u> | <u>Primary Cover Button Rings...</u> | <u>Secondary Cover Button Rings...</u> |
|---|---|--|
| Immediate Ring | Immediately | After sender’s telephone rings 2 times (SC) |
| Delay Ring | After sender’s telephone rings 1–6 (DR) times | After sender’s telephone rings 2 times (SC) + 1-6 (DR) times |
| No Ring | Does not ring | Does not ring |

DR = Delay Ring Interval
 SC = Secondary Coverage Delay Interval

Group Coverage

Up to 30 Coverage Groups can be programmed for the system. Group Coverage is an arrangement in which senders are organized into groups and calls received by any unavailable group member are sent to one or more receivers. There is no limit to the number of members in a group, but a given extension can be a member of only one group. Any telephone except a QCC can be a member of a Coverage Group.

Three types of Group Coverage receivers can be assigned:

- A **multiline telephone** can have a **Group Cover** button for a specific Coverage Group, assigned either through extension programming or centralized telephone programming. A given Coverage Group can send its calls to up to eight **Group Cover** buttons; all eight can be programmed on one multiline telephone or can be distributed among up to eight telephones.

Each **Group Cover** button can be programmed for Immediate Ring, Delay Ring, or No Ring.

A single-line telephone cannot be programmed individually as a Group Coverage receiver. However, it can be a member of a Calling Group that is a receiver. Group Cover buttons cannot be programmed on a QCC.

- The **QCC queue** can be assigned through system programming as a receiver for up to 30 Coverage Groups, with up to four QCC operators (the maximum allowed number of QCCs) assigned to receive calls for each Coverage Group. The QCC queue can be the only receiver or can be used in addition to **Group Cover** buttons on multiline telephones. If both are used, the QCC queue is not counted in the eight-receiver maximum for the group.

- A **Calling Group** can be assigned through system programming as a receiver for up to 30 Coverage Groups.

When a Calling Group is programmed as a receiver for a Coverage Group, a call to a Coverage Group member enters the Calling Group queue and waits for an available Calling Group member. When the call rings at an available member's telephone, it stops ringing at the sender's telephone and the sender's green LED goes off.

Group Coverage by a Calling Group is used to provide Coverage by a voice messaging system (VMS).

NOTE:

If a Calling Group is assigned as a receiver for a Coverage Group, no other types of receivers — multiline telephones with **Group Cover** buttons or the QCC queue — can be assigned for that Coverage Group.

Selective Coverage

When an extension is a sender, all of its eligible calls go to Coverage unless the telephone user uses one of the following features:

- **Coverage Off** turns off all Individual Coverage. It does not turn off Group Coverage. (If a Group Coverage sender uses Coverage Off, other telephone users can use Group Pickup to answer the sender's calls; however, they cannot use Individual Pickup.)

To use Coverage Off/On, the sender must have a programmed **Coverage Off** button.

- **Coverage Inside** prevents or allows Coverage of inside calls:

- With Coverage Inside Off, only outside calls are covered.
- With Coverage Inside On, inside and outside calls are covered.

To use Coverage Inside Off/On, the sender must use the feature code or select it from the display of a display telephone. It cannot be programmed on a button.

- **Coverage VMS Off** prevents outside calls from being sent to voice mail. With Coverage VMS Off, only calls from inside extensions are covered by voice mail. Outside calls go to any other points of Coverage.

Coverage VMS Off is available only on a Release 2.0 (or later) system. To use this feature, the sender must have a programmed **Coverage VMS Off** button.

Eligibility for Coverage

Not all calls are eligible for Coverage. Eligibility is determined by the type of call and how the sender's telephone is set up. Table 5 shows which calls at the sender's telephone are eligible for Coverage.

Table 5. Calls Eligible and Calls Ineligible for Coverage

| Call Rings on... | Eligible | Ineligible |
|--|----------|------------|
| SA or ICOM buttons programmed for Immediate or Delay Ring | | |
| ■ Inside calls | ✓ | |
| ■ DID trunk calls | ✓ | |
| ■ Inside or outside transferred calls | ✓ | |
| ■ Calls forwarded from another extension | | ✓ |
| ■ Calls on Shared SA buttons | | ✓ |
| ■ Calls on Cover buttons | | ✓ |
| ■ Voice-announced calls | | ✓ |
| ■ Transfer Return calls | | ✓ |
| ■ Returning Parked calls | | ✓ |
| ■ Reminder Service calls | | ✓ |
| Personal Line buttons programmed for Immediate or Delay Ring | | |
| ■ Sender is principal user | ✓ | |
| ■ Someone else is principal user | | ✓ |
| ■ No principal user is assigned | ✓ | |
| Pool buttons programmed for Immediate or Delay Ring | ✓ | |
| Any button programmed for No Ring | | ✓ |

NOTE:

- In a Release 2.0 (or later) system, when a Coverage receiver calls a Coverage sender the call can be sent to Coverage. If a receiver calls a sender for whom he or she is covering and the sender is busy or unavailable, the call proceeds to other points of Coverage. It does not come back to the receiver who originated the call.
In a Release 1.0 or Release 1.1 system, a call from a receiver to a sender is not sent to Coverage.
- If a sender sets the Ring Timing option for No Ring on any Personal Line, **Pool**, **SA**, or **ICOM** buttons, calls arriving on those buttons do not go to Coverage.

Interaction of Individual and Group Coverage

Group Coverage can be used alone or with Primary and/or Secondary Individual Coverage. When both Individual Coverage and Group Coverage are used, the interactions between them follow this principle: If possible, a caller should always get personal attention from someone with a **Cover** button for the sender — first an Individual Coverage receiver, then a multiline telephone with a **Group Cover** button. Only when these types of receivers are unavailable or not programmed will the call go to another, more “impersonal” type of Group Coverage — either the QCC queue or a Calling Group.

A call to a sender that is also ringing on **Primary Cover**, **Secondary Cover**, and/or **Group Cover** buttons rings until answered (or the caller hangs up). When the call is answered, the call appearance (ringing and flashing green LED) is removed from all other telephones providing Coverage for the sender. However, when a Calling Group is programmed as the receiver for a Coverage Group, the call appearance is removed from the sender's telephone when the call leaves the Calling Group queue and is sent to an available Calling Group member. (A call on a Personal Line button on the sender's telephone is an exception. The call appearance remains on that button until answered, either by the sender or by a receiver.)

NOTE:

The duration of the ringback heard by an outside caller is shorter than the actual ring heard at an MLX or analog multiline telephone. Therefore, an outside caller hears one or two rings, and may also hear the number of rings programmed for the Coverage Delay Interval plus the number of rings programmed for the Delay Ring Interval. For example, if the Coverage Delay Interval is programmed for one ring and the Delay Ring Interval is programmed for two rings, an outside caller hears four rings before the call begins ringing at receivers' telephones. If both intervals are set to their maximum values, the caller can hear up to two additional rings.

Whether and when a call is sent to Group Coverage depends on the following:

- Whether the sender is available or unavailable
- Whether the sender has Individual Coverage (**Primary Cover** or **Secondary Cover** buttons programmed on other telephones), and if so, whether an Individual Coverage receiver is available
- The type of Group Coverage receivers programmed:
 - Only **Group Cover** buttons on multiline telephones
 - Both **Group Cover** buttons and the QCC queue
 - Only the QCC queue
 - Only a Calling Group
- The value set for the Coverage Delay Interval through system programming (1-9 rings)

- The value set for the Delay Ring Interval through system programming (1-6 rings)

A sender is considered unavailable (his or her telephone does not ring) under the following conditions:

- The sender has turned on Do Not Disturb.
- All **SA** or **ICOM** buttons are in use on the sender's telephone.
- The sender's telephone is in extension programming or test mode.
- The sender with an MLX display telephone is using the Alarm Clock or Directory feature.
- The sender's telephone is forced idle for system programming or centralized telephone programming.
- The sender's telephone is non-responding (for example, not connected).

A receiver is considered unavailable (his or her telephone does not ring) under the following conditions:

- The receiver has turned on Do Not Disturb.
NOTE:
In this case, the sender can call the receiver.
- Another call is ringing or answered on the receiver's **Cover** button for that sender.
- The receiver's telephone is in extension programming or test mode.
- The receiver with an MLX display telephone is using the Alarm Clock or Directory feature.
- The receiver's telephone is forced idle for system programming or centralized telephone programming.
- The receiver's telephone is non-responding (for example, not connected).

Table 6 shows when a call goes to Group Coverage receivers, *after* first going to any available Individual Coverage receivers (as described in Table 4).

If a call is sent to Group Coverage and no receiver is available, the system continues trying to send the call every 5 seconds until a Group Coverage receiver becomes available. This repeated attempt to send the call is *Retry Timing*. The 5-second Retry Timing Interval cannot be changed.

Table 6. Group Coverage Call Delivery Rules

| <u>Receiver Type</u> | <u>Sender Status</u> | <u>Individual Coverage Receiver Status</u> | <u>Call Delivered to Group Coverage after...</u> |
|---|----------------------|--|--|
| Group Cover button(s) only or Group Cover button(s) and QCC queue | Available | Available | <i>CD + DR*</i> |
| | Available | Unavailable or not programmed | Immediate* |
| | Unavailable | Available | <i>CD + DR*</i> |
| | Unavailable | Unavailable or not programmed | Immediate* |
| QCC queue only | Available | Available | <i>CD + DR</i> |
| | Available | Unavailable or not programmed | <i>CD</i> |
| | Unavailable | Available | <i>CD + DR</i> |
| | Unavailable | Unavailable or not programmed | Immediate |
| Calling Group only | Available | Available | <i>CD + DR</i> |
| | Available | Unavailable or not programmed | <i>CD</i> |
| | Unavailable | Available | <i>CD + DR</i> |
| | Unavailable | Unavailable or not programmed | Immediate |

CD = Coverage Delay Interval

DR = Delay Ring Interval

* Ringing is delayed an additional *DR* after green LED goes on at a **Group Cover** button programmed for Delay Ring on multiline telephone.

See Figure 5 and Figure 6 for examples of LED and ringing patterns. Figure 5 shows examples when only Group Coverage is used or when all Individual Coverage receivers are unavailable. Figure 6 shows examples when both Individual Coverage (Primary and Secondary) and Group Coverage is programmed for an individual sender.

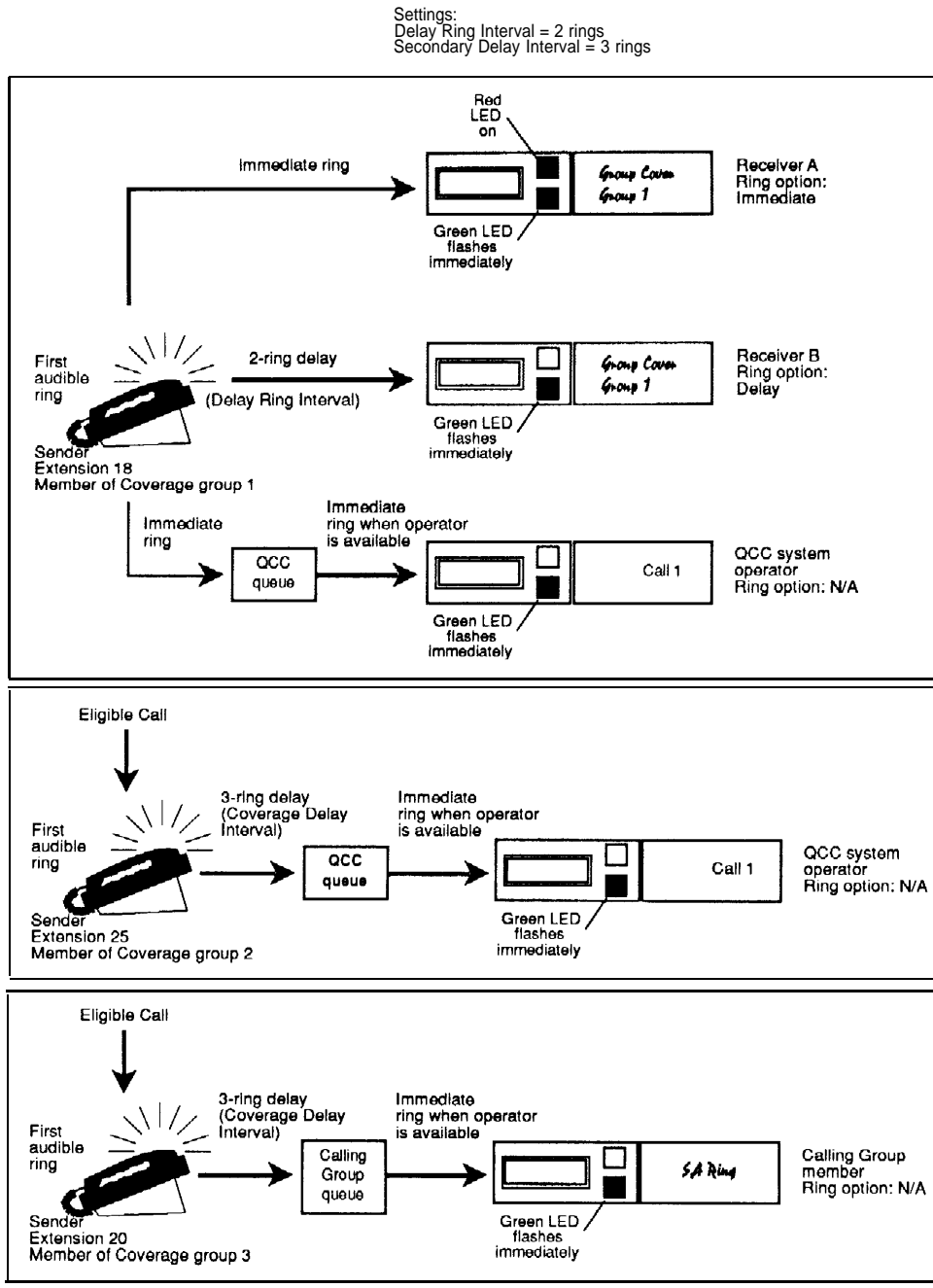


Figure 5. Group Coverage Only or All Individual Coverage Receivers Not Available

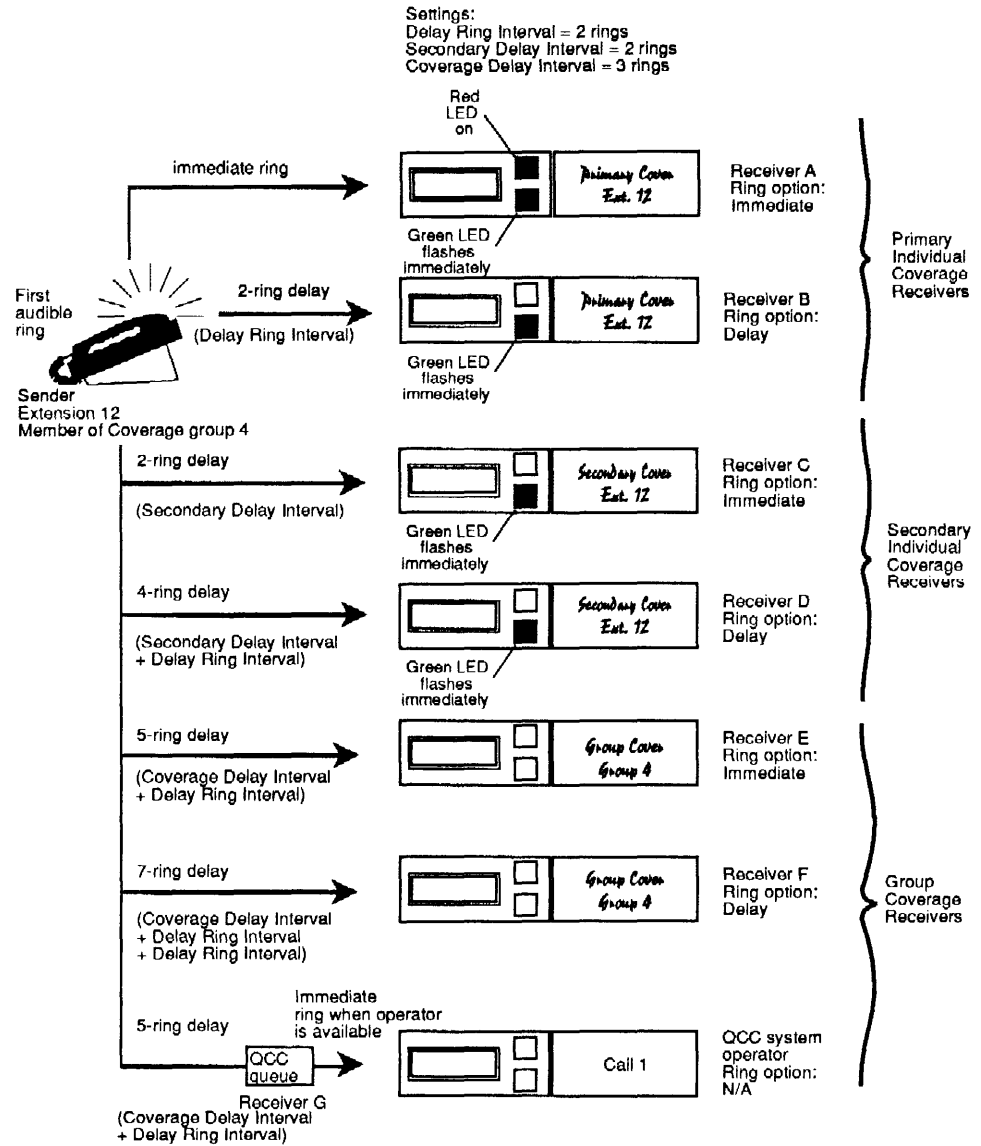


Figure 6. Individual (Primary and Secondary) and Group Coverage Ringing Patterns

Considerations and Constraints

In a Release 2.0 (or later) system, when a Coverage receiver calls a Coverage sender the call can be sent to Coverage. If a receiver calls a sender for whom he or she is covering and the sender is busy or unavailable, the call proceeds to other points of Coverage. It does not come back to the receiver who originated the call. In a Release 1.0 or Release 1.1 system, a call from a receiver to a sender is not sent to Coverage.

A maximum of eight **Primary Cover** and **Secondary Cover** buttons can be assigned to provide Individual Coverage for a given sender. Only one **Cover** button can be programmed on a multiline telephone for a given receiver.

A maximum of eight **Group Cover** buttons can be assigned to provide Group Coverage for each Coverage Group. All eight can be programmed on one multiline telephone, or the **Group Cover** buttons can be distributed among up to eight multiline telephones.

A receiver with a multiline telephone can have a maximum of eight **Cover** buttons, which can be programmed for any combination of Group and Individual Coverage.

If a receiver has both a **Primary Cover** or **Secondary Cover** button for a sender and a **Group Cover** button for the group of which the sender is a member, a call for the sender rings only at the receiver's **Primary Cover** or **Secondary Cover** button. This prevents multiple deliveries of the same call to the same receiver.

Each Coverage Group can have from no members to the number of extensions in the system.

Each sender can be a member of only one Coverage Group.

If a sender is a member of a Coverage Group and no receivers are assigned for the group, if the sender is unavailable (and does not have Individual Coverage), the caller hears ringback, not a busy tone.

If a Calling Group is assigned as a receiver for a Coverage Group, it is the only receiver for that group; no other types of Group Coverage receivers can be programmed. However, individual members of the Coverage Group can be senders to Individual Coverage receivers.

Only one Calling Group can be assigned as a receiver for a given Coverage Group.

A Calling Group can be a receiver for up to 30 Coverage Groups.

A receiver with a **Group Cover** button can also be a member of the Coverage Group for which the button is programmed. Calls to that receiver are sent to all other receivers programmed for the group.

A Calling Group cannot be a Coverage sender, but individual members of a Calling Group can be senders.

When both the QCC queue and multiline telephones are programmed as receivers for a Coverage Group, the QCC queue is not counted in the eight-receiver maximum for the group.

The QCC queue can provide Group Coverage for up to 30 groups.

A QCC cannot be a Coverage sender.

When Group Coverage is the only type of Coverage programmed for a sender, the QCC queue should not be programmed in addition to **Group Cover** buttons on multiline telephones. Because the QCC cannot be programmed for Delay Ring, eligible calls ring immediately both at the sender's telephone and at the QCC queue. This may not allow the sender enough time to answer the call before a QCC operator answers.

If a call is sent to Coverage because the sender did not have a button available to take the call, the call does not return to the sender's telephone, even if a button becomes available while the call is ringing at a Coverage receiver's telephone.

An inside voice-announced call made on an **SA Voice** or **ICOM Voice** is not sent to Coverage. If it is converted to a ringing call — for example, because the sender's speakerphone is in use — the ringing call is sent to Coverage.

No type of **Cover** button can be used to make calls.

The Delay Ring Interval is used as an additional delay (in addition to the Coverage Delay Interval) before a call goes to Group Coverage when the sender also has Individual Coverage and an Individual Coverage receiver is available.

Telephone Differences

Direct-Line Consoles

A DLC can be both an Individual or Group Coverage receiver and a member of a Coverage Group.

Queued Call Consoles

The QCC cannot be a sender for either Individual or Group Coverage.

The QCC queue can be a Group Coverage receiver for up to 30 Coverage Groups. Since **Cover** buttons cannot be programmed on the QCC, the queue is not counted in the eight-receiver maximum allowed for each Coverage Group. The QCC cannot be an Individual Coverage receiver,

The QCC queue priority and the individual QCC operator to receive calls for each Coverage Group are assigned independently for each group.

If a trunk is programmed to ring in to the QCC queue and also appears as a Personal Line on a telephone that is a member of a Coverage Group covered by the QCC queue, a call on that trunk does not appear as a Coverage call at the QCC.

If **Group Cover** buttons are programmed for a Coverage Group in addition to the QCC queue and all QCC operators are in Position Busy mode, a Group Coverage call goes to all receivers except the QCC queue.

When Group Coverage is the only type of Coverage programmed for a sender, the QCC queue should not be programmed in addition to **Group Cover** buttons on multiline telephones. Because the QCC cannot be programmed for Delay Ring, eligible calls ring immediately both at the sender's telephone and at the QCC queue. This may not allow the sender enough time to answer the call before a QCC operator answers.

When the QCC queue is assigned as a receiver for a Coverage Group and a call transferred to a group member is not answered, the call returns to the queue as follows:

- If the QCC Return Ring Interval is shorter than the Coverage Delay Interval, the call returns as a returning transfer call.
- If the QCC Return Ring Interval is longer than the Coverage Delay Interval, the call returns as a Group Coverage call.

Other Multiline Telephones

Any type of multiline telephone can be a sender and/or receiver for either Individual Coverage or Group Coverage, and can have up to eight **Cover** buttons.

Single-Line Telephones

A single-line telephone can be a sender for either Individual or Group Coverage. A single-line telephone cannot be a receiver for Individual Coverage. It can be a receiver for Group Coverage only when it is a member of a Calling Group assigned as a receiver for a Coverage Group.

Feature Interactions

| | |
|---------------------------------|---|
| Account Code Entry | <p>When answering calls on a Primary Cover, Secondary Cover, or Group Cover button, a receiver cannot enter an account code. (If the receiver tries to enter an account code, no error tone sounds and the account code does not appear on the SMDR printout.)</p> <p>Since Cover buttons are not required when the QCC queue is assigned as a receiver for a Coverage Group, a QCC operator can enter an account code and the account code appears on the SMDR printout.</p> |
| Auto Answer All | Auto Answer All can be used by either a sender or a receiver with an analog multiline telephone who wants Individual or Group Coverage calls answered by an answering machine connected to the telephone. |
| Auto Answer Intercom | Auto Answer Intercom does not allow a receiver with an analog multiline telephone to use a Hands-Free Unit (HFU) to answer calls received on a Primary Cover , Secondary Cover , or Group Cover button. |
| Automatic Line Selection | Primary Cover , Secondary Cover , and Group Cover buttons cannot be programmed in an ALS sequence because the buttons cannot be used to make calls. |
| Barge-In | Barge-In can be used on an Individual or Group Coverage call answered at any receiver telephone. |
| Callback | The sender and all receivers must be busy before a call to a sender can be queued. The call is sent to Coverage before it is put in the Callback queue. Once a call is in the Callback queue, it is not sent to Coverage again. The Callback call indicating that a busy extension or pool is available is not sent to Coverage. |
| Call Waiting | A call to a sender with Call Waiting turned on goes to Individual and/or Group Coverage first. If all Coverage points are busy, the sender receives the Call Waiting tone. |
| Camp-On | Coverage calls answered by any receiver can be camped-on to another user. |
| Conference | Conference calls can be originated from a Cover button only when the user with a caller on the Cover button presses the Transfer button, dials the number for another person, and then presses the Conf button to complete the transfer. In this case only, instead of the call being transferred, a conference call with three participants (including the originator) is established. |
| Direct Station Selector | When a system operator transfers an Individual or Group Coverage call and the call returns, the red LED next to the DSS button for the sender does not flash as it does for a transfer return for calls received on other types of line buttons. |

- Display** When an Individual or Group Coverage call is answered by a receiver with a display telephone, `Cover` is shown for the call type, followed by the sender's name (if programmed) or extension number, and the reason the call was sent to Coverage: `No Ans`, `BUSY`, or `DND`. On an MLX telephone, other reasons why calls are sent to Coverage are also shown: `Invalid/unknown DID number` or `Invalid/unknown Remote Access number`. The receiver sees the caller's information by pressing **More**.
- Do Not Disturb** When a sender turns on Do Not Disturb, Individual Coverage or Group Coverage receivers for that sender can call the sender. All other calls to the sender go to Coverage.
- When a receiver turns on Do Not Disturb, he or she does not receive Coverage calls. However, a sender to that receiver can call the receiver.
- If both a sender and all receivers have Do Not Disturb on, the sender's calls do not go to Coverage and the caller hears a busy signal. On a Personal Line, the caller hears ringback and the green LED flashes, but the telephone does not ring.
- Forward and Follow Me** When a Coverage sender forwards calls, calls are forwarded and sent to Coverage at the same time. Calls received on a **Primary Cover**, **Secondary Cover**, or **Group Cover** button are not forwarded.
- If a sender has Group Coverage by the QCC and has also forwarded calls to the QCC operator, calls are sent to the QCC as Coverage calls.
- Group Calling** A Calling Group can be a receiver for up to 30 Coverage Groups. A Calling Group cannot be a receiver for Individual Coverage.
- A Coverage Group can have only one Calling Group as a receiver, but members of the Coverage Group can also have Individual Coverage receivers.
- As soon as a Group Coverage call is sent from the Calling Group queue to a Calling Group member, the call appearance is removed from the sender's telephone (except for outside calls received on Personal Lines).
- A Calling Group cannot be a sender, but an individual Calling Group member can be a sender for Individual Coverage and/or a member of a Coverage Group. When a call to the Calling Group extension number is sent from the queue to the Calling Group member, it goes only to the member's Individual Coverage receivers and not to the member's Group Coverage receivers. Calls to the member's individual extension go to both Individual and Group Coverage receivers.
- Hold** Coverage calls answered by any type of receiver can be put on hold. The Hold Timer or Operator Hold Timer applies to a Coverage call on hold.

| | |
|------------------------------|--|
| Multi-Function Module | An MFM can be a sender or a receiver for Individual or Group Coverage. This allows the associated MLX telephone user to screen calls by using an answering machine connected to the MFM or to supplement ringing by using an external alert connected to the MFM. A sender can use Coverage Off to prevent calls from being sent to an answering machine. |
| Park | A returning parked call is not eligible for Coverage. A call answered on a Primary Cover , Secondary Cover , or Group Cover button can be parked on that button. |
| Personal Lines | <p>When a principal user is assigned for a Personal Line, calls arriving on the Personal Line follow that user's Coverage pattern, if any. Calls received on Personal Line buttons on senders' telephones other than the principal user do not go to Coverage.</p> <p>If no principal user is assigned, calls received on the Personal Line are sent to all available Individual Coverage receivers for all senders sharing the line and to the Group Coverage receivers programmed for the sender whose telephone is connected to the lowest port in the lowest-numbered slot in the control unit.</p> <p>Once a receiver answers a call received on a Personal Line on a Cover button and puts the call on hold, the sender and any other user who shares the Personal Line cannot pick up the call by pressing the Personal Line button. For proper handling, the receiver should transfer the call to the sender.</p> |
| Pickup | An Individual or Group Coverage sender or receiver can be a member of a Pickup group. This allows Pickup to be used to answer a ringing Individual or Group Coverage call. If a sender who is a member of a Pickup group uses Coverage Off to prevent calls from being sent to Individual or Group Coverage receivers, his or her calls can be picked up by using the Individual Pickup feature. However, calls cannot be picked up by using the Group Pickup feature. When a Coverage call is answered by using Pickup, the call appearance is removed from all other telephones in the Coverage arrangement. |
| Pools | Calls received on a sender's Pool button programmed for Immediate or Delay Ring are eligible for Individual or Group Coverage. |
| Recall | <p>Recall has no effect on a call answered on a Primary Cover, Secondary Cover, or Group Cover button.</p> <p>In a Release 2.0 (or later) system, Recall can be used on a Group Coverage call answered by a member of a Calling Group. In a Release 1.0 or Release 1.1 system, Recall cannot be used on a call of this type, since it is answered on an SA or ICOM button.</p> |
| Reminder Service | Reminder Service calls are not eligible for Individual or Group Coverage. |

- Ringling Options** Calls received on line buttons programmed for No Ring are not sent to Coverage.
Primary Cover, Secondary Cover, and Group Cover buttons can be programmed for Immediate Ring, Delay Ring, or No Ring.
If an Individual or Group Coverage receiver is on a call when a Coverage call is received, the receiver hears an abbreviated ring (if Abbreviated Ring is enabled).
Calls received on a **Primary Cover, Secondary Cover, or Group Cover** button ring with the receiver's (not the sender's) Personalized Ringing pattern.
- SMDR** The extension of the telephone on which an Individual or Group Coverage call is answered is shown on the SMDR report.
- System Access/ Intercom Buttons** When a **Primary Cover, Secondary Cover, or Group Cover** button is programmed, a call received on an **SA** or **ICOM** button that is eligible for Individual or Group Coverage remains on the sender's **SA** or **ICOM** button until it is answered at the receiver's telephone.
A call received on a **Shared SA** button is not eligible for Individual or Group Coverage.
If a receiver programs a **Primary Cover, Secondary Cover, or Group Cover** button for a sender and also has a **Shared SA** button associated with the sender, the green LEDs next to both the **Cover** button and the **Shared SA** button flash. The red LED stays on at the **Shared SA** button, but does not automatically go on next to the **Cover** button.
Once answered by a receiver, a call is removed from the sender's **SA** or **ICOM** button (including all **Shared SA** buttons).
- Transfer** A call answered on a **Primary Cover, Secondary Cover, or Group Cover** button can be transferred.
Calls transferred to a sender are eligible for Individual and/or Group Coverage. However, the sender hears a Call Waiting tone if he or she is using Coverage Off to prevent calls from going to Coverage and does not have an available **SA** or **ICOM** button to receive a transferred call, even if an Individual or Group Coverage receiver is available.
When One-Touch Transfer is programmed, a call answered on a **Cover** button can be transferred by using a **DSS** button, but not by using an **Auto Dial** button.
Transfer returns are not eligible for Coverage.
- Voice Announce to Busy** An inside voice-announced call is not sent to Coverage, because if the sender's speakerphone is available, the call is answered as soon as it is made. If the sender's speakerphone is in use, the call is converted to a ringing call, which is sent to Coverage.

Direct-Line Console

At a Glance

| | |
|--|---|
| Users Affected | DLC operators only |
| Reports Affected | System Information Operator Information Extension Information |
| Mode | All |
| Telephones | |
| Digital | MLX-28D™, MLX-20L |
| Analog | BIS-22D, BIS-34, BIS-34D, MERLIN II System Display Console |
| System Programming | Assign or remove an individual DLC position: ● Operator → Positions → Direct Line Enable or disable DLC Operator Automatic Hold Systemwide: ● Operator → DLC Hold When One-Touch Transfer is programmed, select either automatic or manual completion for system operators: ● Options → Transfer → One Touch → Transfer Change the duration of the timer signaling a call still on hold: ● Operator → Hold Timer |
| Maximums | |
| Operator positions (total DLCs and QCCs) | 8 |
| DLCs per module | 2 |
| Factory Settings | |
| Personal Lines | |
| Digital DLC | Lines 1-18 |
| Analog DLC | Lines 1-32 |
| DLC Operator Automatic Hold | Disabled |
| Operator Hold Timer | 60 sec (range 10-255 sec) |
| One-Touch Transfer with Automatic Completion | Enabled |
| Primary System Operator Position | Port 1 on first MLX or ATL station module (fixed) |
| Park Zone Extensions | 881-888 |

Description

The Direct-Line Console (DLC) is an answering position used by system operators for the following purposes:

- to answer outside calls that are not directed to an individual user or group
- to answer inside calls
- to transfer inside and outside calls to an extension or an outside telephone number
- to make outside calls—for example, for users with telephones restricted from making outside calls
- to set up conference calls
- to monitor system operation
- to monitor group member or room status when used with Extension Status in the group calling Call Management System (CMS) or hotel mode

A DLC operates like other multiline telephones. In all three modes of operation, outside lines are assigned as Personal Lines to individual buttons on the console. The lines assigned on an individual DLC can also be assigned to buttons on other consoles or other telephones. Incoming calls can ring on any of the line buttons, and several calls can ring simultaneously. The system operator directs calls to other extensions or to outside telephone numbers via the **Transfer** button.

When programmed system-wide, DLC Operator Automatic Hold puts an active call on hold when the DLC operator presses another line button. When One-Touch Hold is programmed system wide, pressing an **Auto Dial** button or **DSS** button also puts an active call on hold. Both prevent accidental disconnection of callers and speed call handling. The DLC operator hears an abbreviated ring as a reminder of a call on hold every time the interval programmed for the Operator Hold Timer (10-255 seconds) expires.

A multiline telephone, assigned as a DLC through system programming, can use both system operator features and telephone features available for non-operator multiline telephones to increase call-handling efficiency. The system operator features that can be assigned to buttons on the console are Alarm, Night Service, Missed Reminder, and Send/Remove Message.

On a system with 29 or fewer lines, Alarm, Night Service, and Send/Remove Message are assigned by default to analog DLCs on buttons 30-32. On a system with more than 29 lines, Alarm is replaced with line 30, Night Service is replaced with line 31, and Send/Remove Message is replaced with line 32. The first 18 lines on a digital DLC are always factory set as Personal Lines.

Each digital DLC can have one or two Direct Station Selector (DSS) adjuncts attached. The DSS cannot be attached to an analog DLC; however, the MERLIN II System Display Console provides a built-in DSS.

Inside Auto Dial buttons can also be programmed on DLCs. The system operator can use these buttons to transfer a call, make an internal call, or determine whether an extension has Do Not Disturb turned on.

Considerations and Constraints

The maximum number of DLC operator positions is eight. These can be all DLCs or a mixture of DLCs and QCCs. When both DLCs and Queued Call Consoles (QCCs) are assigned no more than four can be QCCs. In a system with both DLC and QCC positions, the *primary system operator position* must be QCC. The primary operator position is the first port on the first MLX or ATL station module.

Only multiline telephones connected to the first and fifth station jacks on a digital or analog module can be assigned as DLCs. This includes DLC positions used for Calling Group supervisors and CMS supervisors.

A maximum of two DLCs can be assigned per MLX or analog module.

A DLC cannot be located off-premises.

When only DLCs (and not QCCs) are assigned, the first DLC connected to the control unit is the primary system operator position. When the system is first connected, all Dial 0 calls, Invalid Destination calls from Remote Access users, and unassigned Direct Inward Dial (DID) calls are directed to this position,

CMS equipment is connected to analog station jacks that are assigned as DLCs. Two DLCs on the same module must be assigned for each CMS (maximum of two) connected to the system.

Mode Differences

Hybrid/PBX Mode

If QCCs are assigned with DLCs, a QCC must be connected to the first station jack on the first MLX module as the primary system operator position.

Pool buttons cannot be assigned on a DLC; however, trunks included in a pool can be assigned as Personal **Line** buttons on a DLC.

Trunks that are not assigned to buttons on the DLC can be selected by the system operator only by dialing the pool dial-out code from the SA button or, on an MLX DLC, by selecting a **DSS** button for the pool dial-out code.

Trunks that are not assigned to a pool cannot be selected from a DLC unless they are assigned to buttons on the console. **Shared SA** buttons cannot be assigned to DLCs.

Key and Behind Switch Modes

Only DLCs (not QCCs) are allowed in Key and Behind Switch modes.

A DLC operator cannot select lines that are not assigned to buttons on the console.

Telephone Differences

Direct-Line Consoles

An MLX-20L assigned as a DLC can also be used for system programming by connecting it to any of the first five station jacks on the first MLX module and designating the station jack for system programming. The Home screen of the MLX-20L and MLX-28D is the same as that of non-operator telephones.

The built-in DSS field on the MERLIN II System Display Console corresponds to physical station jacks in the control unit instead of specific extension numbers in the numbering plan. Therefore, **DSS** buttons on the MERLIN II System Display Console cannot be used to monitor the busy status of trunk pools or the busy status of a Calling Group.

An analog DLC cannot be used for system programming; however, System Speed Dial numbers, the system date, and the system time can be programmed from an analog DLC connected to the first analog station jack when the module with that jack is in slot 01 of the control unit.

Queued Call Consoles

All "Dial 0" calls are directed to the QCC queue and do not ring at any DLC positions. A DLC cannot use Position Busy, which is used only for QCCs. A DLC cannot be assigned as a Position Busy backup for a QCC (only Calling Groups can provide backup for a QCC).

Feature Interactions

Alarm

The DLC operator uses an **Alarm** button to monitor system operation. The red LED next to the **Alarm** button on the system operator console goes on when the system detects a problem that requires immediate attention. A system operator with a digital DLC can use Inspect to display the number of alarms; a system operator with an analog DLC cannot use Inspect.

On a system with fewer than 29 lines, an **Alarm** button is assigned by default to analog DLCs with 34 or more buttons. On a system with more than 29 lines, Alarm is replaced with line 30. The **Alarm** button is not a fixed feature and can be assigned to any available button on an analog or MLX DLC.

| | |
|---------------------------------|---|
| Auto Dial | An inside Auto Dial button can be programmed on a DLC. The DLC operator can use the button to transfer a call, make an internal call, or determine whether or not the extension is available. |
| Calling Restrictions | Calling Restrictions can be assigned to DLCs. Since restrictions apply to the telephone used to initiate a call transfer to an outside number, a user with a restricted telephone can circumvent restrictions by asking a system DLC operator with an unrestricted console to connect an outside call. |
| Call Waiting and Camp-On | When the DLC operator uses Camp-On to transfer a call to a busy extension, the call is placed in the Call Waiting queue and the caller hears the Call Waiting tone whether or not the extension has the Call Waiting feature activated. If the system is programmed for One-Touch Transfer with Automatic Completion, the system operator uses Camp-On by pressing the Transfer button, dialing the extension manually, activating Camp-On, hanging up, and pressing another line button or the Transfer button again. If the system operator presses an Auto Dial or DSS button, the transfer is automatically completed and Camp-On cannot be used. |
| Coverage | A DLC can be both an Individual or Group Coverage receiver and a member of a Coverage Group. No more than eight Primary Cover , Secondary Cover , or Group Cover buttons can be assigned on a DLC. |
| Directories | A system operator with a digital DLC can use all the Directory features. |
| Disallowed Lists | Disallowed Lists can be assigned to DLCs. |
| Do Not Disturb | The green LED next to an Auto Dial or DSS button on a DLC turns on when a user activates Do Not Disturb. In a Release 2.0 (or later) system, the operator can inspect a DSS button whose red LED is on to see whether the extension is busy or using Do Not Disturb. If the user at the extension has turned on Do Not Disturb, the Do Not Disturb message is also posted and appears on the operator's display. (However, the message may also mean that the user has posted the message without turning on the Do Not Disturb feature.) |
| Extension Status | Extension Status capability can be assigned to DLCs only. In the hotel configuration, only a DLC system operator can change an extension to status 0. In the Group Calling/CMS configuration, a Calling Group or CMS supervisor uses a DLC to monitor and change group member status. |
| Forward and Follow Me | A DLC operator can forward calls to extensions and, if the capability is assigned in system programming, to outside telephone numbers. Since outside lines are assigned as Personal Line buttons on the console, the capability to forward |

| | |
|------------------------------|--|
| | <p>calls received on each outside line (excluding loop-start trunks with unreliable disconnect) to an outside number must also be assigned in system programming and can be assigned to only one telephone for each individual trunk. In addition, the DLC must be designated as the principal user.</p> |
| Group Calling | <p>A DLC can be a member of a Calling Group and is normally used as the Calling Group supervisor position.</p> |
| Hold | <p>When programmed system-wide, DLC Operator Automatic Hold puts an active call on hold when the DLC operator presses another line button. When One-Touch Hold is programmed system wide, pressing an Auto Dial button or DSS button also puts an active call on hold. Both prevent accidental disconnection of callers and speed call handling. The DLC operator hears an abbreviated ring as a reminder of a call on hold every time the interval programmed for the Operator Hold Timer (10–255 seconds) expires.</p> |
| Messaging | <p>The Send/Remove Message feature is a system operator-only feature used by the DLC system operator to turn on the Message LED to indicate a message is waiting. For telephones without a display, Send/Remove Message is the only way the Message LED can be turned on and off by system operators. The Send/Remove Message is factory assigned to analog DLCs on button 32. The Send/Remove Message button is replaced with line 32 when the system has 32 lines or more. Send/Remove Message is not a fixed feature and can be assigned to any available button on either an analog or MLX DLC.</p> |
| Multi-Function Module | <p>An MFM cannot be assigned as a DLC position.</p> |
| Night Service | <p>A Night Service button is assigned to operator consoles only and is used by a DLC operator to activate and deactivate Night Service. A Night Service button is factory assigned to analog DLCs on button 31. On a system with more than 30 lines, the Night Service button is replaced with line 31. The Night Service button is not a fixed feature and can be assigned to any available button on either an analog or MLX DLC.</p> |
| Paging | <p>The trunk jack programmed as a Loudspeaker Paging port can be assigned to a button on an analog or digital DLC for one-touch access. A system operator with a digital DLC can also access a Loudspeaker Paging system by dialing the trunk number (801–880) for the trunk jack on which the Loudspeaker Paging system is connected.</p> |

| | |
|--|--|
| Park | Eight Park Zone codes are automatically reserved for parking calls from a DLC. The factory-set extension numbers are 881–888. These numbers cannot be assigned to the DSS buttons on a MERLIN II System Display Console. To assign the Park Zones to a DSS connected to a digital DLC, the extension numbers must be in the range programmed for the Page buttons. A system operator can program the Park Zone codes on inside Auto Dial buttons. An inside Auto Dial button can also be programmed with a user's (including a system operator's) own extension number and can be used to park calls. When the system is programmed for One-Touch Hold with Manual Completion, the user hears a busy signal and completes the transfer by hanging up or pressing the Transfer button. |
| Personal Lines | The factory setting in all modes for analog DLCs is that the first 32 lines connected to the system are automatically assigned as Personal Lines. For digital DLCs the first 18 lines connected to the system are automatically assigned as Personal Lines. |
| Pickup | A DLC can be part of a Pickup group. This allows other group members to provide backup Coverage for the DLC. In turn, the DLC system operator uses Pickup to answer calls on trunks that are not assigned to buttons on the console. |
| Pools | In Hybrid/PBX mode, a Pool button cannot be assigned to a DLC. The DLC operator uses trunks in pools by dialing the pool dial-out code from an SA button, or on a digital DLC with a DSS, by pressing the DSS button associated with the pool dial-out code. Trunks assigned to pools can be assigned as Personal Lines only on a DLC. |
| Reminder Service | DLC operators can use Reminder Service to set or cancel reminders for other users. The system operator can also see when a reminder was missed (the user did not answer the call) and cancel the missed reminder. The Missed Reminder feature can be used only on system operator positions. |
| Remote Access | Invalid Remote Access calls can be programmed to ring on an SA or ICOM button on a DLC. |
| Speed Dial | System Speed Dial numbers can be programmed from the first DLC connected to the first analog station jack from the module in slot 01 of the control unit. |
| System Access/ Intercom Buttons | Shared SA buttons cannot be assigned to DLCs. |
| Transfer | A DLC system operator uses Transfer to direct calls to other users. See Transfer for further information. |

Direct Station Selector—MLX

At a Glance

| | |
|--------------------|--|
| Users Affected | Operators |
| Reports Affected | Operator Information |
| Mode | All |
| Telephones | MLX-20L, MLX-28D telephones |
| System Programming | Assign extension numbers selected when DSS buttons are pressed: <ul style="list-style-type: none"> ● SysRenumber → Single → More → DSS Button |
| Maximums | 16 DSSs per system 2 DSSs per console (1 per console if 3 or more consoles in one carrier) 150 extension numbers per DSS (3 pages of extension numbers, 50 extension numbers per page) |
| Factory Settings | |
| Page 1 button | starts with extension 0 |
| Page 2 button | starts with extension 50 |
| Page 3 button | starts with extension 100 |

Description

One or two Direct Station Selectors (DSSs) can be connected to an MLX-20L or MLX-28D telephone assigned as a system operator position. The DSS enhances the call-handling capabilities of a system operator with a Direct-Line Console (DLC) or a Queued Call Console (QCC). When connected to an MLX-20L telephone used as a system programming console, the DSS facilitates system programming and centralized telephone programming procedures. When used with the Extension Status feature or by the Calling Group or Call Management System (CMS) supervisor, the DSS allows the user to determine, at a glance, Calling Group or CMS group member status or room status.

The DSS provides the following call-handling capabilities or information:

- one-touch dialing of inside extensions
- one-touch transfer
- one-touch hold (DLC only)

- on-hook, off-hook, or Do Not Disturb status of extensions in the system
- Extension Status indication (room or group member status)
- Calling Group queue status
- message-waiting LED status
- system operator Park Zones

The DSS, shown in Figure 7, has an array of 50 buttons, called **DSS** buttons, with red LEDs. A maximum of two DSSs can be connected together to provide a field of 100 buttons. Ten additional fixed-feature buttons with green LEDs are at the bottom of the DSS. The first three (from left to right) on the top row are **Page** buttons, which are used to select the range of extension numbers represented by the **DSS** buttons. A fourth button (lower left-most) is the **Message Status** button, which is used to change to and from Message Status operation. When you are in Message Status state, the LED next to each **DSS** button indicates whether or not a message is waiting from a system operator. The remaining six buttons on the first DSS and the ten buttons at the bottom of the second DSS are not operable (reserved for future use).

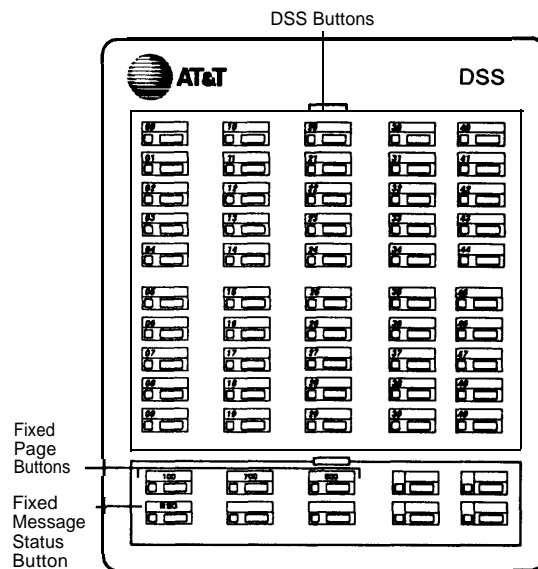


Figure 7. Direct Station Selector

A page is the range of extension numbers that is assigned to a DSS. A single DSS can have three pages of extension numbers, with 50 extension numbers per page, for a total of 150 extension numbers. When two DSS are connected, each page's capacity is increased to 100 extension numbers. The two connected DSS can have three pages of extension numbers for a total of 300 extension numbers.

The beginning number for each page is assigned via system programming. When the operator presses a **Page** button, the page of the DSS corresponds to a range of 50 (for a single DSS) or 100 (for two connected DSSs) extension numbers. The factory settings for **Page** buttons are as follows: the **Page 1** button begins with extension 0, the **Page 2** button begins with 50, and the **Page 3** button begins with 100.

If only one DSS is attached, each **Page** button assignment sets the console for a range of 50 extension numbers. If two DSSs are attached, each **Page** button assignment sets the console for a range of 100 extension numbers. If 2 DSSs are used, the factory setting **must** be changed so that the difference between extensions assigned to the range is at least 100. For example, assign **Page 1** button to begin with extension 10, **Page 2** button to begin with extension 110, and **Page 3** button to begin with extension 210. Also, **Page** button assignments should be sequential.

The beginning extension number associated with each **Page** button is the same for all system operator positions and cannot be programmed differently for individual system operator positions.

Each **Page** button can be programmed to begin with any extension number that is a multiple of 50 in the range of 0-9950. However, to speed call handling, it is recommended that the assignments be sequential—the range starting with the lowest extension number should be assigned to Page 1, the range starting with the next higher extension number should be assigned to Page 2, and the range starting with the highest extension number should be assigned to Page 3.

You cannot program individual buttons on a DSS.

Each of the 50 **DSS** buttons corresponds to one of three extension numbers. The specific extension number is determined by the **Page** button that the system operator presses. For example, if the first extension number for the **Page 1** button is programmed to be extension 100, the **DSS** buttons and associated LEDs on a single DSS correspond to extensions 100 to 149. The specific extensions represented by each **DSS** button are assigned from top to bottom, left to right as shown in Figure 7.

Each **DSS** button can correspond to extension numbers for one of the following:

- user extension number
- trunk number (801–880)
- pool dial-out code (Hybrid/PBX only)
- Calling Group extension number
- Paging Group extension number

- system operator Park Zone access code
- access code (usually 9) for Automatic Route Selection (ARS) or Idle Line Preference
- Remote Access dial code
- Listed Directory Number (the extension for the QCC queue)

The use and definition of each **DSS** button's LED depend on both the extension represented by the button and whether the system operator position is used for normal call handling, Calling Group or CMS Supervisory operation, Extension Status in Hotel configuration, or Message Status operation. See Extension Status and Group Calling for additional information.

Normal Call Handling Operation

Normal call handling operation is in effect when the position is not in Message Status or Extension Status operation. The **DSS** buttons are used for one-touch dialing of extension numbers. When a button for a telephone extension, Calling Group extension, or Paging Group extension is pressed, the extension number is dialed automatically. In Hybrid/PBX mode, the system operator can either select a specific pool or dial the ARS code by pressing the **DSS** button for a pool dial-out code or ARS code. If a **DSS** button for any of the extensions or codes mentioned above is pressed before the handset is lifted, the speaker is turned on automatically and an **SA** or **ICOM** button is selected.

A system operator can also use a **DSS** button to activate a feature that requires an extension number—Barge-In, Conference, Send/Remove Message, Forward (including Remote Call Forward), Follow Me, Leave Word Calling, Reminder Service, and Transfer. To do this, the system operator presses the **Feature** button, dials the feature code, and then presses the **DSS** button for the extension number.

The result of pressing a **DSS** button while on a call depends on the type of system operator position, the type of button pressed, and whether the system is programmed for One-Touch Hold or One-Touch Transfer as described in Table 7 and Table 8. For QCC system operator position, see Table 9.

Table 7. Results of Pressing DSS Button While Active on a Call: DLC Position with One-Touch Hold

| Extension Type | Result |
|--|--|
| User, Calling Group, Paging Group. | <p>An outside caller is put on hold, an SA or ICOM button is selected automatically, and the extension number is dialed automatically. Transfer is not completed automatically.</p> <p>An inside call is not put on hold and Transfer is not activated automatically. If the DSS button is for a user, a beep is sent to that user. If the DSS button is for a Calling Group or Paging Group, pressing the button has no effect.</p> |
| Pool dial-out code, ARS code | <p>The caller is put on hold, Transfer is initiated, the pool dial-out code or ARS code is automatically dialed, and the system operator can then dial the outside telephone number. Transfer completion is always manual—the system operator must press another button or hang up to complete the transfer.</p> |
| Park Zone | <p>The Park feature is activated, and the call is put on hold on the selected Park Zone to allow Pickup from any extension in the system.</p> |
| Line/trunk number, Listed Directory Number, unassigned extension numbers, “Dial 0” calls | <p>Ignored, no effect.</p> |

Table 8. Results of Pressing DSS Button While Active on a Call: DLC Position with One-Touch Transfer

| Extension Type | Result |
|--|--|
| User or Calling Group | The caller is put on hold, Transfer is initiated, an SA or ICOM button is selected automatically, and the extension number is dialed automatically. If manual completion is programmed, the system operator must press another button or hang up to complete the transfer. If automatic completion is programmed, the transfer is completed automatically. |
| Pool dial-out code or ARS code | The caller is put on hold, Transfer is initiated, the pool dial-out code is automatically dialed, and the system operator can then dial the outside telephone number. Transfer completion is always manual—the system operator must press another button or hang up to complete the transfer, regardless of whether the system is programmed for manual or automatic completion. |
| Paging Group | The caller is put on hold, an SA or ICOM button is selected automatically, and the Paging Group extension number is dialed automatically. Transfer is not completed automatically, regardless of whether the system is programmed for One-Touch Hold or One-Touch Transfer, since calls cannot be transferred to a Paging Group. |
| Call Park Zone | The Park feature is activated and the call is put on hold on the selected Park Zone to allow Pickup from any extension in the system. |
| Line/trunk number, Listed Directory Number, unassigned extension numbers, “Dial 0” calls | Ignored, no effect. |

Table 9. Results of Pressing DSS Button While Active on a Call: QCC Position

| Extension Type | Result |
|--|--|
| User or Calling Group | The caller is put on hold, the transfer is initiated, and the extension is dialed automatically. If extended call completion is programmed with the manual option, the operator must press the Release button or hang up to complete the transfer. If extended call completion is programmed with the automatic option, the transfer is completed automatically. |
| Pool dial-out code or ARS code | The caller is put on hold, the transfer is initiated, and the pool dial-out or ARS code is dialed automatically. The operator can then dial the telephone number. Transfer completion is always manual — the operator must press the Release button or hang up to complete the transfer, regardless of whether extended call completion is programmed with either the manual or automatic option. |
| Paging Group | The caller is put on hold, a Call button is automatically selected, and the Paging Group extension number is automatically dialed. The call transfer process is not automatically initiated since calls cannot be transferred to a Paging Group. |
| Park Zone | The Park feature is activated and the call is put on hold in the selected Park Zone to allow Pickup from any extension in the system. |
| Line/trunk number, Listed Directory Number, unassigned extension numbers, "Dial 0" calls | Ignored, no effect. |

The red LEDs for each **DSS** button are used to determine whether a user is on a call (off-hook), has no call active (on-hook), or is using Do Not Disturb. The LED indication (on) is not different for off-hook and Do Not Disturb; therefore, the system operator cannot determine whether the user is on a call or has activated Do Not Disturb. For a calling group extension on a **DSS** button, the red LED indicates the status of the queue. For a pool dial-out code on a **DSS** button, the red LED indicates trunk availability.

Table 10 shows the meanings of the red LEDs for **DSS** buttons while the system operator position is in the normal operation and Message Status is not active.

Table 10. LED Meanings for Normal Call-Handling Operation

| LED Status | Extension Type | Meaning |
|-------------------|---|---|
| Off | User | The person is not on the telephone and is not using Do Not Disturb. |
| | Line/trunk number | The line/trunk is not in use. |
| | Pool dial-out code | At least one trunk is available for making an outside call. |
| | Calling Group | The calling group queue is below the programmed threshold. |
| | Paging Group | The group is available for making a group announcement. |
| | Operator Park Zone | A call is not parked on this park zone code. |
| | ARS, Remote Access, Listed Directory Number | Not applicable; red LED is always off. |

Continued on next page

Table 10. - *Continued*

| LED Status | Extension Type | Meaning |
|---------------|---|---|
| On | User | The person is on the telephone or has activated the Do Not Disturb feature. |
| | Line/trunk number | The line/trunk is in use. |
| | Pool dial-out code | No trunks are available in this pool for outside calls. |
| | Calling Group | The Calling Group queue is at or above the allowable threshold. |
| | Paging Group | An announcement is being made to a Paging Group. |
| | Operator Park Zone | A call is parked on this Park Zone code. |
| | ARS, Remote Access, Listed Directory Number | Not applicable, red LED is always off. |
| Fast flashing | User | The person is calling the system operator position. |
| Slow flashing | User | A call transferred by the system operator to the extension is returning. |
| | Line/trunk number | A call is ringing on this line/trunk. |

NOTE:

Fast flashing is not applicable for extension types other than User.

Slow flashing is not applicable for extension types other than User and Line/trunk number.

Calling Group or CMS Supervisory Operation

A supervisor with a DLC switches from normal call handling to supervisory operation by pressing the **Feature** button, dialing **32**, and pressing the **Hold** button. The effect of pressing a **DSS** button while in supervisor operation is the same as that described for normal call-handling operation. See Group Calling for additional information.

When the supervisory position is not in Message Status operation (the green LED next to the **Message Status** button is off), the red LED next to each **DSS** button for a Calling Group member's extension is used to monitor the availability of members to take calls directed to the Calling Group. The meaning of the red LED associated with each group member is shown in Table 11.

Table 11. LED Meanings for Supervisor Operation without Message Status Active

| LED Status | Extension Status | Meaning |
|---------------|------------------|--|
| Off | 0 | The telephone is signed out from the group and the member is unavailable to take calls. |
| On | 2 | The telephone is signed into the group and calls can be sent to the member. |
| Slow flashing | 1 | Used for CMS only—the telephone is in the After Call Work state and the group member is not available to take calls. |

NOTE:

The LEDs next to **DSS** buttons for all other types of extensions are always off and have no meaning.

Extension Status Operation (Hotel Configuration)

When Extension Status is in the Hotel configuration, the Extension Status feature is assigned to, and removed from, individual DLCs via system programming. (See Extension Status for details.) The hotel Extension Status operation is always active unless the system operator presses the **Message Status** button to use the **Auto Dial** or **DSS** buttons to see message-waiting status for each telephone. The effect of pressing a **DSS** button while in the hotel Extension Status operation is the same as that described for normal call-handling operations earlier in this section.

The red LED next to each **DSS** button for a room extension is used to monitor room availability, and the **DSS** button is used to restrict the telephones when the rooms are not occupied.

The meaning of the red LED next to the **DSS** button for each room is shown in Table 12.

Table 12. LED Meanings for Hotel Extension Status Operation without Message Status Active

| LED Status | Extension Status | Meaning |
|-------------------|-------------------------|--|
| Off | 0 | The room is occupied and the telephone is in regular call-handling state, |
| On | 2 | The room is vacant and available for occupancy, and outside calls cannot be made from the telephone. |
| Slow flashing | 1 | The room is vacant and ready for cleaning. Outside calls cannot be made from the telephone. |

NOTE:

The LED next to the **DSS** button for all other types of extensions is always off and has no meaning.

Message Status Operation

Message status operation is in effect when the user presses the **Message Status** button (the lower left feature button on the first DSS) while in normal call handling operation, Calling Group, CMS Supervisory Operation, or Extension Status operation. The green LED next to the **Message Status** button is on when Message Status operation is active.

In normal call-handling operation, while the position is in Message Status operation, the red LEDs next to the **DSS** buttons for user extensions indicate whether or not the message-waiting LED was turned on by a system operator and do not indicate whether or not a message-waiting LED was turned on by another source, such as a fax machine or another user. An LED associated with a Calling Group extension or a pool dial-out code is always off while the position is in the Message Status operation.

If a system operator wants to turn on the message-waiting LED to indicate that a message is waiting, the system operator first checks the LED next to the recipient's **DSS** button to determine whether or not the Message LED is on. To turn the message LED on or off, the system operator presses the programmed **Send/Remove Message** button followed by the **DSS** button for the message recipient. The display shows that the message was sent. The operator presses the **Message Status** button to return to normal call handling.

MLX DLC operators can also use the Send/Remove Message feature to light message-waiting LEDs at extensions that are busy, ringing, or have Do Not Disturb active by pressing the **Feature** button and selecting `Leave Msg` from the display. See Messaging for more information on sending and receiving messages.

For Calling Group or CMS Supervisory operation or for hotel Extension Status, while the position is in Message Status operation, the red LED next to a **DSS** button for a user extension indicates whether or not a message has been sent by any of the operator positions. On a button for a Calling Group extension, the red LED indicates the status of the queue. For a **DSS** button for a pool dial-out code, the red LED indicates trunk availability. The meanings of the red LEDs next to the **DSS** buttons while the system operator position is in the Message Status operation are shown in Tables 13 and 14.

Table 13. LED Meanings for Normal Call Handling with Message Status Active

| LED Status | Extension Type | Meaning |
|------------|-------------------------------|---|
| Off | User | A system operator has not turned on the message-waiting LED. |
| On | User | A system operator turned on the message-waiting LED to indicate a message is waiting. |
| Off | All other types of extensions | No meaning |

Table 14. LED Meanings for Supervisor or Hotel Extension Status Operation with Message Status Active

| LED Status | Extension Type | Meaning |
|------------|---|---|
| Off | User | The person is not on the telephone and is not using Do Not Disturb. |
| | Line/trunk number | The line/trunk is not in use. |
| | Pool dial-out code | At least one trunk is available for making an outside call. |
| | Calling Group | The Calling Group queue is below the programmed threshold. |
| | Paging Group | The group is available for making a group announcement. |
| | Operator Park Zone | A call is not parked on this Park Zone code. |
| | ARS, Remote Access, Listed Directory Number | Not applicable; red LED is always off. |

Continued on next page

Table 14. - Continued

| | | |
|----|---|---|
| On | User | The person is on the telephone or is using Do Not Disturb. |
| | Line/trunk number | The line/trunk is in use. |
| | Pool dial-out code | No trunks are available on this pool for outside calls. |
| | Calling Group | The Calling Group queue is at or above the allowable threshold. |
| | Paging Group | An announcement is being made to the Paging Group. |
| | Operator Park Zone | A call is parked on this Park Zone code. |
| | ARS, Remote Access, Listed Directory Number | Not applicable; red LED is always off. |

Considerations and Constraints

One or two DSSs can be connected to an MLX-20L or MLX-28D telephone. DSSs cannot be connected to an MLX-10™, MLX-10D™, analog multiline, or single-line telephone.

Only a DLC or QCC can have a DSS.

Operator Park Zone codes must be included in the extension number range specified for one of the **Page** buttons.

If an extension is busy because features are being assigned through system or centralized telephone programming, the red LED next to the associated **DSS** button is on to indicate the busy condition.

For a QCC only, pressing the DSS button for a trunk number, Listed Directory Number, or unassigned extension number while active on a call is ignored.

Mode Differences

Behind Switch Mode

In the Behind Switch Mode, **DSS** buttons for system operator call Park Zones are not operable.

Feature Interactions

| | |
|----------------------------------|---|
| Automatic Route Selection | The LED next to a DSS button for the ARS code is always off. |
| Barge-In | Barge-In can be activated by pressing a programmed Barge-In button after making a call to the user's extension by using a DSS button. |
| Camp-On | When Camp-On is used to complete a call transfer and the call returns, the DSS button for the extension where the call was transferred goes off and does not flash as it does for a transfer return or park return. |
| Display | When the user presses a DSS button representing an extension number, the extension number is shown on the display while being dialed. When the Page button is pressed after pressing the Inspect button, the display shows <i>Page</i> , the page number selected, and the first extension number in the range. When the user presses the Message Status button, the display shows <i>Message Status</i> to indicate that the DSS is in the Message Status operation. |
| Do Not Disturb | In a Release 2.0 (or later) system, an operator can check the status of an extension whose red LED is on by using the Inspect button to determine whether the extension is busy or using Do Not Disturb. If the user at the extension has turned on Do Not Disturb, the Do Not Disturb message is also posted and appears on the operator's display. (However, the message may also mean that the user has posted the message without turning on the Do Not Disturb feature.) |
| Extension Status | A Calling Group or CMS supervisor or an operator at a DLC with Extension Status assigned can change the status of a group member or room by pressing a programmed Available or Unavailable Extension Status button and then pressing the DSS button for the group member or room. |
| Forward and Follow Me | Forward can be activated by pressing a programmed button or using a feature code and then pressing a DSS button for the extension where you want calls to go. Follow Me can be activated by using the feature code and then pressing a DSS button corresponding to the sending user's extension number. |

| | |
|-------------------------|--|
| Group Calling | The LED for a DSS button for a Calling Group extension number indicates the status of calls in the Calling Group queue. The LED is on when calls are at, or above, the programmed threshold and off when below the threshold. |
| Hold | When One-Touch Hold is programmed, only outside callers are automatically put on hold when a DSS button for a user, Calling Group, or Paging Group is pressed while another call is active. For an inside caller, pressing a DSS button for a user sends a manual signal to the user's telephone; pressing a DSS button for a Calling Group or Paging Group has no effect. |
| Inspect | Inspect can be used to determine the corresponding extension for each DSS button. To use Inspect, the user presses the Page button for the range of extensions, presses the Inspect button, and presses each DSS button to see what it represents; the label and the number of messages in the mailbox are also shown. The user can display information on only one extension at a time; to see information for another range of extensions, the user must press the Home button and repeat the process. If a message is posted at an extension associated with a DSS button, the message is shown on page 2 of the display when the system operator inspects the DSS button. |
| Last Number Dial | An extension dialed by pressing a DSS button is not stored for Last Number Dial. |
| Messaging | <p>When a system operator presses the Message Status button on a DSS, the LEDs on the DSS reflect only messages left by a system operator using the Send/Remove Message feature and not messages left by any co-worker (including a system operator) using the Leave Message feature.</p> <p>An operator can view a Posted Message for an extension by pressing the Inspect button and then the DSS button.</p> |
| Paging | Pressing a DSS button for a trunk programmed as a loudspeaker paging port only indicates whether or not the paging system is in use. The button cannot be used to gain access to the loudspeaker paging system. It can be used only to dial an extension for a Paging Group. When a DSS button for a Paging Group is pressed, the transfer process is not automatically initiated even if One-Touch Transfer (DLC only) or automatic Extended Call Completion (QCC only) is programmed for the system. Calls cannot be transferred to a Paging Group extension number. |

| | |
|--------------------------|--|
| Park | <p>Park Zone codes cannot be assigned to the DSS buttons on a MERLIN II System Display Console. For the Park Zones to be assigned to a DSS connected to an MLX telephone, the extension numbers must be in the range programmed for the Page buttons. Only DSS buttons corresponding to a system operator Park Zone can be used to park calls; calls cannot be parked on a DSS button corresponding to any other type of extension.</p> <p>When a system operator parks a call by using an associated DSS button and the call returns, the red LED associated with the Park Zone where the call was parked goes off and does not flash, as it does for a transfer return.</p> <p>To park a call at a Park Zone, the system operator with a DSS presses the DSS button for the Park Zone while the caller is on the line. If a system operator tries to park a call by pressing the Transfer button followed by the DSS button for the Park Zone, the call is put on hold for transfer and is not parked. This can transfer a call to an outside number in error.</p> |
| Pickup | <p>The DSS buttons associated with a trunk number (801-880) cannot be used for answering calls on specific trunks via the Individual Pickup feature. These DSS buttons are used strictly for busy or not busy status of each trunk.</p> |
| Saved Number Dial | <p>An extension dialed by pressing a DSS button is not stored for Saved Number Dial.</p> |
| Signaling | <p>If a user presses a Manual Signal button programmed with the system operator's extension while making a call to the system operator, the LED next to the user's DSS button changes from flashing to on while the Manual Signal button is held down.</p> |
| System Numbering | <p>The beginning extension number for each page is assigned through system programming. The factory settings are as follows: Page 1 button begins with extension 0, Page 2 button begins with extension 50, and Page 3 button begins with extension 100.</p> |

Transfer

The Transfer option of One-Touch Hold applies only to outside calls on a DLC and not to calls on a QCC. When One-Touch Hold is programmed, if a system operator presses a **DSS** button with an inside caller on the line or, in Hybrid/PBX mode, with an outside caller on an **SA** button, the call is not put on hold and a manual signal is sent to the extension corresponding to the **DSS** button pressed. When One-Touch Transfer (with either manual or automatic completion) is programmed and the operator presses the **DSS** button while the caller is on the line and no **SA** or **ICOM** button is available on which to transfer the call, the call does not go on hold. If the system operator hangs up, the caller is disconnected.

Transfer is always initiated and Transfer completion is manual when a system operator presses the **DSS** button corresponding to a trunk number, pool dial-out code (Hybrid/PBX only), or ARS access code (Hybrid/PBX only), even if One-Touch Hold, One-Touch Transfer with automatic completion (DLC only), or automatic extended call completion (QCC only) is programmed for the system.

When a system operator transfers an Individual or Group Coverage call and the call returns, the red LED next to the **DSS** button for the sender does not flash as it does for a transfer return for calls received on other types of line buttons.

When a system operator transfers a call to a Calling Group and the call returns, the red LED associated with the Calling Group does not flash as it does for a transfer return for user's extensions.

Directories

At a Glance

| | |
|---------------------|--|
| Users Affected | Telephone users |
| System Directory | MLX display telephone users |
| Extension Directory | MLX-20L telephone users |
| Personal Directory | |
| Reports Affected | Direct Group Calling Information |
| | Extension Directory |
| | Label Information |
| | System Directory |
| | System Information |
| Mode | All |
| Telephones | All |
| System Directory | MLX display telephones |
| Extension Directory | MLX-20L telephones |
| Personal Directory | |
| MLX Display Label | |
| System Directory | Directory, System Dir [Dir, SysDir] |
| Extension Directory | Directory, Ext Dir [Dir, ExtDir] |
| Personal Directory | Directory, Per Dir |
| System Programming | Create, change, or delete System Directory listings: <ul style="list-style-type: none"> ● More → Labeling → Directory → System Create, change, or delete Extension Directory listings: <ul style="list-style-type: none"> ● More → Labeling → Directory → Extension Create, change, or delete Personal Directory listings: <ul style="list-style-type: none"> ● More → Labeling → Directory → Personal Assign outside line/trunk labels: <ul style="list-style-type: none"> ● More → Labeling → LinesTrunks Assign calling group labels: <ul style="list-style-type: none"> ● More → Labeling → Grp Calling |
| Maximums | |
| System Directory | 130 listings 3 digits per Speed Dial field 11 characters per name field 40 digits per number field |
| Extension Directory | 1 listing for every extension in the system 7 characters per name field 4 digits per extension field |

Continued on next page

At a Glance *(continued)*

| | |
|----------------------|--|
| Maximums (continued) | |
| Personal Directory | 50 listings per Personal Directory 48 MLX-20L users 11 characters per name field 28 digits per number field |

Description

The Directory feature is a built-in, interactive telephone book that stores listings of names and telephone or extension numbers. Users with MLX display telephones can dial numbers by selecting listings from the display.

Directory listings are divided into three types:

- **System Directory:** Names and numbers of outside contacts (such as clients and suppliers). These listings are created in system programming and are assigned System Speed Dial codes to allow users with telephones other than MLX display telephones to dial these listings in the directory. See Speed Dial for details.
- **Extension Directory:** System extensions and the names of the users assigned to them. This directory can only be accessed with a name, Names are added to the directory by using the Labeling feature of system programming. (MLX display telephones only.)
- **Personal Directory:** Individual users' listings of names and numbers (outside telephone numbers and extensions). This directory is available on MLX-20L telephones only and is accessible only at the telephone where created.

System Directory

System Directory listings are established and changed only through system programming using the Labeling feature. Each listing consists of a three-digit Speed Dial number, an 11-character name field, and a 40-digit number field. Up to 130 listings are stored. Any listing can be specifically designated to suppress the display of a confidential number. When dialing a number designated or *marked* in this way, users see only the System Speed Dial code associated with the listing. A marked System Speed Dial code can be identified in the System Directory report by an asterisk preceding the telephone number.

When a marked System Speed Dial code is used to dial a number, any calling restrictions associated with that number (such as outward or toll restrictions) are overridden.

Special characters may be needed when programming System Speed Dial codes. Each of these characters counts as one of the 40 digits allowed in the telephone number. For information on special characters and their meanings, see *Appendix G*.

A user can access the System Directory by lifting the handset or pressing the **Speaker** button, pressing the **Feature** button, and dialing a three-digit System Speed Dial code. If the System Speed Dial code is associated with a telephone number that begins with a dial-out code (usually 9), the user must be on an **SA** or **ICOM** button (i.e., listening to internal dial tone). If the associated telephone number does not begin with a dial-out code, the user must be on an outside line button (i.e., listening to external dial tone).

Extension Directory

Extension Directory listings are established and changed only through system programming by using the Labeling feature. Each listing consists of a seven-character name field and a number field for up to four digits. There can be one listing for every extension on the system. All of the extensions in the system can be stored.

While the extension is being dialed, the display of the extension number cannot be suppressed from display telephones.

Personal Directory

Personal Directory listings can be established and changed through system programming using the Labeling feature or by an MLX-20L user at the telephone. Each listing consists of an 11-character name field and a 28-digit number field. Up to 50 listings can be included in each Personal Directory; only 48 users of MLX-20L telephones can have Personal Directories.

For purposes of privacy or security, any listing can be *marked* or *tagged* to suppress the display of the telephone number during dialing. The tag, however, does not prevent the telephone number from being displayed when an MLX-20L telephone user selects *Show Number* to display the telephone number associated with an individual listing.

Special characters may be needed when programming Personal Directory entries. Each of these characters counts as one of the 28 digits allowed. For information on special characters and their meanings, see *Appendix G*.

A listing cannot be used if the first character of the listing is a punctuation character such as a hyphen.

An MLX-20L telephone user, excluding a Queued Call Console (QCC) system operator, can display up to 16 Personal Directory listings on the Home screen, on two screens. Frequently used features and not Personal Directory listings are displayed on a QCC operator's Home screen.

Extension numbers can be programmed in a Personal Directory. However, in the Key and Behind Switch modes, the user must press an **ICOM** button before selecting the listing to dial the number.

Considerations and Constraints

While a Personal Directory on an MLX-20L telephone is being programmed, the user cannot receive calls (the caller hears a busy signal) but can still hear the telephone ringing. In Release 1.0, ringing is continuous, as in a normal call. In Release 1.1 and later, ringing occurs at 20 second intervals.

Personal Speed Dial is not related to the Personal Directory. See Speed Dial for additional information on Personal Speed Dial.

Telephone Differences

Direct-Line Consoles

A system operator with a digital Direct-Line Console (DLC) can use all the Directory features.

Queued Call Consoles

To dial extensions or telephone numbers with the touch of a button, Directory features must be used. QCC operators cannot use Auto Dial.

Directory features can be used for transferring calls. If a system operator releases the call immediately after pressing the button for the listing, the caller hears the dial tone plus the touch-tones for the dialed digits. If the system operator waits until after dialing begins, the caller does not hear the dial tone and dialed digits.

Other Multiline Telephones

Analog Multiline or MLX-10 Telephones

A user with an analog multiline telephone or with an MLX-10 telephone cannot use the Extension Directory feature or the Personal Directory feature but can dial the listings in the System Directory by dialing the System Speed Dial codes assigned to the listings.

MLX-20L Telephones

While a Personal Directory on an MLX-20L telephone is being programmed, the user cannot receive calls (the caller hears a busy signal) but can still hear the telephone ringing. In Release 1.0, ringing is continuous, as in a normal call. In Release 1.1 and later, ringing occurs at 20 second intervals.

To use the System or Extension Directory feature, an MLX-20L telephone user presses the **Menu** button, then selects *Directory* from the display, then selects either type of directory from the display. The user then selects a range of letters from which to begin the search. The display shows the first seven listings from the directory that begin with the first letter in the range.

To scroll through the listings, the user selects *Next Page* (the next seven entries are shown) or *Prev Page* (the previous seven entries are shown) from the display. To display the telephone number associated with an individual listing, the user selects *Show Number* from the display (*Show Number* is highlighted) and presses the button next to the listing. To exit the *Show Number* function, the user selects *Show Number* again (the highlight is removed from *Show Number*). To dial a number for a listing shown on the display, the user presses the button next to the listing.

To use the Personal Directory, an MLX-20L telephone user presses the **Home** button; a QCC operator presses the **Directory** button from the Home screen. If the user has programmed listings to appear on the Home screen, the first eight listings (six listings for a QCC system operator) are shown. To see the second eight listings (six listings for a QCC system operator), the user selects *Next Page*. To select listings by using a range of letters, the user presses the **Next Page** button from the Home display twice and uses the same procedure to search for listings as for System and Extension Directories. To dial a number for a listing shown on the display, the user presses the button next to the listing.

NOTE:

The telephone number for a tagged Personal Directory listing is shown by using *Show Number*. A tagged Personal Directory listing is a listing that has been specifically designated during programming to suppress the telephone number from the display when the number is dialed using the display.

MLX-28D and MLX-10D Telephones

To use either the System or Extension Directory, the MLX-28D or MLX-10D user presses the **Menu** button, then selects *Directory* from the display, then selects either type of directory from the display. To begin the search, the user spells the name of the directory entry by using the dial pad. For example, to spell the name Wayne, the user dials **92963** and selects *Enter* from the display; the name with the closest match is displayed.

The user can scroll through the listings by selecting *Prev* (the previous listing is shown) or *Next* (the next listing is shown). To start a new search, the user selects *New*. To dial the number for the name currently shown on the display, the user selects *Dial* and the number is automatically dialed. If the display of the telephone number has not been suppressed, **>** appears on the far right of the display and indicates that the user can press the **More** button to see the number dialed.

Single-Line Telephones

Single-line telephone users cannot use the Extension Directory feature or the Personal Directory feature but can dial the listings in the System Directory by dialing the System Speed Dial codes assigned to the listings.

Feature Interactions

| | |
|---|---|
| Account Code Entry and Forced Account Code Entry | An MLX telephone user can program an account code on an outside Auto Dial button or (on MLX-20L telephones) as a listing in a Personal Directory. The user can enter the account code by activating Account Code Entry and selecting the directory entry containing the actual account code from the display. |
| Allowed Lists | A user with an outward-restricted telephone cannot dial an outside number by using a Personal Directory or System Directory listing (excluding a marked System Directory listing) unless the number is on an Allowed List assigned to the telephone. A user with a toll-restricted telephone cannot dial a toll number by using a Personal Directory or System Directory listing (excluding a marked System Speed dial code) unless the number is on an Allowed List assigned to the telephone. |
| Automatic Route Selection | In Hybrid/PBX mode, System Directory and Personal Directory numbers can include the Automatic Route Selection (ARS) dial-out code. |
| Calling Restrictions | Using a marked System Directory listing to dial a number overrides any calling restrictions (such as toll or outward restrictions) assigned to the telephone. |
| Conference | The Extension, Personal, and System Directory features can be used to set up conference calls. Press the Conference button to enter the Flash special character in a directory listing telephone number. |
| Disallowed Lists | A user cannot dial an outside number by using a Personal Directory or System Directory listing if the number is in a Disallowed List assigned to the telephone, unless the number is dialed by using a marked System Directory listing. |
| Display | MLX display telephone users can use the Extension and System Directories. Users search for stored listings on the display and automatically dial the listing by pressing the corresponding button. MLX-20L telephone users also can create a Personal Directory. When a user dials a number using a Directory feature, the digits dialed are shown on line 1 of the display. |
| Drop | Press the Drop button to enter the Stop special character in a directory listing telephone number. |

| | |
|--------------------------|---|
| Hold | Press the Hold button to enter the Pause special character in a directory listing telephone number. |
| Labeling | Labeling is used to enter names of people, groups, and locations associated with the extensions in the system that are stored as listings in the Extension Directory. Labels (such as the name of a person or a business) associated with System Speed Dial numbers are also entered by using the Labeling feature and stored as listings in the System Directory. Labels for trunks are shown on the display when outside calls are made and received. |
| Last Number Dial | Last Number Dial does not store a number dialed by using a Personal, Extension, or System Directory. |
| Messaging | When the Extension Directory is used to call a co-worker with a posted message, the posted message is not displayed on the caller's telephone. |
| Personal Lines | A System or Personal Directory can be used to dial numbers on a Personal Line. An Extension Directory is used only for inside calls and cannot be used to dial calls on a Personal Line. |
| Pools | When a pool dial-out code is included in the telephone number for a Personal or System Directory listing, a pause character may be needed immediately following the pool dial-out code depending on the local telephone company. Pause characters are entered by pressing the Hold button. |
| Recall | Press the Conference button to enter the Flash special character in a directory listing telephone number. |
| Saved Number Dial | Saved Number Dial does not store numbers dialed by using a Personal, Extension or System Directory listing. |

Display

At a Glance

| | |
|--------------------|---|
| Users Affected | Telephone users, operators |
| Mode | All |
| Telephones | MLX display telephones, MERLIN® II System Display Console, BIS-22D, BIS-34D |
| System Programming | See Labeling |

Description

The following display telephones can be connected to the communications system:

- MLX display telephones:
 - MLX-20L (7-line by 24-character display)
 - MLX-28D (2-line by 24-character display)
 - MLX-10D (2-line by 24-character display)
- Analog multiline display telephones:
 - MERLIN II System Display Console** (2-line by 40-character display)
 - BIS-34D (1-line by 16-character display)
 - BIS-22D (1-line by 16-character display)

The telephone display provides prompts, messages, and menu selections that help users handle calls, use features, and program their telephones. In addition, the display of the MLX-20L telephone supports system programming when the telephone is used as the system programming console. (For information on system programming displays, see Programming.)

The level of support the display provides depends on whether the user has an MLX telephone or an analog multiline telephone:

- MLX display telephones provide menu-driven telephone programming and allow users to select and use features from the display.
 - In a Release 1.1 (or later) system, MLX telephones can display information in English, French, or Spanish. (The system can be programmed to provide all displays to MLX telephones in one of these languages; each MLX telephone can be programmed to operate in English, French, or Spanish independently of the system language.)
- The displays on analog multiline telephones provide call-handling information; they do not support menu-driven telephone programming, selection of features from the display, or operation in languages other than English.

Table 15 shows examples of call-handling displays.

Table 15. Call-Handling Displays

| Making Calls | Sample Displays | |
|---|------------------|----------------|
| | Analog Multiline | MLX |
| When a user makes a call, the digits appear on the display as they are dialed by using the dialpad or using any of the quick dialing features (Auto Dial, Speed Dial, Directory, Last Number Dial, or Saved Number Dial). | 1234 | 1234 |
| If the user dials an extension and labels are programmed, the name is displayed after all the digits are dialed. | Yvonne | Yvonne |
| NOTE: If a user calls an extension and the person at that extension transfers the call, the first user's display is not updated with the number for the transfer destination. Similarly, if a user calls an extension and the call is answered at a Shared SA button, the caller's display shows the principal owner's extension, not the answering extension. | | |
| If a user dials 0 to reach a system operator or dials the Listed Directory Number (the QCC queue extension), the display identifies the number as the system operator. When the call is sent immediately to a system operator without waiting in the QCC queue, the extension or label for the system operator receiving the call is shown instead. | Operatr | Operatr |
| When a user goes off-hook on a Personal Line or Pool button, the display shows the label (if programmed) for the line or pool that was selected. On MLX telephones, this information remains on the display. On analog multiline telephones, the line label is erased when the user begins dialing. If the user dials more than 15 digits on an MLX telephone or more than 16 digits on an analog multiline telephone, the remaining digits are shown on Line 2. | 5551234 | FX-NYC 5551234 |

Continued on next page

Table 15. - Continued

| Receiving Calls | Sample Displays | | |
|--|------------------------|------------------|----------------|
| | Analog | Multiline | MLX |
| For inside calls, the display shows the name of the caller (if labels have been programmed) and/or the extension number. on analog multiline telephones, the display also shows if the call is a voice call (V) or a ringing call (R). | Michel - Ext R | | Michel - x1234 |
| For outside calls, the display shows the line that the call came in on. If station identification (SID) and/or automatic number identification (ANI) are available, the number of the caller is shown on Line 2 on MLX telephones. This information is provided for transferred, forwarded, Calling Group, and incoming calls. | FX-NYC | | FX-NYC |
| | No display | | FX-NYC 5551234 |
| NOTE: For calls received on tie trunks, the display shows information only if the user preselects the button. | | | |
| For certain types of incoming calls, the display also shows the type: | | | |
| Transfer | Transfer | Receive | Transfr |
| Return from Transfer | Trf Ret- | | Return |
| Coverage | Cvr | | Cover |
| Forwarded | Forward | | Forward |
| Returning Callback | Callbck | | Callbck |
| Group Calling | No display | | GrpCl |

MLX Display Telephones

Four types of screens appear on both the 7-line and the 2-line display:

- Home screen
- Menu screens
- Feature screen
- Inspect screens

The display ordinarily shows the Home screen; at other times, users access the Home, Menu, Feature, and Inspect screens by pressing the corresponding imprinted **Home**, **Menu**, **Feature**, or **Insp** button.

The imprinted **More** button is used to read screens that include too much information to fit on the display all at once. The availability of more information is indicated by the appearance of a > character on the right side of the screen. On the 7-line x 24-character display, in a Release 2.0 (or later) system, this More symbol appears on Line 1, next to the **More** button. In a Release 1.0 or Release 1.1 system, the More symbol appears on Line 7.

Home Screen

The Home screen, illustrated in Figure 8 and Figure 9, is the display's home base. It remains on the display unless the user selects another screen. If the user has programmed a Posted Message and no call is active on the telephone, Line 1 shows the Posted Message. When the user makes or receives a call, Line 1 is overwritten with call-handling information, such as a number being dialed, the name or number of a caller, and the type of incoming call. In a Release 2.0 (or later) system, the date is shown as pictured in Figure 8 and Figure 9; in a Release 1.0 or Release 1.1 system, the date is shown as 3/15.

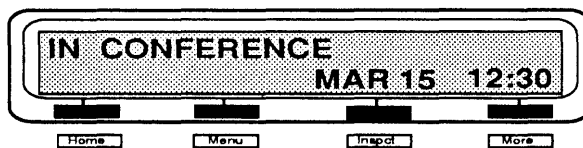


Figure 8. 2-Line Display Home Screen

When the telephone is idle, Line 2 of the Home screen shows the date and time. If the timer is running or the user has programmed an **Alarm** button, this information is also shown on Line 2.

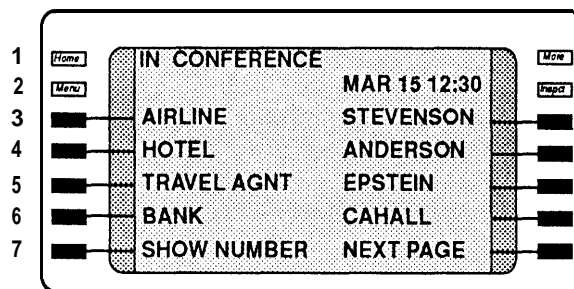


Figure 9. 7-Line Display Home Screen

On an MLX-20L telephone, two pages of listings from the user's Personal Directory (a total of 16 entries) can be programmed to appear on the Home screen. The Queued Call Console (QCC) does not have this capability.

If the user activates features, information on the Home screen is replaced with prompts and feedback. In general, prompts appear on Line 1 and feedback appears on Line 2.

Menu Screen

The Menu screen, illustrated in Figure 10 and Figure 11, lists features and functions that are used through the display, such as Alarm Clock and Directories. For all display users except the QCC system operator, the Menu screen also provides access to the extension programming function used to program the telephone.

The Menu screen is accessed by pressing the imprinted **Menu** button next to or below the display. Additional menu choices on the 2-line display are accessed by pressing the imprinted **More** button. After the user has made a selection from the menu by pressing the button next to the selection (on the 7-line x 24-character screen) or below the selection (on the 2-line x 24-character screen) a submenu, feature screen, or data-entry screen appears. After programming has been completed, the Menu screen reappears. To exit from the Menu screen, the user must press the **Home** button.

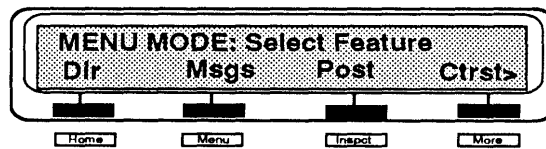


Figure 10. 2-Line Display Menu Screen

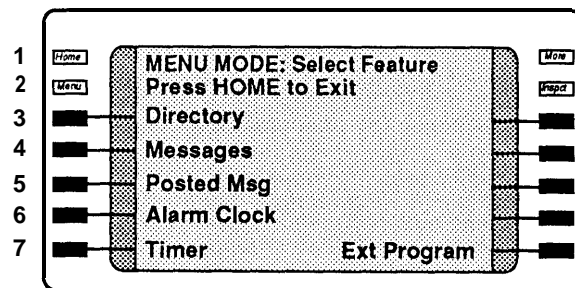


Figure 11. 7-Line Display Menu Screen

NOTE:

The `Ext Program` option is not included on the Menu screen on a QCC.

Feature Screen

The Feature screen provides quick access to commonly used features. When the user presses the **Feature** button, one of four Feature screens with feature names appears on the display. The feature names shown depend on what the user is doing and how the system and the user's extension are programmed, as shown in Table 16.

To select a feature, the user presses the button next to or below the feature name on the Feature screen. (It may be necessary to press **More** to access the desired feature on a 2-line display.) Once selected, the feature is activated unless more information is required. If more information is required, the user is prompted to enter it. For example, if the user chooses the Account Code Entry feature, the display prompts the user to enter an account code. Once the user enters the account code correctly, the Home screen returns.

Table 16 lists the features users see on the Feature screen depending on their current calling activity.

Table 16. Feature Screen Options

| <u>User's Telephone...</u> | <u>Feature Options</u> | <u>2x24 Display</u> | <u>7x24 Display</u> |
|---|------------------------|---------------------|---------------------|
| Is on-hook or has a dial tone on an inside line | Last Number Dial | Last# | LastNumDial |
| | Pickup Group* | PkupG | Pickup Grp |
| | Pickup | Pkup | Pickup |
| | Loudspeaker Page* | LdsPg | Louspkr Pg |
| | Account Code | Acct | AccountCode |
| | Follow Me | FlwMe | Follow Me |
| Has reached a busy extension | Selective Callback | CbckS | Cback Sel |
| | Barge-In* | Barge | Barge In |
| | Leave Message | LvMsg | Leave Msg |
| | Camp-On* | Camp | Camp On |
| Is ringing at an extension or connected to an inside call | Leave Message | LvMsg | Leave Msg |
| | Barge-In* | Barge | Barge In |
| | Park* | Park | Park |
| | Camp-On* | Camp | Camp On |
| Is connected to an outside line | Last Number Dial* | Last# | LastNumDial |
| | Park* | Park | Park |
| | Camp-On* | Camp | Camp On |
| | Account Code | Acct | AccountCode |
| | Follow Me | FlwMe | Follow Me |

* See Note.

NOTE:

- `Pickup Group` appears on the display only if the telephone is part of a Pickup Group.
- `Barge-In` appears only on system operator consoles.
- `Loudspeaker Page` appears only if a loudspeaker paging system has been programmed.
- `Last Number Dial` and `Park` do not appear on a QCC.
- `Camp-on` can be used only to complete a transfer to an inside extension.

Inspect Screens

The Inspect screen, illustrated in Figure 12 and Figure 13, appears when the user presses the **Inspect** button and then presses a line button. Two kinds of information can appear:

- If the button is associated with a call, calling information is displayed. If the user is already on a call and another call arrives, pressing **Inspect** and the line button with the new call displays information about that call without interrupting the first call.
- If the button is not associated with a call, the line or feature programmed on the button is displayed, with the exception of Last Number Dial and Saved Number Dial:
 - In a Release 2.0 (or later) system, inspecting a programmed Last Number Dial or Saved Number Dial button displays the number stored on the button (if the button has been used).
 - In a Release 1.0 or Release 1.1 system (and in a Release 2.0 system if the button has not yet been used to store a number), the Inspect screen shows the name of the feature on these buttons.

To exit from the Inspect screen, the user must press the **Home**, **Feature**, or **Menu** button.

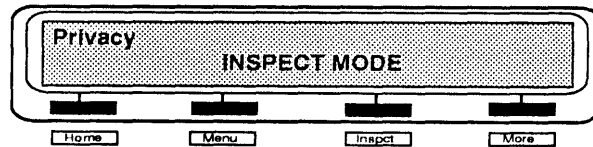


Figure 12. 2-Line Display Inspect Screen for Programmed Button

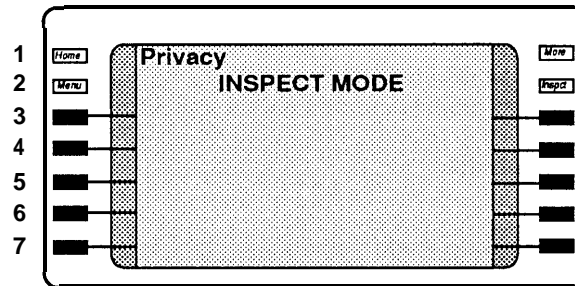


Figure 13. 7-Line Display Inspect Screen for Programmed Button

Analog Multiline Display Telephones

The following types of information appear on the 1-line x 16-character or 2-line x 40-character display of an analog multiline display telephone:

- **Call-handling Information** includes telephone numbers as they are dialed, the name or number of a caller, and the type of incoming call.
- **Feature programming support** allows the user to see what features have been programmed on buttons.
- **Prompts and feedback** include prompts for information (such as an account code) and feedback such as confirmation of feature activation.
- **Posted Message and Leave Word Calling message** allow the user to see messages from other telephone users and system operators.
- **Timekeeping functions** include an alarm clock and a built-in timer, and allow the user to set the date and time that appear on the display.

Analog multiline display telephones do not offer menu-driven telephone programming and do not allow users to select and use features from the display.

Considerations and Constraints

The date and time shown on MLX telephones is controlled by the processor module in the control unit. When the date or time changes, the control unit sends the message to MLX telephones one at a time, which can cause a slight difference in time and/or date displayed on each telephone.

Users with analog multiline telephones with displays must set the time and date at their individual telephones.

Feature Interactions

| Feature | Description | Sample Displays | |
|---------------------------|--|------------------|----------------|
| | | Analog Multiline | MLX |
| Account Code Entry | When a user activates the feature, the display prompts the user to enter an account code. | Acct: | Acct: |
| | As the code is dialed, it appears on the screen next to the prompt. | Acct: 123456 | Acct: 123456 |
| Alarm Clock | MLX telephone users program the Alarm Clock feature from the Menu screen. Analog multiline telephone users set the alarm by using the timekeeping buttons next to the display. Once the alarm is set on either type of telephone, a bell appears on the display. | 5-08 🕒 | May 08 🕒 12:00 |
| | In a Release 1.0 system, the bell appears next to the time, not the date, and on MLX telephones, the date appears as 05/08 . On MLX telephones, the ringer and the LEDs are turned off when Alarm is selected from the display. If the user is on a call and selects Alarm, the call is dropped. | | |
| Auto Dial | When a user presses a programmed Auto Dial button, the digits appear on the display as if the user were dialing them from the dialpad, and the number is dialed automatically. (For a list of special characters that can be used in dialing strings, see Appendix G.) If the Stop character is the last character in the dial number, it is not displayed when the user presses the Auto Dial button. The user must press the Auto Dial button to complete dialing. | 5551234 | 5551234 |

| Feature | Description | Sample Displays | |
|-----------------------------|---|------------------|---|
| | | Analog Multiline | MLX |
| Barge-In | MLX telephone users see a message on the display when they use Barge-In. If Barge-In is denied, the message does not appear. | No display | Barge In |
| | The extension receiving the call also sees a message indicating who initiated the Barge-In call. The message remains on the display until the person hangs up. | No display | Barge In: Juanita |
| Calendar | See Date and Time. | | |
| Callback | When a call is queued using Automatic Callback on an MLX or analog multiline telephone or using Selective Callback on an analog multiline telephone, the display shows a feedback message. | Call is Queued | Queued Maria 1234 Call Is Queued |
| | When an MLX telephone user uses Selective Callback, the display prompts the user to dial the telephone number. After the number is dialed, the display provides the same feedback as on an Automatic Callback call. | No display | Dial Phone Number |
| | When the queued call rings at the user's telephone, the display indicates that the call is a returning Callback call. | Callbck 1234 | Cback Maria 1234 |
| Calling Restrictions | When a restricted MLX telephone user tries to dial a number that is restricted, the user sees a message on the display. | No display | Call Denied |
| Call Waiting | When a user has a call waiting, a message appears on the display. | Call Waiting | Call Waiting |
| Camp-On | After Camp-On is activated, the MLX display shows a feedback message. | No display | Camp On: Yvonne |
| | On the QCC only, returning camped-on calls are identified by call type and by the name and extension number of the person that the call was transferred to. The second line of the QCC display also shows the caller information. | No display | CampRet Jorge x1234 Caller: Elaine x1235 |

| Feature | Description | Sample Displays | |
|--------------------------------------|--|------------------|--|
| | | Analog Multiline | MLX |
| Conference | As with any other call, the dialed digits appear on Line 1 of the display as a user sets up a conference call. | 1234 | 1234 |
| | On MLX telephones, Line 1 shows the number of conference participants. | No display | Conference: 4 |
| | In a Release 1.1 (or later) system operating in Hybrid/PBX mode, an SA button is selected automatically (if one is available) when the user initiates a conference call. In Key or Behind Switch mode, Conference operation is the same as in a Release 1.0 system: the user must select a line button. | | |
| | If an SA button is not selected automatically, the MLX telephone user is prompted to select a line. | No display | Select a Line |
| | After a line is selected (by the system or the user), the MLX telephone display prompts the user to dial the next participant. | No display | Dial, then Press Conf |
| | The display also prompts the user to drop a conference participant after the Drop button is pressed and then shows the updated conference information on Line 1 and the dropped line or extension on Line 2. | No display | Drop: Select Party Conference: 3 Maria Dropped |
| Coverage | When a call is sent to Coverage, the person who answers the call sees a message on the display indicating who the call was intended for and the reason the call was sent to Coverage: | | |
| | All Telephones: | | |
| | No Answer | Cov No A Juan | Cover Juan No Ans |
| | Busy | Cov Bsy Juan | Cover Juan Busy |
| | Do Not Disturb active | Cov DND Juan | Cover Juan DND |
| | MLX telephones (additional reasons): | | |
| Invalid/unknown DID number | No display | DID#? | |
| Invalid/unknown Remote Access number | No display | DISA#? | |

| Feature | Description | Sample Displays | |
|--------------------------------|---|---|---|
| | | Analog Multiline | MLX |
| Coverage (continued) | MLX telephones also show the caller's information on Line 2 of the Home screen. | No display | Caller: FX-NYC Trk825 |
| Date and Time | An analog multiline telephone user can set the date and time on the display. On MLX telephones, the date and time are controlled by the system time. In a Release 1.1 (or later) system, when the system or MLX display telephone is set for operation in French or Spanish, the date is displayed as <i>day month</i> and the time uses a 24-hour clock. In a Release 1.0 system, the date is displayed as <i>month/day</i> on an MLX display telephone. | 3:00p We 4-01 | Apr 01 3:00 01 Avr 15:00 01 Abr 15:00 4/1 3:00 |
| Directories | When a number is dialed using a Directory, the digits dialed are shown on Line 1 of the display. | No display | (For information, see Directory.) |
| Direct Station Selector | When a system operator with one or two DSSs connected to an MLX telephone presses the Inspect button and then the Page button, a message appears that indicates the page number and the first extension number in the range. | No display | Page 1: 100 |
| Do Not Disturb | When a user with Coverage turns on Do Not Disturb and has Coverage receivers, the receiver who answers the call sees a message showing that the call was redirected because the sender has Do Not Disturb on. The MLX telephone with Do Not Disturb on shows a Do Not Disturb message. In a Release 2.0 (or later) system, an inside caller to an extension with Do Not Disturb on sees a Do Not Disturb message. | Cov DND - Agnes No display DO NOT DISTURB | Cover Ruben DND DO NOT DISTURB DO NOT DISTURB |

| Feature | | Description | Sample Displays | |
|---|------------|---|------------------|---|
| | | | Analog Multiline | MLX |
| Extension | Status | Hotel/Motel mode: | | |
| | | When a supervisor changes a room's ES status, the supervisor is prompted to select the room. | No display | Select Room |
| | | When the room has been selected and the supervisor has selected ES1, ES2, or ES3, a confirmation is displayed. | No display | Checked Out Available Occupied |
| | | <ul style="list-style-type: none"> ■ ES1 = Checked Out ■ ES2 = Available ■ ES3 = Occupied | | |
| | | When the guest or maid changes a room's ES state to ES1 or ES2, a confirmation is displayed. | No display | Checked Out Available |
| | | Calling Group/CMS mode: | | |
| | | When the supervisor position is put into Supervisor Mode, the supervisor is prompted to press Hold . After the supervisor presses Hold , the new status is confirmed. | No display | PressHold- EnterGrpCl/CMS Entered GrpCl/CMS Supvr |
| | | When the supervisor position is taken out of Supervisor Mode, the supervisor is prompted to press Drop . After the supervisor presses Drop , the new status is confirmed. | No display | PressDrop- ExitGrpCl/CMS Exited GrpCl/CMS Supvr |
| | | When the supervisor changes an agent's ES state, the supervisor is prompted to select the agent. | No display | Select Agent for ACW Select Agent to Log In Select Agent to Log Out |
| | | When the agent has been selected, a confirmation is displayed. | No display | After Call Work Available Unavailable |
| if the ES state is changed at the station, a confirmation is displayed. | No display | After Call Work Available | | |
| | | Calling Group mode only: | | |
| | | When an extension logs into or out of a Calling Group, a confirmation is displayed. | No display | Available Unavailable |
| Follow Me | | When Follow Me is turned on or off, MLX telephone users see a prompt followed by a confirmation. | No display | Follow from: Cancel from: Signed IN: Ines Signed OUT: Ines |

| Feature | Description | Sample Displays | |
|---------------------------------|--|------------------|---------------------------------|
| | | Analog Multiline | MLX |
| Follow Me (continued) | If the station from which calls are being forwarded is an MLX display telephone, the user sees a message indicating that calls are being forward. | No display | Forward to: Jeanne |
| | If the MLX telephone user enters an invalid destination, the display clears. If the analog multiline user enters an invalid destination, an error message appears. | Error | No display |
| Forward | When an MLX telephone user turns on Forward, the display prompts for the extension. After entering the extension, a confirmation is displayed. | No display | Forward to: Forward to: Juan |
| | A user receiving a forwarded call sees a message indicating who forwarded the call. | No display | Forward from Juan |
| | For outside calls, Line 2 shows the line the call came in on and, if ANI is available, the caller's number. | No display | Outside 555-1234 |
| | For inside calls, Line 2 shows the caller's name and extension. | No display | Caller: Pablo x1234 |
| | On MLX telephones, when a user forwards calls to an outside number (Remote Call Forward), the display prompts the user to enter the telephone number. | No display | Forward to: |
| | On MLX and analog multiline telephones, the digits appear on the display as the number is dialed. | 12015551234 | 12015551234 |
| | On an MLX telephone, a confirmation is displayed. | No display | Forward to: 12015551234 |
| Group Calling | Calling Group agents with MLX telephones see feedback messages on the display when they log in to the Available state. | No display | Available |
| | When a Calling Group supervisor with an MLX telephone logs agents in or out, a message appears on the supervisor display and on the group member's display. | No display | Available Unavailable |

| Feature | Description | Sample Displays | |
|-------------------------------------|--|------------------|---|
| | | Analog Multiline | MLX |
| Group Calling (continued) | After pressing either the Available or Unavailable button or dialing the feature code, supervisors with MLX telephones are prompted to indicate which group member they want to log in or out. | No display | Select Agent to Log In Select Agent to Log Out |
| | When a group member with an MLX telephone receives an outside call for the Calling Group, the type of call is identified on the display along with the label for the line the call came in on. If ANI is available, the number of the caller is shown on Line 2 on MLX telephones. Analog multiline telephone users see only the line information. | WATS | <i>[label]</i> WATS <i>[label]</i> WATS 555-1234 |
| | Any MLX telephone user can inspect the number of calls in queue by pressing Inspect and then pressing a button programmed with the Calling Group's extension. The display shows the label associated with the Calling Group and the number of calls. | No display | Group Call Sales 12 |
| Hold | When an MLX telephone user or an MLX DLC operator places a call on hold, a confirmation is displayed. | No Display | Call on Hold |
| | When a user with an MLX telephone or an MLX DLC operator has a call on hold for a longer time than the Hold Timer, a message appears on the display. | No display | Call on Hold |
| | On the QCC only, when a held call returns to the queue after the second hold reminder, it is identified by call type and by the name and extension of the system operator who put the call on hold. Line 2 of the QCC display also shows the caller information. | No display | HoldRet Eugenio x10 Caller: Mathilde x1235 |

| Feature | Description | Sample Displays | |
|-------------------------|--|--|--|
| | | Analog Multiline | MLX |
| Inspect | MLX telephone users can inspect the contents of programmed buttons by pressing Inspect and then pressing the programmed button. In most cases, the display shows the feature or line assigned to the button. (In a Release 2.0 or later system, inspecting a Last Number Dial or Saved Number Dial button shows the number stored on the button.) | No display | Account Code |
| | Users can also inspect incoming calls or calls they have put on hold. The display shows standard call information (see Receiving Calls in this table). | No display | FX-NYC (outside) Miguel x1234 (inside) |
| | If a user inspects a line that someone else is using, the display shows that the line is in use. | No display | In Use |
| Last Number Dial | When a user presses a programmed Last Number Dial button, the digits appear on the display as if the user were dialing them from the dialpad. | 5551234 | 5551234 |
| | In a Release 2.0 (or later) system, inspecting a Last Number Dial button shows the number stored on the button. | No display | 5551234 |
| Messaging | When a user sends a message to another telephone, the display shows a feedback message. | Msg Sent Carlos Cannot Send Message Box Full | Msg Sent to: Carlos Cannot Send Message Message Box Full |
| | When a user tries to retrieve messages and the message box is empty, a message appears to indicate there are no messages. | No Messages | No Messages |
| | When a user has a message, the display shows the name or extension of the caller and, on MLX telephones, the time and date the message was left. Messages can be sent from inside extensions, by the system operator, by a fax machine, or, if the telephone has voice mail, by outside callers. | | |

| Feature | Description | Sample Displays | |
|---------------------------------|---|----------------------|-----------------------------------|
| | | Analog Multiline | MLX |
| Messaging (continued) | The display indicates the sender of the message. On MLX telephones, an unread message is marked with an asterisk (*). On analog multiline telephones, an unread message is also marked with an asterisk, but no message information is shown. Messages can be of the following types: | | |
| | Unread message | * | *Jose 10:43 06/15 x7846 |
| | Co-worker | Call Rosa | Rosa 11:03 06/15 x1625 |
| | Voice mail message | V | VMS 11:03 06/15 x1234 |
| | System Operator | A | ATT OPERATOR 11:03 06/15 x1223 |
| | Fax | F | FAX 11:03 06/15 x1236 |
| | NOTE: The type of message does not allow a Calling Group message-waiting receiver to distinguish between a message left for the Calling Group and a fax or personal message. | | |
| | A users with a display telephone who calls an extension with a Posted Message see the message on the display. | IN A MEETING | IN A MEETING |
| | When an operator using an MLX telephone sends or removes a message with the Send/Remove message feature, the operator is prompted for the number. | No display | Dial Phone Number: |
| | After the number is dialed, a confirmation is displayed. | Msg Sent Manuel | Msg Sent to: Manuel |
| | Msg Rmvd Anita | Msg Rmvd from: Anita | |

| Feature | Description | Sample Displays | |
|----------------------|--|--------------------------|--------------------------------|
| | | Analog Multiline | MLX |
| Night Service | When a system operator with an MLX telephone uses a programmed Night Service button to turn on Night Service, a confirmation is displayed. | No display | Night Service ON |
| | If the operator must enter a password to turn Night Service on and off, the display prompts the operator for the password. | No display | Enter Password: |
| | No message is displayed when the operator turns on Night Service by using a feature code or when Night Service is off. | | |
| Paging | An MLX telephone user who uses Group Page sees a message on the display indicating the number of the Paging Group. | No display | Paging 793 |
| Park | When a call is parked, a confirmation is displayed. | Parked Anita | Parked: Anita |
| | On QCCs, returning parked calls are identified by call type and the name or extension number of the operator who parked the call. | No display | ParkRet Juan |
| | Line 2 of the QCC display also shows the caller information. | No display | Caller: Anita x1235 |
| Pickup | When an MLX telephone user activates Pickup, a prompt appears on the display. (The prompt is not displayed if a button programmed for a specific line or extension is used.) | No display | Pickup Line/Ext: |
| | After the user enters the line or extension number to pick up the call, a confirmation message is displayed. | No display No display | Pickup: Outside Pickup: Joe |
| | If the call cannot be picked up, a feedback message is displayed. | Cannot Pickup | Cannot Pickup Call |

| Feature | Description | Sample Displays | |
|-------------|---|------------------|---|
| | | Analog Multiline | MLX |
| PRI | When an outgoing call is dialed on a PRI line, an analog multiline telephone display shows the Called Party Number. An MLX telephone display identifies the call as a PRI call and shows the Called Party Number. | 5551234 | PRI 5551234 |
| | When an incoming call is received on a PRI line, the display on an analog multiline telephone identifies the call as a PRI call; no telephone number is shown. The display on an MLX display telephone shows the PRI identifier and the Calling Party Number; the user can press the More button to see the PRI facility number and the Called Party Number on the second screen of the display. | PRI | PRI 2125721234 801 9085551234 |
| | The display of a Calling Group member with an MLX telephone who receives a call on a PRI line shows a Group Calling identifier and the Calling Party Number; the user can press the More button to see the PRI facility number and the Called Party Number on the second screen of the display. An analog multiline telephone display shows only the PRI identifier. | PRI | GrpC1 8005551234 801 2125726789 |
| | The display of an MLX transfer destination telephone identifies an incoming call as a Transfer and shows the Calling Party Number. The user can press the More button to see the original Called Party Number on the second screen of the display. The display of an analog multiline telephone shows only that a transferred call has been received. | Transfer Receive | Transfr 2125556789 called: 8005551234 |
| Programming | When an analog multiline telephone user enters extension programming, a confirmation appears on the display. An MLX telephone user sees the first Extension Programming screen. | Program Mode | Extension Program 10 (HOME to Exit) Start |

| Feature | Description | Sample Displays | |
|-----------------------------------|---|---|--------------------------------------|
| | | Analog Multiline | MLX |
| Programming (continued) | If the user presses a button that is already programmed, the name of the feature appears on the display. | Camp On | Camp On |
| | If the button is not programmed, the display shows that the button is blank. | Blank | Blank |
| | Any digits dialed during programming appear on the display on an analog multiline telephone. | 5551234 | No display |
| | Status feedback messages are shown on analog multiline telephones when features that affect telephone operation are programmed. Status messages are not shown on MLX telephones. (For more on extension programming, see Appendix C.) | Voice announce On/Off Call Waiting On/Off Automatic Callback On/Off Shared SA Ring On/Off Abbreviated Ring On/Off Coverage Inside On/Off | No display |
| Recall | When an MLX telephone user presses a programmed Recall button while on an outside line, the line information is re-displayed just as if the user had gone off-hook on the line. | No display | FX-NYC |
| Reminder Service | When Reminder Service is activated, either the previously set time or an indication that no time has been set is displayed. | 7103: 9:15a 7103: No Rmdr Set | 7103: 9:15a 7103: No Reminder Set |
| | If the user enters a new time, the display changes with the first digit. | Time: 12:30p | Time: 12:30p |
| | When the time is set, a confirmation is displayed. | 7103: 12:30p | 7103: 12:30p |
| | When a reminder call alerts a station, the display indicates a reminder call. | Rmdr Call | Reminder Call |
| | When a station cancels a reminder, a confirmation is displayed. | Rmdr Off at 7103 | Reminder Off: Miguel |

| Feature | Description | Sample Displays | |
|--|--|------------------|--------------------------------------|
| | | Analog Multiline | MLX |
| Reminder Service (continued) | When an operator sets or cancels a reminder for an extension, the attendant is prompted for the extension. | Rmdr Set | Press DSS Key to Select Reminder Set |
| | | Rmdr Off | Press DSS Key to Select Reminder Off |
| Remote Access | Calls received via Remote Access show standard call information for outside calls, including the caller's number if ANI or SID is available. | WATS Trk 825 | WATS Trk 9999 WATS 555-1234 |
| | If a Remote Access call is sent to Coverage because an invalid number was dialed, an MLX telephone user who receives the call sees a message. | No display | Cover DISA#? |
| Saved Number Dial | When an MLX telephone user presses a programmed Saved Number Dial button, a confirmation is displayed. | No display | Number Saved |
| | When a user dials a number by pressing a programmed Saved Number Dial button, the digits appear on the display as if the user were dialing them from the dialpad, | 5551234 | 5551234 |
| | In a Release 2.0 (or later) system, inspecting a Saved Number Dial button shows the number stored on the button. | No display | 5551234 |
| Timer | Display telephones have a built-in timer that allows the user to time telephone calls or other events. The timer appears on Line 2 of the display and counts to 59 minutes and 59 seconds, then resets to zero and continues counting. | 39:15 | 39:15 |

| Feature | Description | Sample Displays | |
|-----------------|--|----------------------------------|---|
| | | Analog Multiline | MLX |
| Transfer | When an MLX telephone user presses Transfer , the display prompts the user to dial the extension number. | No display | Transfer To: |
| | When an MLX telephone user initiates a transfer on a voice-announced button (SA Voice or ICOM Voice), the user is prompted to enter the extension. | No display | Announce To: |
| | The display shows the digits as they are dialed. When all digits have been dialed, the display shows the name of the person if labels are programmed. | 1234 No display | 1234 Jose x1234 |
| | On an MLX telephone, when the transfer is completed, a confirmation is displayed. | No display | Call Transferred |
| | Calls returning from transfer are identified by call type and by the name and extension the call was transferred to. Line 2 of the MLX telephone display also shows the caller information, | TrfRet- Charles No display | Return Charles x1234 Caller: Anna x1235 |
| | When an MLX telephone user receives a transferred call, the display shows the type of call and the caller information on Line 1. When an inside call is being transferred, the extension or name is shown. When an outside call is being transferred, the line the call came in on or the caller's telephone number (if ANI or SID is available) is shown. The transfer originator is shown on Line 2. | No display | Transfr Angela Transfr by Miguel Transfr 555-1212 Transfr by Maria |
| | When an MLX telephone user does not complete a transfer, for example, because Do Not Disturb is on at the destination extension, the call returns to the user's telephone and call information is displayed. The reason for the incomplete transfer is not indicated. | No display | Incomplete Transfer Caller: Susan x1235 |

Do Not Disturb

At a Glance

| | |
|-------------------|---|
| Users Affected | Telephone users, DLC operators |
| Reports Affected | Extension Information |
| Mode | All |
| Telephones | All except QCC and single-line telephones |
| Programming Code | *47 |
| MLX Display Label | DoNotDisturb [DND] |

Description

Do Not Disturb prevents calls from ringing and prevents paging over a user's speakerphone. When the feature is turned on and the user receives an outside call, the caller hears ringback, but the user's telephone does not ring. The green LED next to the line button with the ringing call flashes to indicate an incoming call, and, if the user chooses, the call can be answered. If the feature is turned on and the user receives an inside call, the inside caller hears a busy signal. The user's telephone does not ring, and the green LED next to an **SA** or **ICOM** button does not flash.

The following types of priority calls override Do Not Disturb and cause the user's telephone to ring (the green LED also flashes):

- a call (including a transferred call) from any Coverage receiver to a sender with Do Not Disturb on
- a Barge-In call
- a returning transferred or camped-on call, or a parked call returning to a Direct-Line Console (DLC) operator
- a Callback call, notifying the user that a call to a busy extension or to a busy pool (Hybrid/PBX mode only) can be completed
- a Reminder Service call

In a Release 2.0 (or later) system, when the user turns on the feature, the system automatically posts the message `DO Not Disturb`. This message appears on the Home screen of an MLX display telephone user with Do Not Disturb turned on, and on the screen of any inside caller with a display telephone who calls that user. When the user turns off Do Not Disturb, the system automatically unposts the message. The user can also post and unpost the message by using a programmed **Posted Message** button. However, using this button only posts or unposts the message; it does not turn on or turn off the Do Not Disturb feature.

Considerations and Constraints

Do Not Disturb must be programmed onto an available button.

If a user turns on Do Not Disturb while receiving a call (either ringing or voice announced), the caller continues to hear ringback (or voice announce), but the user who turned on Do Not Disturb does not hear ringing. The Do Not Disturb feature remains on.

When the principal's Do Not Disturb is turned on, a user's calls ring at other telephones with shared Personal Lines or at Coverage receivers, but not at other telephones with **Shared SA** buttons.

Telephone Differences

Direct-Line Consoles

The green LED next to an **Auto Dial** or **DSS** button on a DLC goes on when a user turns on Do Not Disturb, indicating that the user is not available.

Queued Call Consoles

Do Not Disturb cannot be used on a Queued Call Console (QCC); Position Busy must be used instead. The green LED next to a **DSS** button goes on when a user turns on Do Not Disturb, indicating that the user is not available.

Other Multiline Telephones

Multiline telephone users turn on Do Not Disturb by pressing the programmed **Do Not Disturb** button. The green LED next to the button goes on to indicate the feature is active. To turn off the feature, the user presses the programmed **Do Not Disturb** button again. The green LED next to the button goes off to indicate the feature is turned off. Feature codes cannot be used to turn on and off Do Not Disturb. An MLX telephone user can select the feature from the display only while programming a **Do Not Disturb** button.

In a Release 2.0 (or later) system, turning on Do Not Disturb on an analog multiline or MLX-10 non-display telephone does not automatically post the **Do Not Disturb** message; the user must program a **Posted Message** button for the message to be posted automatically. In this case, when Do Not Disturb is turned on, the green LED next to the **Posted Message** button is lit automatically and the **Do Not Disturb** message is posted. When Do Not Disturb is turned off, the system automatically turns off the green LED next to the **Posted Message** button.

Single-Line Telephones

Do Not Disturb is not available on single-line telephones.

Feature Interactions

| | |
|------------------------------|---|
| Auto Dial | When a user turns on Do Not Disturb, the green LED goes on next to all Auto Dial buttons programmed with the user's extension. |
| Barge-In | Barge-in overrides Do Not Disturb. |
| Callback | Calls to a user with Do Not Disturb turned on are not eligible for Callback queuing. If the Callback originator is using Do Not Disturb, the system overrides the feature and the telephone rings when the busy extension or trunk is available. |
| Camp-On | A Camp-On call does not ring when the destination extension has Do Not Disturb turned on. |
| Coverage | When a sender turns on Do Not Disturb, calls go to Individual and/or Group Coverage receivers. Individual and/or Group Coverage calls are not sent to a receiver with Do Not Disturb turned on. If both a sender and all receivers have Do Not Disturb turned on, the call is not sent to Coverage and the caller hears a busy tone. When a sender turns on Do Not Disturb, any receivers for that sender can call the sender. |
| Display | In a Release 2.0 (or later) system, when an MLX telephone user with Coverage turns on Do Not Disturb and calls are sent to Coverage receivers, the receiver who answers the call sees a Do Not Disturb message showing that call was redirected because the sender turned on Do Not Disturb. If a display telephone user tries to transfer a call to a user with Do Not Disturb active, the display shows Do Not Disturb. |
| Forward and Follow Me | Calls are not forwarded to a user who has Do Not Disturb active; the call rings at the forwarding telephone. Activating Do Not Disturb at the forwarding telephone does not prevent calls from being forwarded. |
| Group Calling | If a calling group member uses Do Not Disturb, calls are not sent to the group member even if he or she is logged in and available. |
| Headset Options | If an MLX telephone user with Headset Auto Answer uses Do Not Disturb, any calls that override Do Not Disturb (such as Barge-In calls and Callback calls) are automatically answered. |
| Multi-Function Module | Using Do Not Disturb is not recommended because the device connected to the MFM does not have an LED to indicate when the feature is active. |

| | |
|--|--|
| Paging | Speakerphone Paging calls cannot be made to a telephone with Do Not Disturb turned on. |
| Posted Message | <p>In a Release 2.0 (or later) system, when Do Not Disturb is turned on, the system automatically posts the Do Not Disturb message. This message appears on the Home screen of an MLX display telephone user with Do Not Displayed turned on, and on the screen of any inside caller with a display telephone who calls that user. The system automatically unposts the Do Not Disturb message when the user turns off the feature.</p> <p>Users with analog multiline or MLX-10 non-display telephones must program a Posted Message button for the system to automatically post or unpost the message when the feature is turned on or off. A user can post or unpost a Do Not Disturb message by pressing a programmed Posted Message button. However, this does not turn on or off the Do Not Disturb feature.</p> |
| Reminder Service | Reminder Service calls ring at telephones with Do Not Disturb turned on. |
| Signaling | Signaling cannot be used when the destination telephone user turns on Do Not Disturb. |
| System Access/ Intercom Buttons | Do Not Disturb prevents ringing of incoming calls at SA or ICOM buttons (including Shared SA buttons) on the telephone where the feature is turned on. This also prevents calls received on the principal's SA buttons from ringing at other telephones with Shared SA buttons for that extension. |
| Transfer | Calls transferred to telephones that have Do Not Disturb turned on are returned after the Transfer Return Interval expires unless the telephone has Coverage and a receiver is available. In that case, the transferred call is sent to the receivers like any other call. |
| Voice Announce to Busy | A user with Do Not Disturb active does not receive voice-announced calls. |

Features

Drop

See Conference.

Extension Status

At a Glance

| | |
|------------------------------|--|
| Users Affected | DLC operators, hotel or Calling Group supervisors/users, Call Management System (CMS) supervisors/users |
| Reports Affected | Direct Group Calling Information SMDR System Information |
| Mode | All |
| Telephones | DLCs and Calling Group member telephones |
| Programming Code | |
| DLC | |
| Status 0 | *760 |
| Status 1 | *761 |
| Status 2 | *762 |
| Telephones (rooms or agents) | |
| Status 1 | *45 |
| Status 2 | *44 |
| Feature Code | |
| Activate Extension Status | 32 + Hold (Calling Group/CMS only) |
| Deactivate Extension Status | 32 + Drop (Calling Group/CMS only) |
| DLC | |
| Status 0 | 760 + DSS |
| Status 1 | 761 + DSS |
| Status 2 | 762 + DSS |
| Telephones (rooms or agents) | |
| Status Off | *44 (Calling Group/CMS only) |
| Status 1 | 45 |
| Status 2 | 44 |
| MLX Display Label | |
| Status 0 | ES Status,ES Off [ES,ESOff] |
| Status 1 | ES Status,ES1 [ES,ES1] |
| Status 2 | ES Status,ES2 [ES,ES2] |
| System Programming | Designate either hotel or Calling Group/CMS configuration: ● Options → Ext Status In hotel configuration, activate Extension Status on DLC: ● Extensions → More → Ext Status |
| Hardware | Printer for reports |

Description

Extension Status can be used by a system operator, a calling group or Call Management System (CMS) supervisor with a Direct-Line Console (DLC). Extension Status allows the system operator or supervisor to use the LEDs on a DLC to monitor the status of extensions differently from the standard call-handling status of available, busy, and Do Not Disturb. The red LEDs next to **DSS** buttons or the green LEDs next to **Auto Dial** buttons programmed with extension numbers are on, off, or flashing, depending on the extension's status.

The two configurations for Extension Status that can be selected during system programming and the status indicated by the LEDs are as follows:

- **Hotel:** Employees at the front desk at a hotel or motel can use Extension Status to monitor room availability and to restrict the telephones when the rooms are not occupied. Table 17 shows Extension Status 0, 1, and 2 for the hotel configuration and the associated LED status for each.

Table 17. Extension Status for Hotel Configuration

| Extension Status | LED Status | Meaning |
|------------------|------------|---|
| 0 | Off | Room is occupied and telephone is in regular call-handling state. |
| 1 | Flashing | Room is unoccupied and ready for cleaning; outside calls cannot be made from the telephone. |
| 2 | On | Room is vacant and outside calls cannot be made from the telephone. |

The hotel configuration allows different meanings to be assigned to Extension Statuses. The system restricts or unrestricts telephones based on the meaning assigned.

- **Calling Group/CMS:** A calling group or CMS supervisor can use Extension Status to monitor the availability of agents who can take calls directed to the calling group. Table 18 shows Extension Status 0, 1, and 2 for the Calling Group/CMS configuration and the associated LED status for each,

Table 18. Extension Status for Calling Group/CMS Configuration

| Extension Status | LED Status | Meaning |
|-------------------------|-------------------|--|
| 0 | Off | Telephone is signed out from the group and the member is unavailable to take calls. |
| 1 | Flashing | Used for CMS only. Telephone is in the After Call Work state; group member is unavailable to take calls. |
| 2 | On | Telephone is signed into the group; calls can be sent to the group member. |

In either the hotel or Calling Group/CMS configuration, a system operator or a calling group or CMS supervisor with a DLC can change the status of an extension either by using a programmed button or by pressing the **Feature** button and dialing a code. In addition, users in either mode with any type of telephone can change to Status 1 and Status 2. In the Calling Group/CMS configuration, users can change sign-in to the group by changing to Status 0; however, in the hotel configuration, an extension can be changed to Status 0 only from a DLC.

Considerations and Constraints

The system can be set up for either hotel or Calling Group/CMS configuration, but not for both in the same system.

In the hotel configuration, when **DSS** buttons are used to monitor status, system operators can use the **Message Status** button to see whether a system operator turned on message LEDs at the telephones. In the Calling Group configuration, Message Status shows busy/not busy status of the agents.

Since the built-in DSS field of a MERLIN II System Display Console corresponds to station jacks instead of to a range of extensions assigned to **Page** buttons as with a DSS adjunct, it is recommended that it be used for Extension Status in hotels with more than three floors. The status of the first 120 rooms is displayed, and if the hotel has more than 120 rooms, **Auto Dial** buttons can be assigned to up to 33 line buttons on the console to be used for Extension Status and for transferring calls to the rooms.

In the hotel configuration, when **Auto Dial** buttons are used to monitor the status of telephones (instead of buttons on a DSS), the green LED next to the button indicates Extension Status (0, 1, or, 2) and the red LED indicates Message Status. In the Calling Group configuration, the green LED also indicates Extension Status, but the red LED indicates busy/not busy status.

If the system is programmed for Extension Status in the hotel configuration, telephones can be changed to Status 0 (regular call handling) only from the system operator console.

Extension Status cannot be changed from rotary telephones.

In the hotel configuration, when the system restarts (for example, for maintenance) and the Calling Group type is set for Auto Logout (see Group Calling for details), extensions that are assigned Status 1 are changed automatically to Status 0 and restrictions are removed. If the Calling Group type is changed to Auto Login, extensions assigned Status 1 are changed automatically to Status 2 and restrictions remain.

Telephone Differences

Direct-Line Consoles

Extension Status can be assigned to DLCS only. In the hotel configuration, only a DLC system operator can change an extension to Status 0. In the Calling Group/CMS configuration, a calling group or CMS supervisor uses a DLC to monitor and change group member status.

Queued Call Consoles

Extension Status cannot be used on a Queued Call Console (QCC), and a QCC cannot be a calling group or CMS supervisor console or a calling group member.

Multiline Telephones

Only a telephone assigned as a DLC can activate Extension Status to see the status of telephones. In the hotel configuration, the feature is assigned to the console in system programming and is always active on the console unless the system operator presses the **Message Status** button to use the **Auto Dial** or **DSS** buttons to see message-waiting status for each telephone.

To activate Extension Status in the Calling Group/CMS configuration, the calling group or CMS supervisor assigned as a DLC presses the **Feature** button, dials **32**, and presses the **Hold** button. To deactivate the feature and return to normal call handling, the supervisor presses the **Feature** button, dials **32**, and presses the **Drop** button.

To change the status of a telephone, the DLC operator or supervisor activates Extension Status (if not already active) and then presses a programmed button for Status 0, Status 1, or Status 2, and the **Auto Dial** or **DSS** button for the telephone. The DLC operator or supervisor can also change the status of telephones by pressing the **Feature** button, dialing the feature code (**760** for Status 0, **761** for Status 1, and **762** for Status 2), and pressing the **Auto Dial** or **DSS** button for the telephone.

NOTE:

MLX display telephone users see only the first three characters dialed (for example, F76) when changing the status of telephones.

In either the hotel or Calling Group/CMS configuration, regular multiline telephone users can change to Status 1 or Status 2 by pressing a programmed button for each state or by pressing the **Feature** button and dialing the feature code (45 for Status 1 or 44 for Status 2). In the Calling Group/CMS configuration only, the user can change to Status 0 by pressing the **Feature** button and dialing *44.

Single-Line Telephones

A single-line telephone user can change to Status 1 or Status 2 by lifting the handset, which must be connected to an Intercom or System Access line, and dialing #45 for Status 1 or #44 for Status 2. In the Calling Group/CMS configuration only, the user can change to Status 0 by dialing #*44.

Feature Interactions

| | |
|---|--|
| Allowed Lists and Calling Restrictions | To allow users in the hotel configuration to dial emergency or other selected numbers when the telephone is in Status 1 or 2, access must be assigned to an Allowed List. |
| Callback | In the hotel configuration, an extension in Extension Status 1 or 2 cannot use Callback to request busy pools. |
| Direct Station Selection | A calling group or CMS supervisor or a DLC with Extension Status assigned can change the status of a group member or room by pressing a programmed Available or Unavailable button and then pressing the DSS button for the group member or room. |
| Do Not Disturb | The LED next to an Auto Dial or DSS button is on when the user activates Do Not Disturb or is busy on a call. In Release 2.0 and later, an MLX operator can inspect the DSS button to see if a Do Not Disturb message is posted. |
| Group Calling | Extension Status allows calling group supervisors to change and monitor calling group member status and to enable group members to sign in and out of the calling group. |

Forced Account Code Entry

See Account Code Entry.

Forward and Follow Me

At a Glance

| | |
|--|--|
| Users Affected | Telephone users, operators |
| Reports Affected | Extension Information Operator Information |
| Mode | All |
| Telephones | |
| Sending | All except QCC |
| Receiving | All |
| Programming Code | |
| Forward | *33 |
| Feature Code | |
| Forward On | |
| To inside ext. | 33 + <i>ext. no.</i> |
| To outside no. | 33 + <i>dial-out code + telephone no. + #</i> |
| Follow Me On | 34 + <i>sending ext. no.</i> |
| Forward/Follow Me Off | |
| At sending ext. | 33 + <i>sending ext. no.</i> |
| At receiving ext., for one sending ext. | *34 + <i>sending ext. no.</i> |
| At receiving ext., for all sending ext. | *34* |
| MLX Display Label | Forward [Forwd] Follow Me [FlwMe] CanclFollow (QCC only) |
| System Programming | Allow or disallow individual extensions to forward calls to outside telephone numbers (Remote Call Forward): ● Extensions → More → Remote Frwd Assign or remove principal user of a Personal Line (only the principal user can use Remote Call Forward for calls on the Personal Line): ● LinesTrunks → More → PrncipalUsr |
| Maximums | |
| Forward-to destinations per sending extension | 1 |
| Forward-from extensions per receiving extension | Unlimited |
| Factory Settings | |
| Remote Call Forward | Not allowed |

Description

Forward and Follow Me provide two ways for users to send calls to another number. Calls can be forwarded either to another inside extension (for example, if a user is temporarily working at a different desk) or to an outside number (for example, if a user is working at home). When calls are forwarded to an outside number, the feature is called *Remote Call Forward*.

NOTE:

Calls forwarded to outside telephone numbers may vary in transmission quality.

Whether calls are sent using Forward or using Follow Me depends on where the feature is turned on:

- Forward and Remote Call Forward are turned on at the user's own extension or from an outside telephone by Remote Access. Forward can be turned off at the user's own extension, at an extension to which the user's calls are forwarded, or from an outside telephone by Remote Access.
- Follow Me is turned on at another inside extension to send the user's calls to that extension. It can be turned off at the user's own extension or at the extension to which calls are sent. Follow Me can be used only to send calls to an extension, not to an outside telephone number.

If several extensions are sending their calls to a user, that user can turn off Forward and Follow Me either one extension at a time or all extensions at once.

All users except Queued Call Console (QCC) operators can use Forward or Follow Me to forward calls to another extension. Calls cannot be forwarded to a Calling Group.

The factory setting for Remote Call Forward is that users are not allowed to forward calls to outside numbers. Use of the feature can be allowed for individual extensions through system programming.

Forward, Remote Call Forward, and Follow Me send the following types of calls:

- Ringing inside calls
- Transferred inside or outside calls
- Outside calls received on a tie trunk that are directed to the extension
- Outside calls received on a Direct Inward Dial (DID) trunk

An available Calling Group member is automatically logged out when the member forwards his or her calls. If a Calling Group member logs in while calls are being forwarded, Forward or Remote Call Forward is automatically canceled.

Forward, Remote Call Forward, and Follow Me do not send the following types of calls:

- Voice-announced inside calls
- Calls received on a **Cover** button
- Returning parked or transferred calls
- Callback calls from the system
- Calls received on a **Shared SA** button
- Calls received on a **Call** button on a QCC
- Calls transferred from a Calling Group for a voice messaging system (VMS) connected to a port programmed as Generic VMI
- Calls forwarded from other extensions

Calls received on a Personal Line (an outside line assigned to a button on the telephone) are forwarded to outside numbers using Remote Call Forward only under the following circumstances:

- The extension must be assigned as the principal user of the Personal Line through system programming. Only one extension can be the principal user for a given trunk.
- If the Personal Line is a loop-start trunk, it must provide a reliable disconnect signal. A disconnect signal is the signal sent by the local telephone company to notify the system that an outside caller has hung up. Disconnect signaling is considered reliable when a disconnect signal is sent on every call when the caller hangs up, and is considered unreliable when a disconnect signal is not sent on every call. The factory setting for loop-start trunks is Unreliable Disconnect; this setting can be changed to Reliable Disconnect through system programming. Remote Call Forward cannot be used to forward calls arriving on a trunk programmed as unreliable.

NOTE:

Programming a loop-start trunk as reliable when in fact it does not provide reliable disconnect signaling will leave the trunk in a permanent busy condition after a call on that trunk has been forwarded to an outside number.

A forwarded call rings as shown in Table 19.

Table 19. Forwarded Call Ringing

| <u>Telephone Type</u> | <u>Calls forwarded to...</u> | |
|-----------------------|--|--|
| | <u>Inside Extension</u> | <u>Outside Number</u> |
| Multiline | Forwarding telephone rings once. Green LED continues flashing (call can still be answered). Receiving telephone rings and green LED flashes at available SA or ICOM button until call is answered. | Forwarding telephone does not ring. Receiving telephone rings. |
| Single-line | Forwarding telephone rings until call is answered. Receiving telephone rings and green LED flashes at available SA or ICOM button until call is answered. | Forwarding telephone does not ring. Receiving telephone rings. |

Considerations and Constraints

On multiline telephones, Forward should be programmed on a button so that the LEDs provide a visual reminder when calls are being forwarded.

A user can forward calls to only one extension or outside telephone number, A user can receive forwarded calls from an unlimited number of extensions.

Forward (including Remote Call Forward) and Follow Me cannot be used at the same time. When the second feature is turned on, the first one is automatically turned off.

A call forwarded to an extension rings both at the forwarding telephone and at an available **SA** or **ICOM** button on the destination telephone. (See Table 19.)

A call forwarded to an outside number does not ring at the forwarding telephone.

A forwarded outside call rings as an internal call (one ring burst) at the destination extension; it does not ring with the normal distinctive ring for an outside call.

The ability to use Remote Call Forward to forward calls received on a Personal Line to an outside number must be assigned through system programming. If this ability is assigned, only the principal user of a Personal Line can forward calls on that line to an outside number. If a principal user is not assigned, calls on a Personal Line cannot be forwarded to an outside number. When the principal user turns on Remote Call Forward, all calls received at that extension on an **SA** or **ICOM** button are forwarded to the outside number.

No error tone sounds when a user with a restricted telephone uses Remote Call Forward. However, when a call eligible for forwarding is received, the system checks restrictions and denies the forward if the outside telephone number is not on an Allowed List assigned to the telephone or is included on a Disallowed List assigned to the telephone.

If a user is off-hook while turning on Forward, Remote Call Forward, or Follow Me, and enters an invalid destination, he or she hears an error tone. On a display MLX telephone, the display clears. If a user enters an invalid extension while turning on Follow Me at an analog multiline display telephone, the display shows `ERROR`. If a user enters an invalid destination while turning on Forward or Remote Call Forward at an analog multiline display telephone, no error message appears on the display.

Reliable Disconnect cannot be programmed for a T1 channel programmed to emulate a loop-start trunk. When a call is received on a loop-start emulation channel, and Remote Call Forward is used, the call is forwarded to the primary system operator instead of to the destination telephone number.

A user who shares a Personal Line cannot join an in-progress call forwarded to an outside telephone number unless the user shares both the Personal Line on which the call was received and the Personal Line used to forward the call to the outside number.

When two or more users sharing a Personal Line forward calls to an extension via Forward or Follow Me, calls received on the Personal Line are forwarded to all destinations.

If Forward is turned on at an extension while it is ringing with an incoming call, the call continues to ring at that extension and also begins to ring at the destination extension.

Forward, Remote Call Forward, and Follow Me forward a call only once. For example, if extension A forwards calls to extension B, which in turn is forwarding calls to extension C, calls arriving for extension A are forwarded only to extension B and do not go on to extension C.

Calls received on a **Cover** button are not forwarded. When a Coverage sender turns on Forward, his or her calls are forwarded and go to Coverage at the same time.

Telephone Differences

Direct-Line Consoles

The DLC system operator can forward calls to extensions and, if allowed through system programming, to outside telephone numbers. Since outside lines are assigned as Personal Line buttons on the console, the ability to forward calls received on each outside line (excluding loop-start trunks with unreliable disconnect) to an outside number must also be assigned through system programming and can be assigned to only one telephone for each individual trunk.

Queued Call Consoles

Calls cannot be forwarded from a QCC to another extension or an outside number. (The QCC operator uses Position Busy instead.) However, users can forward calls to an individual QCC.

To turn on Follow Me for another extension at a QCC, the system operator presses the **Feature** button, selects `Follow Me` from the display, and at the prompt dials the extension of the forwarding telephone.

To cancel Forward and Follow Me from other extensions at the destination QCC, the system operator presses the **Feature** button, selects `CancelFollow` (Cancel Follow Me) from the display, and does one of the following:

- To cancel forwarding from one extension, the operator dials that extension.
- To cancel forwarding from all extensions, the operator dials `*`.

Other Multiline Telephones

To forward calls to an extension, the user either presses a programmed **Forward** button and dials the destination extension number, or presses the **Feature** button, dials `33`, and dials the destination extension number. If the user is off-hook, he or she hears a confirmation tone (double break in dial tone). If a programmed **Forward** button is used, the green LED next to the button goes on.

To forward calls to an outside telephone number, the user either presses a programmed **Forward** button or presses the **Feature** button and dials `33`. The user then selects the outside trunk or pool on which to route forwarded calls by dialing the Automatic Route Selection (ARS) or pool dial-out code (Hybrid/PBX mode only), the Idle Line Access code (usually 9; Key and Behind Switch modes only), or the trunk number (usually 801-880). The user then dials the destination telephone number followed by a pound sign (`#`) to signal the end of the dialing sequence. If the user is off-hook, he or she hears a confirmation tone. If a programmed **Forward** button is used, the green LED next to the button goes on.

To turn on Follow Me, the user presses the **Feature** button, dials `34`, and dials the forwarding telephone's extension. If the user is off-hook, he or she hears a confirmation tone. An MLX display telephone user can also use Follow Me by pressing the **Feature** button, selecting the feature from the display, and dialing the forwarding telephone's extension.

To turn off Forward, Remote Call Forward, and Follow Me at the originating multiline telephone, the user presses the programmed **Forward** button, or presses the **Feature** button, dials `33`, and dials his or her own extension number (in effect, "forwarding" calls to that extension). If the user is off-hook, he or she hears a confirmation tone. If a programmed **Forward** button is used, the green LED next to the button goes off.

To cancel Forward and Follow Me from other extensions at the destination telephone, the multiline telephone user presses the **Feature** button, dials *34, and does one of the following:

- To cancel forwarding from one extension, the operator dials that extension.
- To cancel forwarding from all extensions, the operator dials *.

Single-Line Telephones

To turn on forwarding to an extension at a single-line telephone, the user lifts the handset and (while listening to inside dial tone) dials #33 and the destination extension number. The user hears a confirmation tone (double break in dial tone).

To forward calls to an outside telephone number, the user lifts the handset and (while listening to inside dial tone) dials #33. The user then selects the outside trunk or pool on which to route forwarded calls by dialing the ARS or pool dial-out code (Hybrid/PBX mode only), the Idle Line Access code (usually 9; Key and Behind Switch modes only), or the trunk number (usually 801–880). The user then dials the destination telephone number followed by a pound sign (#) to signal the end of the dialing sequence. The user hears a confirmation tone.

To turn on Follow Me, the user lifts the handset and (while listening to inside dial tone) dials #34 and his or her extension. The user hears a confirmation tone.

To cancel Forward, Remote Call Forward, and Follow Me at the originating single-line telephone, the user lifts the handset and (while listening to inside dial tone) dials #33 and his or her own extension number (in effect, “forwarding” calls to that extension). The user hears a confirmation tone.

To cancel Forward and Follow Me from other extensions at the destination telephone, the single-line telephone user lifts the handset and (while listening to inside dial tone) dials **34 and does one of the following:

- To cancel forwarding from one extension, the operator dials that extension.
- To cancel forwarding from all extensions, the operator dials *.

Feature Interactions

| | |
|---|---|
| Account Code Entry | Account codes cannot be entered for calls forwarded to outside telephone numbers. Account codes are not necessary for calls forwarded to extensions. |
| Allowed Lists and Calling Restrictions | A user with an outward or toll restricted telephone cannot forward calls to an outside number unless the number is on an Allowed List assigned to the telephone. No error tone sounds when a user with a restricted telephone uses Remote Call Forward. However, when a call eligible for forwarding is received, the system checks restrictions and denies the forward if the outside telephone number is not on an Allowed List assigned to the telephone. |
| Auto Answer All | An answering device connected to an analog multiline telephone can answer forwarded calls when Auto Answer All is turned on. |
| Automatic Route Selection | ARS can be used to select the facility on which to forward calls to an outside telephone number. The user enters the ARS code before the telephone number. The FRL for the call is that of the telephone from which calls are being forwarded. |
| Barge-In | When a forwarded call is answered at the destination extension, Barge-In can be used to join the call only by dialing the extension number for the destination extension (not the number for the originating extension). Barge-In cannot be used to join a call forwarded to an outside telephone number. |
| Callback | <p>If a user queues a call and then uses Forward, Remote Call Forward, or Follow Me, the Callback call rings at the forwarding telephone, not at the destination to which calls are forwarded.</p> <p>When a user with Automatic Callback has selected a pool on which to forward calls to an outside number and a call arrives when all trunks in the pool are busy, the request is queued for the busy pool and the caller hears queuing tone. When a trunk becomes available, the caller hears dequeuing tone and the forward is completed.</p> <p>When a user with Selective Callback has selected a pool on which to forward calls to an outside number and a call arrives when all trunks in the pool are busy, the caller hears a busy signal. An inside caller can use Callback to queue the call for the forwarding telephone, not the busy pool. Outside callers cannot use Callback.</p> |

| | |
|--------------------------------|--|
| Call Waiting | Call Waiting does not apply for forwarded calls because the system tries the destination telephone instead of the forwarding telephone. One exception is that when the call is not forwarded (for example, because the user has tried to use Remote Call Forward from a restricted telephone), Call Waiting functions normally. |
| Conference | When calls received on a Personal Line are forwarded to an outside telephone number and another user who shares the Personal Line and the trunk selected to forward the call joins the in-progress call (by pressing the Personal Line button), the person joining the call is considered the conference originator and the forwarded call can be conference. If the person joining the call hangs up, all participants on the conference call are disconnected. |
| Coverage | When a Coverage sender forwards calls, calls are forwarded and sent to Coverage at the same time. Calls received on a Primary Cover , Secondary Cover , or Group Cover button are not forwarded. |
| Direct Station Selector | Forward can be turned on by pressing a programmed Forward button or using the feature code, then pressing a DSS button corresponding to the destination extension. Follow Me can be turned on by using the feature code and pressing a DSS button corresponding to the forwarding extension. |
| Disallowed Lists | A user cannot forward calls to an outside number if the number is on a Disallowed List assigned to the telephone. No error tone sounds when a user with a restricted telephone uses Remote Call Forward. However, when a call eligible for forwarding is received, the system checks restrictions and denies the forward if the outside telephone number is on the Disallowed List. |
| Display | <p>When an MLX display telephone user forwards calls to an extension, the display prompts for the extension. After Forward is turned on, the user sees a confirmation message. A user receiving a forwarded call sees a message indicating which extension forwarded the call. For an outside call, the user can press More to see the line the call came in on and, if Automatic Number Identification (ANI) is available, the caller's number. For an inside call, pressing More shows the caller's name and extension.</p> <p>When an MLX display telephone user forwards calls to an outside telephone number, the display prompts for the number. On MLX and analog multiline telephones, the digits appear on the display as the user dials the number. An MLX display telephone user receives a feedback message confirming that his or her calls are now forwarded to an outside number.</p> |

When an MLX display telephone user turns Follow Me on or off, the display prompts for the forwarding extension. After the feature is turned on, the message *Signed In* appears. After the feature is turned off, the message *Signed Out* appears.

If an MLX display telephone user enters an invalid destination while turning on Forward, the display clears. If a user enters an invalid extension while turning on Follow Me at an analog multiline display telephone, the display shows *Error*. If a user enters an invalid destination while turning on Forward or Remote Call Forward at an analog multiline display telephone, no error message appears on the display.

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| Do Not Disturb | Calls are not forwarded to a destination extension that has Do Not Disturb turned on; the call rings only at the forwarding telephone as described in Table 19. Turning on Do Not Disturb at the forwarding extension does not prevent the calls from being forwarded. |
| Forced Account Code Entry | Telephones with Forced Account Code Entry assigned can forward calls only to extensions and not to outside telephone numbers. The user hears a fast busy signal if trying to forward calls to an outside telephone number. |
| Group Calling | <p>An available Calling Group member is automatically logged out when the member forwards his or her calls. If a Calling Group member logs in while calls are being forwarded, Forward or Remote Call Forward is automatically canceled.</p> <p>Calls cannot be forwarded to a Calling Group.</p> <p>When a trunk programmed to ring in to a Calling Group is assigned as a Personal Line on a principal user's telephone, an incoming call received on the Personal Line is not sent to the Calling Group if the principal user forwards calls to an outside telephone number via Remote Call Forwarding.</p> |
| Multi-Function Module | The use of Forward (including Remote Call Forward) and Follow Me is not recommended on an MFM because the user does not have an LED that indicates when the feature is active. |
| Night Service | When Night Service is turned on, calls arriving for a Night Service group member can be forwarded to an extension using Forward or Follow Me. However, calls cannot be forwarded to an outside telephone number using Remote Call Forward. |
| Paging | Calls cannot be forwarded to a Paging Group. The trunk number used to connect loudspeaker paging equipment cannot be used to forward calls to outside telephone numbers. |
| Park | Returning parked calls are not forwarded. |

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| Personal Lines | When an extension is programmed as the principal user of a Personal Line, calls arriving on the Personal Line can be forwarded to an outside number (if the extension can use Remote Call Forward), unless the Personal Line is a loop-start trunk with unreliable disconnect. |
| Pickup | Pickup cannot be used to answer calls being forwarded to an outside telephone number. |
| Pools | A pool can be used to forward calls to an outside telephone number. The user enters the pool dial-out code before the telephone number. |
| Remote Access | <p>Users can turn on Forward or Remote Call Forward via Remote Access. To do so, the user calls into the system on a trunk that is programmed for Remote Access and enters the barrier code, if required.</p> <p>To forward calls to an extension, while listening to system dial tone, the user dials #33, then the forwarding extension number, then the destination extension number.</p> <p>To forward calls to an outside telephone number, the user dials #33, then the forwarding extension number, then the ARS or pool dial-out code (Hybrid/PBX mode only), the Idle Line Access code (usually 9; Key and Behind Switch modes only), or the trunk number (usually 801–880). The user then dials the destination telephone number and a # to signal the end of the dialing sequence.</p> |
| Ringling Options | <p>On a multiline telephone, calls forwarded to an extension ring with an abbreviated ring at the forwarding telephone and also ring at the destination telephone. On single-line telephones, calls forwarded to an extension ring at both the forwarding telephone and the destination telephone. On both multiline and single-line telephones, calls forwarded to a telephone number do not ring at the forwarding telephone.</p> <p>A forwarded outside call rings as an internal call (one ring burst) at the destination extension; it does not ring with the normal distinctive ring for an outside call.</p> |
| SMDR | If the system is programmed to track both incoming and outgoing calls, two SMDR records are generated when an outside call is forwarded to an outside telephone number. One record shows the incoming call and the other record shows the call made to the destination telephone number with the forwarding telephone as the originator. |

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| System Access/ Intercom Buttons | <p>A Shared SA button cannot be used to turn on Forward or Remote Call Forward for the principal's telephone. Calls received on a Shared SA button are not forwarded.</p> <p>When calls are forwarded to an extension, a call received on an SA or ICOM button rings once at the forwarding extension's SA or ICOM button (including all assigned Shared SA buttons, even though a call received on these buttons is not forwarded) and also rings at the destination extension's SA or ICOM button (including all assigned Shared SA buttons).</p> |
| Transfer | <p>Inside and outside calls transferred by another user or by a system operator are forwarded. If a user transfers a call to an extension with calls forwarded, the extension receiving the forwarded calls hears one burst of ring, indicating an internal call. If the extension is a display telephone, the call information appears as an internal call and not an outside call.</p> <p>Returning transferred calls are not forwarded.</p> |
| Voice Announce to Busy | <p>Voice-announced calls are not forwarded.</p> |

Group Calling

At a Glance

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|-----------------------------|--|
| Users Affected | Telephone users, operators |
| Reports Affected | Dial Plan Direct Group Calling Information Extension Information System Information |
| Mode | All |
| Telephones | |
| Supervisor | One of the following assigned as a DLC: MLX-20L MLX-28D MERLIN II System Display Console with built-in DSS BIS-34 BIS-22 with display |
| Member | All |
| Programming Code | |
| Any telephone | |
| In-Queue Alarm | *22 + Calling Group ext. no. |
| Calling Group supervisor | |
| Unavailable (ES Status 0) | *760 |
| Available (ES Status 2) | *762 |
| Calling Group members | |
| Log in/out | *44 |
| Feature Code | |
| Calling Group supervisor | |
| Enter supervisory operation | 32 + Hold |
| Exit supervisory operation | 32 + Drop |
| Unavailable (ES Status 0) | 760 + DSS |
| Available (ES Status 2) | 762 + DSS |
| Calling Group members | |
| Log in | 44 |
| Log out | *44 |
| MLX Display Label | |
| Unavailable (ES Status 0) | ES Status,ES Off [ES,ESOff] |
| Available (ES Status 2) | ES Status,ES2 [ES,ES2] |

Continued on next page

At a Glance *(continued)*

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| System Programming | <p>Assign Calling Group members and Calling Group supervisors to each Calling Group:</p> <ul style="list-style-type: none"> ● Extensions → More → Grp Calling → Members <p>Assign lines/trunks to ring into Calling Group:</p> <ul style="list-style-type: none"> ● Extensions → More → Grp Calling → Line/Pool <p>Select hunt type—circular or linear:</p> <ul style="list-style-type: none"> ● Extensions → More → Grp Calling → Hunt Type <p>Designate delay announcement device:</p> <ul style="list-style-type: none"> ● Extensions → More → Grp Calling → DelayAnnce <p>Assign Calling Group as receiver for a Group Coverage sender group:</p> <ul style="list-style-type: none"> ● Extensions → More → Grp Calling → GrpCoverage <p>Assign Message Waiting Receiver for Calling Group:</p> <ul style="list-style-type: none"> ● Extensions → More → Grp Calling → Message <p>Set Overflow Threshold and designate Calling Group or QCC queue as Overflow Receiver:</p> <ul style="list-style-type: none"> ● Extensions → More → Grp Calling → Overflow <p>Change Calling Group Type to determine if Calling Group members are automatically logged in after a system restart. When Calling Group is used for voice messaging systems, specify whether VMI type is integrated or generic:</p> <ul style="list-style-type: none"> ● Extensions → More → Grp Calling → Group Type <p>Change Calls-In-Queue Alarm Threshold:</p> <ul style="list-style-type: none"> ● Extensions → More → Grp Calling → Queue Alarm <p>Assign external alert to notify Calling Group members of Calls-In-Queue Alarm:</p> <ul style="list-style-type: none"> ● Extensions → More → Grp Calling → Xtnl Alert <p>Enter display label for Calling Group:</p> <ul style="list-style-type: none"> ● More → Labeling → Grp Calling |
| Maximums | |
| Calling Groups | 32 |
| Telephones per group | 20 |
| Calling Groups per telephone | 1 |
| Calling Groups per trunk | 1 |
| Delay announcement devices per system | 32 (one per group, can be shared among groups) |
| Message Waiting Receivers per Calling Group | 1 (can be shared among groups) |

Continued on next page

At a Glance *(continued)*

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|---------------------------------|--------------------------------|
| Maximums (continued) | |
| Overflow Threshold | |
| (Calls-in-Queue Alarm) | 1 (range 1—99) |
| External Alerts per group | 1 |
| Overflow Receivers per group | 1 (can be shared among groups) |
| Factory Settings | |
| Calling Group extension numbers | 770—791, 7920—7929 |
| Extension Status | Calling Group/CMS |
| Hunt Type | Circular |
| Group Type | Auto Logout |

For additional information about Calling Group activities, see Extension Status.

Description

Group Calling is used to direct incoming calls to a specific group of telephones (a *Calling Group*). A Calling Group is a team of individuals who answer and handle the same kinds of calls—for example, high volume work groups such as sales, service, marketing, repair, and technical support. Also, fax machines that receive a large number of fax messages can be placed in a Calling Group to allow multiple calls to be sent.

Through Group Calling, all members in the Calling Group are assigned to a single extension number. Specific trunks can be assigned to ring directly into the Calling Group so that outside callers can dial a published telephone number to reach the group, bypassing the system operator.

Individual Calling Group member extensions are assigned an extension number, allowing a group member to receive calls as an individual and as a group member. Calls that come into a Calling Group are usually not intended for a particular group member and can be handled by any member. However, inside callers can reach a specific Calling Group member by dialing the individual extension number assigned to the member.

As calls come into the Calling Group, the system hunts for an available group member in a circular or linear manner. (See Hunt Type in this section.) If a group member is available, the call rings on an **SA** or **ICOM** button. If all group members are busy or otherwise unavailable, calls are held in a queue. As Calling Group members become available, the calls are distributed on a first in/first out basis.

Inside callers who are transferred to the Calling Group hear a regular ringback when all Calling Group members are busy and the call is sent to the Calling Group queue; outside callers hear special ringback or Music-on-Hold if it is programmed for the system. In addition, an announcement device can be assigned to the group to play a recorded announcement to each waiting caller in the order that the calls arrive in the queue.

Calling Group members log in when they are ready to take calls (available status) and log out while they finish call-related activities or when they leave their positions (unavailable status). Calls are sent to a Calling Group member only if the member is logged in and is not busy on another call. When the Group Type is set to Auto Logout (the factory setting) and a call sent to a Calling Group member is not answered within 30 seconds (5 rings), the call is sent to another member or to the front of the queue if another Calling Group member is not available. The system automatically logs out the extension where the call went unanswered and makes it unavailable for subsequent calls until the Calling Group member logs in.

A Calling Group member is considered available if *all* of the following conditions are met:

- The extension is signed in to the Calling Group (available status)
- The extension is on-hook (handset is down or headset user disconnected the last call and no red LED is on at the telephone) and the speakerphone is off
- The extension is not ringing or busy on another call
- The extension does not have a call on hold (except for transfer hold)
- The extension is not in the program or test mode
- An **SA** or **ICOM** button is available for call delivery
- Do Not Disturb is not turned on
- Calls are not being forwarded via Forward, Remote Call Forward, or Follow Me
- The Calling Group member did not activate Callback to reach a busy trunk (Hybrid/PBX mode only) or extension
- The system is not calling another user who activated the Callback feature to reach the Calling Group member

Calling Group Options

This section describes the Group Calling options assigned through system programming and available only for Calling Groups.

Calling Group Supervisor Position

The Calling Group Supervisor Position is a Direct-Line Console (DLC) with Extension Status assigned through system programming. The Calling Group supervisor monitors and controls Calling Group activity by using the LEDs and programmed buttons on the console or DSS.

The supervisor console should include the following programmed buttons:

- One button per Calling Group member, programmed with the member's extension on the telephone or an optional DSS.
- A **Calls-In-Queue Alarm** button (either on the console or on a DSS), programmed with the Calling Group's extension, for monitoring calls in queue. A supervisor who manages more than one group needs a button for each group.
- Status buttons for controlling Calling Group member availability; an **Available** button (ES2) and an **Unavailable** button (ES0). Extension Status features allow a Calling Group supervisor to change and monitor Calling Group members' status (and enable members to sign in and out of the Calling Group). See Extension Status for additional information.

Hunt Type

The placement of each telephone in the hunting sequence used by the system to search for an available Calling Group member is determined by the order in which each telephone is assigned to the group during system programming. When the first call arrives for a Calling Group after a system is installed or restarted (cold start), the system searches for an available group member, starting with the first telephone assigned to the group during system programming.

The order in which the system searches for an available Calling Group member for subsequent calls can be either circular or linear and is called the *hunt type*.

- **Circular:** As subsequent calls arrive, the system searches for an available Calling Group member, starting with the extension after the last extension to receive a call. This ensures that calls are evenly distributed among group members. The circular order is the factory setting and is used when all group members have the same responsibilities for handling calls.
- **Linear:** As subsequent calls arrive, the system distributes calls, starting with the first telephone assigned to the group through system programming. Consequently, most calls are handled by the first member assigned to the group. This method is used, for example, when the primary responsibility of the first Calling Group member is to take calls, while other group members provide backup.

Delay Announcement

Each Calling Group can have a delay announcement device (such as an answering machine) that plays a message to a caller explaining the delay. The device can be connected to the control unit on a 012 (tip/ring) or 008 OPT module, can be connected to an analog multiline telephone via a general purpose adapter (GPA), or can be connected to an MLX telephone by using an MFM. Each device is identified by the extension number assigned in the system numbering plan. Each Calling Group can have a separate delay announcement (only one per Calling Group), or any number of groups can

share one. The delay announcement device should not be assigned as a Calling Group member.

When no Calling Group members are available and calls enter the Calling Group queue, the announcement device answers the call that has been waiting longest and plays the recorded message. After the delay announcement, an inside caller hears a special ringback, a transferred inside caller hears regular ringback, and an outside caller (including a transferred outside caller) hears special ringback or Music-on-Hold, if programmed, until the call is answered by a Calling Group member. The delay announcement is played only once while the call is in queue.

In Release 2.0 and later, all calls delivered to a jack programmed as a Calling Group delay announcement device produce a one-burst internal ring (heard by the caller). In addition, outside calls transferred to a Calling Group and then answered by either the delay announcement device or a Calling Group member show the most recent answering station, not the transferring station, on the SMDR call record.

If a Calling Group member becomes available while the caller is listening to the delay announcement, the system immediately routes the caller to the Calling Group member. The announcement device is then free to handle another queued call.

Each announcement device has an extension number. This allows a Calling Group member or Calling Group supervisor to dial this number to check the announcement or to change the announcement (if the delay announcement device allows the user to read or change messages remotely).

If the device is malfunctioning and does not answer the call within 30 seconds (5 rings), the system automatically logs out the device and makes it unavailable for subsequent calls until the Calling Group supervisor logs in the device or until the next system restart. The only effect on incoming calls is that callers do not hear the announcement.

If a caller hangs up while listening to the delay announcement device, the extension of the delay announcement device, not that of the Calling Group, is recorded on the SMDR.

Message-Waiting Receiver

The message-waiting receiver is the telephone designated to receive message-waiting indications for the Calling Group. This includes message-waiting indications sent from the system operator, from a display telephone using Leave Word Calling, or from a fax machine. Any type of telephone with a message LED can be assigned as a message-waiting receiver.

The telephone designated as the message-waiting receiver does not have to be a member of the Calling Group. Each Calling Group can have only one telephone assigned as its message-waiting receiver, but the same telephone can be assigned as the message-waiting receiver for more than one Calling Group.

NOTE:

Message-waiting indications cannot be sent to the extension number assigned to the group unless this option is programmed. The message-waiting receiver cannot distinguish between messages left for the Calling Group and personal messages.

Overflow Threshold (Calls-in-Queue Alarm Threshold)

The Overflow Threshold is the number of calls (1-99) allowed in the queue before calling members are notified. When the number of waiting calls is equal to or greater than the programmed Overflow Threshold (factory setting is one call), the Calling Group members can be notified in one of two ways:

- Via an assigned external alert connected to an analog multiline telephone by using a supplemental alert adapter (SAA), or connected to an MLX telephone by using an MFM. Since the tone sent to the alert is continuous, it is recommended that only a device such as a strobe light be used, which stays lit until the number of calls drops below the limit. Only one external alert can be assigned to each Calling Group, and each external alert can be assigned to only one Calling Group.

The system does not block the programming of any station jack (including station jacks used for telephones or system operator consoles) as an external alert that provides Calls-in-Queue Alarm indication. However, programming a telephone as a Calls-in-Queue Alarm is not recommended because the telephone rings continuously while the number of calls in the Calling Group queue is equal to or greater than the programmed threshold.

- Via the LED associated with a **Calls-In-Queue** button programmed with the Calling Group's extension or a **DSS** button that corresponds to the extension. The LED associated with either type of button does not go out until the number of calls drops below the programmed limit. There is no limit to the number of buttons that can be programmed to provide the Calls-in-Queue Alarm indication.

Any multiline telephone in the system can be used to monitor the status of a Calling Group's queue by programming the **Calls-in-Queue Alarm** button. An MLX display telephone can be used to view the number of calls in a queue (1-99) on the display by pressing the **Inspect** button and then pressing the **Auto Dial** button programmed with the Calling Group's extension number. The Inspect feature cannot be used on a **DSS** button.

Overflow Receiver

When the number of calls waiting in the Calling Group queue reaches the Overflow Threshold, calls can be sent to an Overflow Receiver, which can be another Calling Group or the Queued Call Console (QCC) queue. Only one Calling Group or the QCC queue can be programmed to provide overflow coverage for the same Calling Group, and each Calling Group or the QCC

queue can provide overflow coverage for more than one Calling Group. If no Overflow Receiver is programmed, the call continues to ring in the queue until it is answered or the caller hangs up.

Calling Group Overflow Receiver. Before calls are directed to an Overflow Receiver that is a Calling Group, the following conditions must be met:

- The number of calls in the queue must be equal to or greater than the programmed Overflow Threshold.
- The overflow Calling Group must have an available Calling Group member.
- No calls can be already queued for the overflow Calling Group.

If any of these conditions is not met, the call continues to wait in the sending Calling Group queue until the overflow conditions are met.

If all conditions are met, the calls are directed to the Overflow Receiver on a first-in/first-out basis until the number of queued calls in the covered Calling Group is less than the Overflow Threshold. The system searches for an available Calling Group member according to the hunt type assigned to the sending Calling Group. Since the calls wait in the sender's Calling Group queue, they are not eligible for overflow coverage or delay announcement.

When the overflow group type is set to Auto Logout and an overflow call is not answered within 30 seconds (5 rings), the overflow Calling Group member is logged out. The call is returned to the sender Calling Group's queue and is placed at the front of the queue. The caller does not hear the sender's delay announcement even if the call was sent to the overflow Calling Group before the caller heard the delay announcement.

QCC Queue Overflow Receiver. When the QCC queue is assigned to provide overflow coverage for a Calling Group, the following conditions must be met before calls are directed to the QCC queue:

- The number of calls in the Calling Group queue must be equal to or greater than the programmed Overflow Threshold.
- No QCC operators can be in Position Busy mode.

An overflow call that is sent to the QCC queue does not return to the Calling Group even if the call is not answered. When the QCC queue is providing overflow coverage for a Calling Group and all QCC operators are in Position Busy, overflow calls do not receive Position Busy backup (not redirected to another Calling Group providing Position Busy backup for the QCC queue) and continue to wait in the original Calling Group queue.

if all QCC operators activate Position Busy while an overflow call is in the QCC queue, the call is re-routed to the original Calling Group and not to the Calling Group providing Position Busy backup.

Calling Group Type

The Group Type setting determines whether or not the system automatically logs in members of a Calling Group following a power failure. The setting also determines the type of voice messaging interface (VMI) when the Calling Group is used to connect voice messaging systems or automated attendant applications.

The following settings are available:

- **Auto Logout:** (the factory setting): This setting is used for Calling Groups to specify that the system does not automatically log in Calling Group members after a power failure. When the Group Type is set to Auto Logout (the factory setting) and a call sent to a Calling Group member is not answered within 30 seconds (5 rings), the call is sent to another member or to the front of the queue if another Calling Group member is not available.
- **Auto Login:** This setting is for Calling Groups used for fax machines or data (also called *data hunt groups*) to specify that the system automatically logs in Calling Group members following a power failure. See the *Data User's Guide* for more detailed information. The setting also can be used for Calling Groups used for telephones.
- **Integrated VMI:** This setting is used when a voice messaging system (such as AUDIX Voice Power™—IS II/III or MERLIN MAIL) that requires special signaling for integrated operation is connected to one or more telephone jacks assigned to a Calling Group. The system automatically logs in the Calling Group members after a power failure.
- **Generic VMI:** This setting is used when a voice messaging system (such as MERLIN Attendant or Integrated Voice Power Automated Attendant) that does not require special signaling, is connected to one or more station jacks assigned to a Calling Group. The system automatically logs in the Calling Group members after a power failure.

Considerations and Constraints

A telephone can be a member of only one Calling Group.

Calling Groups with no members are allowed.

Extension Status must be set to Calling Group/Call Management System (CMS), the factory setting, and not hotel configuration.

The Integrated or Generic Voice Messaging Interface (VMI) group type cannot be assigned to a Calling Group used for fax machines.

When Calling Group members make a call to their own Calling Group, the call is not delivered to that group member because he or she is considered unavailable while making the call.

To allow all Calling Group members' extensions to ring when an outside call is not answered within three rings, the trunks programmed to ring into the queue can also be assigned to buttons on Calling Group members' telephones and programmed for delayed ring. This does not work for inside calls, Remote Access calls, and Direct Inward Dial (DID) calls, nor if a delay announcement device is assigned to the group.

Trunks that are programmed to ring into a Calling Group also ring at any telephones that have the trunk assigned to a button. If a call is answered at any one of these telephones, the call is removed from the Calling Group queue.

A trunk can be assigned to a Calling Group and as Personal Lines.

A trunk cannot be programmed to ring into more than one Calling Group.

A trunk cannot be programmed to ring into both a Calling Group and a QCC queue.

If no trunks are assigned to the Calling Group, only inside calls are eligible for Calling Group distribution.

The Calling Group supervisor can log in or log out delay announcement devices.

Any of the multiline and single-line telephones compatible with the system can be used as Calling Group member positions.

Labels can be assigned to Calling Groups to identify the name of the group, such as sales, service, or claims, on display telephones.

The system does not prevent users who are not members of a Calling Group from using the Available (ES2) and Unavailable (ES0) programmed buttons or feature codes. CMS agents who may not be Calling Group members can use these same codes to log in and out of the CMS.

The published number for a Calling Group can be a DID number.

Mode Differences

Behind Switch Mode

Calls to Calling Groups in a system set up in Behind Switch mode do not follow the central office ring pattern.

Telephone Differences

Direct-Line Consoles

A DLC can be a member of a Calling Group and is normally used as the Calling Group supervisor position. Supervisor positions must be assigned to a DLC. Any of the following telephones assigned as a DLC can be used as a Calling Group supervisor's console:

- MLX-20L telephones with or without a DSS
- MLX-28D telephones with or without a DSS
- BIS-22 with a display
- BIS-34 with or without a display
- MERLIN II System Display Console with built-in DSS

The supervisor must activate Extension Status to see the status of Calling Group members and to change their availability; this cannot be done from normal call handling operation.

To activate Extension Status, the Calling Group supervisor presses the **Feature** button, dials **32**, and presses the **Hold** button. To deactivate the feature and return to normal call handling, the supervisor presses the **Feature** button, dials **32**, and presses the **Drop** button.

To change the availability of a Calling Group member, the supervisor activates Extension Status (if not already active), and presses a programmed button for Available (ES2) or Unavailable (ES0) and the **Auto Dial** or **DSS** button for the group member's extension number. The supervisor can also change the status of telephones by pressing the **Feature** button, dialing the feature code (**762** for Available [ES2] and **760** for Unavailable [ES0]), and pressing the **Auto Dial** or **DSS** button for the group member's extension number. A supervisor with an MLX display telephone can change the status of telephones by pressing the **Feature** button, selecting the feature from the display (**es2 on** for Available and **es off** for Unavailable), and pressing the **Auto Dial** or **DSS** button for the group member's extension number.

Queued Call Consoles

A QCC cannot be a member of a Calling Group and cannot be assigned as a Calling Group or CMS supervisor position.

The QCC queue can be designated to provide overflow coverage for calls from one or more Calling Groups. When an overflow call is sent to the QCC queued, it cannot be distinguished as a Calling Group call.

Other Multiline Telephones

Calling Group members log into the group by pressing the programmed **Available** button or by pressing the **Feature** button and dialing **44**. To log out, the group member can press the programmed **Available** button or can press the **Feature** button and dial ***44**.

To see the number of calls waiting in queue, a group member with an MLX display telephone presses the **Inspect** button followed by the programmed **Calls-in-Queue Alarm** button. An analog multiline user cannot use the Inspect feature.

Single-Line Telephones

A Calling Group member with a single-line telephone can log into and out of the Calling Group by lifting the handset (which must be connected to an **SA** or **ICOM** line) and dialing **#44** to log in or ***44** to log out.

Feature Interactions

- | | |
|------------------------|---|
| Auto Answer All | Calling Group members with analog multiline telephones can use Auto Answer All when an answering machine is connected to their telephones. When the feature is activated, all incoming calls ringing on the group member's telephone (both calls for the Calling Group and calls to the group member's own extension) are answered automatically by the answering machine. |
| Auto Dial | <p>The Calls-in-Queue Alarm button is assigned on a multiline telephone by programming an inside Auto Dial button with the Calling Group's extension number.</p> <p>When a DSS adjunct is not available, Auto Dial buttons programmed with each Calling Group member's extension are used by the Calling Group supervisor to monitor group member availability.</p> |
| Barge-In | <p>Barge-In can be used for Calling Group members, but the member's extension must be used instead of the Calling Group extension. If a user tries to use Barge-In after dialing the Calling Group extension number and waiting in the queue, the feature has no effect.</p> <p>If a person uses Barge-In to reach another user who is waiting in a Calling Group queue, the queued call is removed from the queue and both people are connected. If a person uses Barge-In for the delay announcement extension and the device is playing a message to a caller, the call is removed from the queue and both people are connected.</p> |

| | |
|---------------------|---|
| Callback | <p>Calls made to a Calling Group are not eligible for Callback because the call rings into the Calling Group's queue. However, Callback can be used for calls to individual Calling Group member extensions or to the delay announcement device. Calling Group calls are not sent to the group member telephone when the Calling Group member uses Callback for a busy extension or pool, or if another person used Callback to reach a Calling Group member and the Callback call is ringing on that person's telephone.</p> |
| Call Waiting | <p>Calls made to a Calling Group are not eligible for Call Waiting because the call rings into the Calling Group's queue. However, Call Waiting can be used for calls to individual members of the Calling Group. If the Calling Group member is a fax machine, the Call Waiting tone is not given to the fax port.</p> |
| Camp-On | <p>Users can transfer calls to a Calling Group by using Camp-On, but calls do not return to the originating telephone, even if it is not answered within the programmed Camp-On Interval. If the Calling Group is made of fax machines, a call waiting tone is not given to the fax port when the call is camped-on.</p> |
| Conference | <p>Calls waiting in the Calling Group queue or ringing at a Calling Group member's extension cannot be added to a conference call. A user must be connected to a Calling Group member before the call can be added to the conference.</p> |
| Coverage | <p>A Calling Group cannot be programmed as a receiver for Individual Coverage. A Coverage group can have a maximum of one Calling Group as a receiver. If a Calling Group is programmed as a receiver for a Coverage group, it must be the only Group Coverage receiver; Individual Coverage (primary and/or secondary) receivers can be programmed. A Calling Group can be a receiver for a maximum of 30 Coverage groups.</p> <p>As soon as the call is sent from the Calling Group queue to a Calling Group member or the delay announcement, the call appearance is removed from the sender's telephone (except for outside calls received on personal lines).</p> <p>A Calling Group member can be a sender for Individual Coverage (Primary or Secondary) or Group Coverage. Calls to the Calling Group extension number are sent only to the Calling Group member's Individual Coverage receivers and not to the Group Coverage receivers. Calls to the Calling Group member's individual extension are sent to both Individual and Group Coverage receivers.</p> <p>Coverage VMS can be activated if the user does not want outside calls to be sent to the voice messaging system.</p> |

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| Display | Calling Group agents with MLX display telephones see feedback messages on the display when they log into the Available state. When a Calling Group supervisor with an MLX display telephone logs Calling Group members in or out, a message appears on the supervisor display and on the group member's display. After pressing either the Available or Unavailable button or dialing the feature code, supervisors with MLX telephones are prompted to indicate which group member they want to log in or out. When a Calling Group member with an MLX telephone receives an outside call for the Calling Group, the label of the Calling Group or <code>GrpCl</code> appears on the display along with the label for the line on which the call came in. If automatic number identification (ANI) or, in Release 2.0 and later, station identification (SID) is available, the number of the caller is shown on the display on MLX telephones after pressing the More button. Analog multiline telephone users see only the line information. Any MLX telephone user can inspect the number of calls in queue by pressing the Inspect button and then pressing a button programmed with the Calling Group's extension. The display shows the label associated with the Calling Group and the number of calls. |
| Do Not Disturb | If a Calling Group member uses Do Not Disturb, calls are not sent to the group member even if he or she is logged in and available. |
| Extension Status | Extension Status allows Calling Group supervisors to change and monitor Calling Group member status and enables group members to sign in and out of the Calling Group. |
| Forward and Follow Me | An available Calling Group member is automatically logged out when he or she forwards calls to an extension or telephone number. If a Calling Group member logs in while calls are being forwarded, Forward or Remote Call Forward is automatically canceled. Calls cannot be forwarded to Calling Groups. When a trunk is assigned as a personal line on an extension assigned as a principal user and the trunk is also programmed to ring into a Calling Group, an incoming call received on the personal line is not sent to the Calling Group if the principal user forwards calls to an outside telephone number using Remote Call Forwarding. |
| Hold | A Calling Group member who puts a call on hold by using the Hold button is considered unavailable for incoming calls. Internal callers waiting in the Calling Group queue cannot put themselves on hold. |

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| Labeling | An alphanumeric label can be assigned to the Calling Group. The label is displayed on incoming Calling Group calls to MLX Calling Group members or when an MLX display telephone user presses the Inspect button and an Auto Dial button programmed with the Calling Group's extension number. |
| Messaging | Users can leave messages for the Calling Group only if the system has been programmed with a designated Calling Group Message Receiver. The receiver also receives fax message-waiting indications directed to the Calling Group. The message-waiting receiver cannot distinguish between messages left for the Calling Group and fax or personal messages. |
| Multi-Function Module | An MFM can be a member of a Calling Group, can be assigned as a delay announcement for a Calling Group, or can be used to connect an external alert for a Calls-In-Queue Alarm. An MFM that is used for the delay announcement or Calls-in-Queue alert should not be assigned as a group member. |
| Music-on-Hold | An outside caller waiting in the Calling Group queue hears Music-on-Hold, if programmed, when the system answers the call. |
| Night Service | In Release 2.0 and later, a Calling Group can be a Night Service group member. |
| Park | A Calling Group member who parks a call is considered available to receive another call. |
| Personal Lines | <p>To allow all Calling Group members' telephones to ring when an outside call is not answered within three rings, the trunks programmed to ring into the queue can also be assigned to buttons on group member telephones and programmed for Delay Ring. This does not work for inside calls, Remote Access Calls, or DID calls, or if a delay announcement device is assigned to the group.</p> <p>If a person with a shared Personal Line button answers a call waiting in the Calling Group queue, the call is removed from the queue. If a delay announcement is playing, it is disconnected from the call.</p> |
| Pickup | A Calling Group member can be a member of a Pickup group. Calling Group members can use Pickup to answer a call (either to the Calling Group or to the individual group member's extension) ringing at another group member's telephone. Line Pickup can be used to pick up a call in the Calling Group queue. |

| | |
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| Pools | Trunks assigned to pools can be assigned to ring into a Calling Group. An incoming call on a trunk assigned to the pool rings on an SA button even if the Calling Group member has a Pool button assigned. |
| Remote Access | Remote Access users cannot log into a Calling Group, but a Remote Access user can call into a Calling Group regardless of the restrictions applied. When the call rings at a Calling Group member's telephone, it rings as an outside call. A Calling Group can be programmed to receive calls from Remote Access users to invalid extensions. If a trunk is programmed for both Remote Access and Group Calling, Remote Access overrides Group Calling. |
| Ringling Options | Abbreviated Ring is not operable for calls to the Calling Group extension because a Calling Group member active on a call is considered unavailable for incoming calls. In Hybrid/PBX mode, Calling Group members should program SA buttons for Immediate Ring. |
| Signaling | A Signaling button cannot be programmed for a Calling Group. |
| SMDR | <p>In Release 2.0 and later, calls to Calling Groups are associated with the most recent extension to handle the call, that is, if a call is transferred to a Calling Group, the Calling Group extension appears on the SMDR. If the call is answered by the Calling Group delay announcement device, the extension for the device is recorded on the SMDR record, but it is overwritten if the call is answered by a Calling Group member.</p> <p>The timing begins as soon as the Calling Group member or delay announcement device answers the call. If the caller hangs up while listening to a delay announcement, the call is associated with the extension of the answering device.</p> |
| System Access/ Intercom Buttons | Calls to a Calling Group ring on SA or ICOM buttons on the telephones of Calling Group members. A Calling Group member who is making or receiving a call on a Shared SA button is considered unavailable by the system; the principal owner, however, is considered available and can still receive calls directed to the Calling Group. |
| System Numbering | Extensions for Calling Groups (the factory-set extensions are 770-791 and 7920-7929) are assigned and can be renumbered through System Numbering. |

Transfer

A call transferred to a Calling Group is not returned to the originator; the call is handled like any other call received in the Calling Group. For example, the system follows the same hunt sequence to locate an available Calling Group member, and the call is eligible for a delay announcement if one is programmed.

A Calling Group member who has a call on transfer hold is considered available for a call, since transfer hold requires pressing the **Transfer** button rather than the **Hold** button.

Voice-announced transfers cannot be made to a Calling Group, There is no limit to the number of calls that can be transferred to a Calling Group.

In Release 2.0 and later, when an inside caller is transferred to a Calling Group and no members are available, the inside caller hears a one-burst ringback. When an outside caller is transferred to a Calling Group and no members are available, the outside caller hears a two-burst ringback or Music-on-Hold, if it is programmed.

Headset Options

At a Glance

| | |
|----------------------|---|
| Users Affected | Telephone users, operators |
| Reports Affected | Extension Information |
| Mode | All |
| Telephones | MLX telephones |
| Programming Code | |
| Headset Hang Up | *781 (centralized telephone programming only; not applicable on QCC) |
| Headset Status | *782 |
| Headset Auto Answer | *780 |
| Headset/Handset Mute | *783 |
| MLX Display Label | |
| Headset Hang Up | Hdset, Hang Up |
| Headset Status | Hdset, Status [Hdset, Stat] |
| Headset Auto Answer | Hdset, Auto Answer [Hdset, Auto] |
| Headset/Handset Mute | Hdset, Mute [Hdset, Mute] |

Description

Four Headset Options are provided for MLX telephone users and operators who have an optional headset adjunct:

- Headset Hang Up (except for Queued Call Console)
- Headset Status
- Headset Auto Answer
- Headset/Handset Mute

Headset Hang Up

When programmed on a button on an MLX telephone or MLX Direct-Line Console (DLC), Headset Hang Up serves two purposes:

- Programming the **Headset Hang Up** button automatically turns on headset operation for that extension, enabling the user or operator to answer and make calls using the headset instead of the handset. Removing the **Headset Hang Up** from an MLX telephone or MLX DLC automatically turns off headset operation for that extension.
- The user or operator presses the **Headset Hang Up** button to disconnect a headset call. The button replaces switchhook operation, which is disabled when headset operation is active. (Pressing the button has no effect on its LEDs, which are always off.)

A **Headset Hang Up** button must be programmed for an MLX telephone or MLX DLC through centralized telephone programming for the user or operator to be able to use the headset.

A **Headset Hang Up** button is not needed and cannot be programmed on a Queued Call Console (QCC).

To give control of headset/handset operation to an MLX telephone user or MLX DLC operator who has a **Headset Hang Up** button, a **Headset Status** button can also be programmed, as described in the next section. On a telephone or console with a **Headset Hang Up** button, but without a **Headset Status** button, headset operation is always on.

NOTE:

If an MLX telephone or MLX DLC has a **Headset Status** button and/or a **Headset Auto Answer** button (described in the following two sections) in addition to a **Headset Hang Up** button, the **Headset Hang Up** button can be removed through centralized programming without removing the **Headset Status** or **Headset Auto Answer** button. If either of these features is on, the green LED next to the button stays on. However, the telephone or console is no longer in headset operation and neither the **Headset Status** nor the **Headset Auto Answer** button has any effect, whether on or off, until a **Headset Hang Up** button is reprogrammed for the extension.

Headset Status

When a **Headset Hang Up** button is programmed on an MLX telephone or MLX DLC, Headset Status is automatically turned on. Programming a **Headset Status** button in addition allows the user or operator to turn headset operation off and on manually. With headset operation on (green LED next to **Headset Status** button is on), the user or operator answers and makes calls with the headset. With headset operation off (green LED next to **Headset Status** button is off), the user or operator answers and makes calls with the handset.

Two things are necessary for an MLX telephone user or MLX DLC operator to use the Headset Status feature:

- A **Headset Hang Up** button must be programmed, as described in the previous section.
- A **Headset Status** button must be programmed on the telephone or console, either through extension programming or through centralized telephone programming.

A **Headset Status** button is a fixed feature on a QCC and cannot be deleted or changed.

To use Headset Auto Answer, Headset/Handset Mute, or Headset Hang Up on a telephone or console with a **Headset Status** button, Headset Status must be on.

When Headset Status is on, switchhook operation is disabled. The handset or speakerphone can be used to make or answer a call, but the only way for the user or operator to disconnect from a call is by pressing the **Headset Hang Up** button. The user or operator can turn off the headset and switch back to switch hook operation by pressing the **Headset Status** button. (The green LED next to the button goes off.)

Headset Auto Answer

A **Headset Auto Answer** button allows an MLX telephone user or operator with a headset to be connected automatically to a ringing call. Headset Status must be on, as described in the two previous sections, before Headset Auto Answer can be used.

When Headset Auto Answer is turned on (green LED next to **Headset Auto Answer** button is on), the user or operator hears zip tone through the headset to indicate an incoming call. Following the tone is a brief pause, during which the microphone is disabled to prevent the user's or operator's private conversation from being heard by the caller.

If a user with Headset Auto Answer on presses the button with a ringing call (for example, if Ringing/Idle Line Preference is turned off), the call is answered without the user hearing zip tone.

Headset Auto Answer can be turned on and off during a call without disconnecting the caller and takes effect immediately.

Headset Auto Answer does not automatically answer voice-announced calls.

When the user or operator is on a call, Headset Auto Answer is turned off; calls are not answered automatically until the caller hangs up or the user or operator presses the **Headset Hang Up** button to disconnect the call.

When the user or operator has a call on hold or is in the process of transferring a call or setting up a conference, Headset Auto Answer is also turned off. If the user or operator pressed the **Conference**, **Hold**, or **Transfer** button, he or she must press the **Headset Auto Answer** button to turn the feature back on before another call can be answered automatically.

Two things are necessary for an MLX telephone user or MLX DLC operator to use the Headset Auto Answer feature:

- A **Headset Hang Up** button must be programmed, as described earlier in this section.
- A **Headset Auto Answer** button must be programmed on the telephone or console, either through extension programming or through centralized telephone programming.

A **Headset Auto Answer** button is a fixed feature on a QCC and cannot be deleted or changed.

Headset/Handset Mute

Headset/Handset Mute allows an MLX telephone user or operator to turn the microphone in the headset or handset off and on. The user or operator can then talk privately with another person in the same room without the caller hearing the conversation. If headset operation is on, Headset/Handset Mute turns off the headset microphone; if headset operation is off, Headset/Handset Mute turns off the handset microphone. The red LED next to the **Headset/Handset Mute** button is on when the headset or handset microphone is off; it is off when the headset or handset microphone is on.

When headset operation is off, the handset microphone can be turned off using Headset/Handset Mute only when the user lifts the handset.

When headset operation is on, the user should press the programmed **Headset Hang Up** button to end an outside call even if the caller hangs up.

For an MLX telephone user or MLX DLC operator to use Headset/Handset mute, a **Headset/Handset Mute** button must be programmed on the telephone or console, either through extension programming or through centralized telephone programming.

A **Headset/Handset Mute** button is a fixed feature on a QCC and cannot be deleted or changed.

Considerations and Constraints

The headset, handset, and speakerphone can be used only one at a time.

Headset Hang Up cannot be programmed on a QCC.

Headset Options cannot be used on analog multiline telephones or on single-line telephones.

A headset user must manually select a line button or **Call** button (on the QCC) before making an inside or outside call.

A user can press the **Speaker** button to move the call from the headset to the speakerphone.

When two or more users answer the same call on a **Shared SA** or Personal Line button, the red and green LEDs next to the button go on, but only one person has a talk path with the caller. The use of Privacy is recommended to eliminate competition for the same call.

Telephone Differences

Queued Call Consoles

A QCC does not have a **Headset Hang Up** button, nor can the button be programmed. Headset operation is automatically available, and **Headset Auto Answer**, **Headset/Handset Mute**, and **Headset Status** are fixed buttons on a QCC.

The function of disconnecting calls served by the Headset Hang Up feature is replaced with the Release, Forced Release, Camp-On, and Automatic Release features.

Other Multiline Telephones

NOTE:

Headset Options apply to MLX telephones and consoles only.

The telephone user or operator cannot use feature codes or extension programming to activate Headset Hang Up. This feature must be programmed on a button through centralized telephone programming.

The telephone user or operator cannot use feature codes to turn Headset Auto Answer, Headset/Handset Mute, or Headset Status on or off. These features must be programmed on buttons through extension programming or centralized telephone programming. MLX display telephone users can select the feature from the display only during extension programming.

Feature Interactions

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|---------------------------------|--|
| Auto Dial | If headset operation is turned on at the telephone or console, the user must select a line button before dialing an extension or an outside number using Auto Dial. |
| Automatic Line Selection | Automatic Line Selection does not work when an MLX telephone or console is in headset operation. A headset user must select a line manually before making a call. |
| Barge-In | If Barge-In is used to contact a user with Headset Auto Answer turned on, the call is answered automatically. |
| Callback | Callback calls are answered automatically when Headset Auto Answer is turned on, but the user hears the dequeuing tone instead of zip tone. When both calling and receiving users have headsets with Headset Auto Answer on, the person being called hears zip tone when the Callback call is completed, but the Callback originator does not hear zip tone or dequeuing tone. |

| | |
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| Conference | Headset Auto Answer is turned off automatically while a user or operator is setting up a conference, and must be turned on manually to resume using the feature. |
| Do Not Disturb | If the MLX telephone user with Headset Auto Answer turned on uses Do Not Disturb, any calls that override Do Not Disturb (such as Barge-In calls and Callback calls) are answered automatically. |
| Hold | Headset Auto Answer is turned off automatically when a user or operator puts a call on hold and must be turned on manually to resume using the feature. |
| Paging | A user or operator with a headset operation active hears Group Paging over the speakerphone. |
| Park | If a user or operator has a call parked, another call can be answered automatically by using Headset Auto Answer. |
| Privacy | Privacy should be programmed when headset users with Headset Auto Answer on have Shared SA buttons or share one or more Personal Lines. Privacy keeps the users from competing for the same call. When two or more users answer the same call on a Shared SA or Personal Line button, the red and green LEDs next to the button go on, but only one person has a talk path with the caller. |
| Ringling/Idle Line Preference | Ringling Line Preference does not operate if Headset Auto Answer is turned off while headset operation is active. To answer a call, the user or operator must press the button with the ringling call. Idle Line Preference does not operate when headset operation is active. The user or operator must select a line button manually before making an inside or outside call. |
| Ringling Options | Headset Auto Answer does not automatically answer calls ringling on buttons programmed for No Ring. The user or operator must manually select the button to answer the call. When Abbreviated Ring is programmed, the user hears the abbreviated ring if another call rings while he or she is on a call. |
| Transfer | When an MLX telephone user (except for a QCC operator) transfers a call, Headset Auto Answer is turned off and must be turned on manually to resume using the feature. |

Hold

At a Glance

| | |
|-----------------------------|--|
| Users Affected | Telephone users, operators |
| Reports Affected | Operator Information, System Information |
| Mode | All |
| Telephones | All |
| Feature Code | |
| Hold | 771 |
| Hold Release | * * |
| System Programming | Change Hold Disconnect Interval: <ul style="list-style-type: none"> ● Lines/Trunks → More → HoldDiscnct Enable or disable DLC Operator Automatic Hold for all DLC operators: <ul style="list-style-type: none"> ● Operator → DLC Hold Change Operator Hold Timer for all DLC and QCC operators: <ul style="list-style-type: none"> ● Operator → Hold Timer Specify whether calls on hold return to QCC queue after Operator Hold Timer has expired twice: <ul style="list-style-type: none"> ● Operator → Queued Call → Hold Rtrn Select Automatic Hold or Automatic Release for all QCC operators: <ul style="list-style-type: none"> ● Operator → Queued Call → HoldRelease |
| Factory Settings | |
| Hold Disconnect Interval | Long (450ms) |
| DLC Operator Automatic Hold | Disabled |
| Operator Hold Timer | 60 sec (range 10-255 sec) |
| Hold Timer for users | 60 sec (fixed) |
| QCC Hold Return | Remain on Hold |
| QCC Hold Release | Automatic Release |

Description

Hold allows a user to leave a call temporarily, for example, to take another call, look up information, or activate a feature.

When a user, except for a Queued Call Console (QCC) system operator, puts an outside call on hold, the green LED next to the line button flashes at a faster rate to distinguish the call from calls put on hold by other users.

An outside caller on hold hears Music-on-Hold, if programmed, or silence.

If a call on hold is not picked up within a set length of time, the person who put the call on hold hears a reminder — a beep if the person is a telephone user, or an abbreviated ring if the person is a Direct-Line Console (DLC) or QCC system operator. This Hold Timer is fixed at 60 seconds for telephone users. It is programmable for DLC and QCC operators, as described below.

At an MLX display telephone, the message `Call On Hold` appears briefly on the display when the user first puts a call on hold. This message reappears briefly each time the Hold Timer expires.

Five system-wide Hold options can be set through system programming:

- **Hold Disconnect Interval** determines how long the system waits before releasing the trunk when an outside caller on hold on a loop-start trunk hangs up. This interval can be set to the following values:

- Long (the factory-set default) — 450 ms
- Short — 50 ms

The Hold Disconnect Interval should be programmed to match the local telephone company's disconnect timing: long if disconnect is unreliable, short if disconnect is reliable.

The Hold Disconnect Interval applies to all telephone users and system operators.

- **DLC Operator Automatic Hold** determines what happens when a DLC operator is on a call and presses another line button, an **Auto Dial** button, or a Direct Station Selector (**DSS**) button. This option can be set to the following values:

- Enabled — the active call is automatically put on hold. This prevents accidental disconnection of callers.
- Disabled (the factory-set default) — the active call is disconnected. This allows the operator to disconnect one call and answer or dial another by pressing a single button.

The DLC Operator Automatic Hold setting applies only to DLC operators.

- **Operator Hold Timer** determines how long a call stays on hold before the system reminds the DLC or QCC operator that it has not been picked up. The operator hears a reminder (abbreviated ring) when the timer expires. This timer can be set to a value of 10 to 255 seconds (the factory-set default is 60 seconds).

If a call is ringing at the console when the timer expires, the reminder is delayed for 10 seconds so that the operator will have a chance to hear it. (If after 10 seconds the call is still ringing or a new call is ringing, the reminder is delayed for another 10 seconds, and so on.)

The Operator Hold Timer applies only to DLC and QCC operators.

- **QCC Hold Return** determines what happens to a call that a QCC operator has put on hold and that has not been picked up after the Operator Hold Timer has expired twice. (Note that the timer is not counted as having expired until the operator actually hears the reminder.) This option can be set to the following values:
 - Remain on Hold (the factory-set default) — the call remains on hold until picked up. The QCC operator continues to hear an abbreviated ring every time the Operator Hold Timer expires.
 - Return to Queue — the call returns to the QCC queue. The caller hears ringback.

The QCC Hold Return option applies only to QCC operators.

- **QCC Hold Release** determines what happens when a QCC operator is on a call and presses another **Call** button. This option (which is equivalent to DLC Operator Automatic Hold for DLC operators) can be set to the following values:
 - Automatic Hold — the active call is put on hold. This prevents accidental disconnection of callers.
 - Automatic Release (the factory-set default) — the active call is released. This allows the operator to disconnect one call and answer another by pressing a single button.

The Hold Release option applies only to QCC operators.

Considerations and Constraints

The factory setting for the Hold Disconnect Interval is long (450 ms), since that is the interval used by most local telephone companies.

If the Hold Disconnect Interval set for the system does not match that of the local telephone company, the system may have the following problems with calls on hold:

- If the interval is shorter than the setting at the local central office, callers on hold may be disconnected.
- If the interval is longer than the setting at the central office, the LED next to the line button continues to flash after a caller on hold hangs up.

Both parties on an inside call cannot put each other on hold. If a user presses the **Hold** button while waiting on hold on an inside call, the call is disconnected.

If two users with shared line buttons — for example, shared Personal Line or **Shared SA** buttons — have put the same call on hold, and if a third user with the same shared button then picks up the call, the green LEDs on the first two extensions continue to flash, and do not show that the call has been picked up. When the third extension hangs up, the LED next to the button goes off on all extensions.

Telephone Differences

Direct-Line Consoles

When DLC Operator Automatic Hold is enabled, a DLC operator can put an active call on hold by pressing another line button or **DSS** button.

If the system is programmed for One-Touch Transfer, the operator can press an **Auto Dial** or **DSS** button to put an active inside or outside call on hold and initiate a transfer, whether or not DLC Operator Automatic Hold is enabled.

If the system is not programmed for One-Touch Transfer, the operator can press an **Auto Dial** or **DSS** button to put an active *outside* call on hold and initiate a transfer, whether or not DLC Operator Automatic Hold is enabled. (This capability is called *One-Touch Hold*.)

The DLC operator hears an abbreviated ring as a reminder that a call is on hold every time the Operator Hold Timer expires.

Queued Call Consoles

Pressing the **Hold** button to put a caller on hold makes the QCC operator available for incoming calls from the QCC queue.

The QCC operator hears an abbreviated ring as a reminder that a call is on hold the first two times the Operator Hold Timer expires.

If the operator does not pick up a call by the time the timer expires twice, the Hold Return option determines whether the call remains on hold or returns to the QCC queue. If this option is programmed for calls to remain on hold, the operator hears the abbreviated ring every time the Operator Hold Timer expires and no call is ringing on the console. If the option is programmed for calls to return to the queue, each call on hold at the QCC is timed individually. (The Operator Hold Timer is applied separately to each **Call** button.)

When a held call returns to the queue after the second hold reminder, the call is identified by call type and by the name and extension number of the system operator who put it on hold. The second line of the QCC display also shows the caller information.

Other Multiline Telephones

Multiline telephones have built-in **Hold** buttons.

When a call is first put on hold, the display on an MLX telephone briefly shows *Call On Hold*. This message reappears briefly each time the Hold Timer expires.

Single-Line Telephones

A single-line telephone user can put a call on hold by sending a switchhook flash — pressing and releasing the **Recall** or **Flash** button or the switchhook, depending on the telephone model.

NOTE:

Some single-line telephones, such as AT&T models 2500YMGK and 2500MMGK, use a timed disconnect. On these telephones, pressing the switchhook disconnects the call. The user must use the **Recall** button instead of the switchhook to send a switchhook flash.

If a single-line telephone user with a call on hold hangs up, the call is disconnected; therefore, Park should be used instead of Hold.

Feature Interactions

| | |
|---------------------|---|
| Auto Dial | The Hold button is used to enter the Pause special character in a telephone number programmed on an Auto Dial button. |
| Callback | Pressing the Hold button while waiting for a queued Callback call disconnects the call. If a DLC operator presses another line button, an Auto Dial button, or a DSS button while waiting on the line for a queued Callback call, the call is disconnected, even if DLC Operator Automatic Hold is enabled. |
| Call Waiting | A person with all calls on hold cannot hear the Call Waiting tone. |
| Conference | <p>When adding other participants to a conference, the conference originator hears the hold reminder if the conference is on hold for longer than one minute (if the originator is a telephone user) or the Operator Hold Timer setting (if the originator is an operator). If DLC Operator Automatic Hold is programmed and used by a DLC operator while setting up a conference, the entire conference goes on hold.</p> <p>Both parties on an inside call cannot put each other on hold. If a user presses the Hold button while waiting on hold for a conference initiated by another user (an inside call) or if the user presses the Conf button while waiting on hold on an inside call, the entire conference call is disconnected.</p> |
| Coverage | Coverage calls answered by any type of receiver can be put on hold. The Hold Timer or Operator Hold Timer applies to a Coverage call on hold. |
| Directories | The Hold button is used to enter the Pause special character in a telephone number programmed as a System Directory, Extension Directory, or Personal Directory listing. |

| | |
|---|--|
| Disallowed Lists | The Hold button is used to enter a wild card character in a Disallowed List entry. |
| Display | <p>When a call is first put on hold, the display on an MLX telephone briefly shows <code>Call On Hold</code>. This message reappears briefly each time the Hold Timer expires.</p> <p>On a QCC only, when a held call returns to the queue after the second hold reminder, the call is identified by call type and by the name and extension number of the system operator who put it on hold. The second line of the QCC display also shows the caller information.</p> |
| Group Calling | A Calling Group member who has put a call on hold is considered unavailable for incoming calls. A user waiting in the Calling Group queue cannot put the call on hold. |
| Headset Options | Headset Auto Answer is automatically turned off when an MLX telephone user puts a call on hold. |
| Inspect | If the user presses the Hold button while in Inspect mode, Inspect is canceled. The system puts the active call (if there is one) on hold. |
| Multi-Function Module | A single-line telephone connected to an MFM cannot put a call on hold because the MFM cannot send a switchhook flash. |
| Paging | A Speakerphone Paging call can be put on hold only by the originator. However, when Speakerphone Paging is used to make an inside voice-announced call, either the originator or the person being called can put the call on hold. |
| Park | <p>If a single-line telephone user with a call on hold hangs up, the call is disconnected; therefore, Park should be used instead of Hold.</p> <p>When a user or system operator parks a call received on a Personal Line button and it is picked up at another telephone and then put on hold, other users who share the Personal Line cannot press the line button and pick up the call.</p> |
| Personal Lines, Pickup, and Transfer | <p>The Hold Timer or Operator Hold Timer applies to a call on hold for transfer. The user or system operator hears a reminder (a beep or abbreviated ring) after the timer expires.</p> <p>If a call is received on a Personal Line and is transferred to another user who receives the call on an SA or ICOM button and then puts the call on hold, another user who shares the Personal Line cannot select the shared Personal Line button and pick up the call. If for some reason the person who received the transfer and put the call on hold cannot return to the call, another user must use Pickup to pick up the call. (For example, a system operator can take a message and then disconnect the caller.)</p> |

| | |
|--|--|
| Recall | Single-line telephones use a switchhook flash to put a call on hold, by pressing and releasing the Recall or Flash button or the switchhook, depending on the telephone model. |
| Speed Dial | The Hold button is used to enter the Pause special character in a Personal Speed Dial or System Speed Dial telephone number. |
| System Access/ Intercom Buttons | If a call is put on hold on an SA or Shared SA button, it can be picked up at the principal extension's SA button or at any other Shared SA button corresponding to the button with the held call. The hold reminder is heard only at the extension that put the call on hold. |

Idle Line Preference

See Automatic Line Selection and Ringing/Idle Line Preference.

Inside Dial Tone

At a Glance

| | |
|--------------------|----------------------------|
| Users Affected | Telephone users, operators |
| Reports Affected | System Information |
| Mode | All |
| Telephones | All |
| System Programming | Options → InsideDial |
| Factory Setting | Inside dial tone |

Description

The system's inside dial tone is heard when a user lifts the handset or presses the **Speaker** button after an **SA** or **ICOM** button is selected. Two choices are available for inside dial tone:

- **System inside dial tone:** Makes it easy to distinguish an inside line from an outside line.
- **Outside dial tone:** Required by some software applications that do not recognize inside dial tone, such as voice messaging systems or modems connected to the system. With this setting, inside dial tone sounds the same as outside dial tone.

Inspect

At a Glance

| | |
|----------------|----------------------------|
| Users Affected | Telephone users, operators |
| Mode | All |
| Telephones | MLX display telephones |

Description

Inspect allows an MLX display telephone user who is on a call to see call information about another call that is ringing, alerting, or on hold.

Call information includes whether it is an inside or outside call, any programmed labels for the caller (such as the inside caller's name or the label assigned to the outside line), and how the call came to the user (transferred, Coverage call, forwarded, etc.). Inspect can also be used to inventory what is programmed on the telephone's buttons.

To use Inspect to screen incoming calls while on another call or to identify callers on hold on the telephone, the MLX display telephone user presses the **Inspect** button and then presses the line button with the alerting incoming or held call. The call information is displayed on the Inspect screen. To Inspect a programmed button, the user presses the **Inspect** button and then presses the programmed button. The name of the feature programmed on the button is displayed on the Inspect screen. However, beginning with Release 2.0 systems, pressing the **Last Number Dial** or **Saved Number Dial** button shows the telephone number stored; if no number has been stored on either of these buttons, the feature name is displayed.

Considerations and Constraints

If the company subscribes to special services, such as AT&T's INFO2 automatic number identification (ANI) service, the user can see the outside telephone number of the person calling.

NOTE:

The availability of the caller identification information may be limited by local-serving (caller's) jurisdiction, availability, or central office equipment.

If a line button is being inspected, it cannot be used to make or receive a call.

If a user inspects a line that someone else is using, the display shows that the line is in use.

If Inspect is activated and someone makes a voice-announced call or a Group Page to the user, the Inspect feature is canceled and the Home screen is displayed.

If the user presses the **Feature**, **Menu**, or **Home** button while Inspect is activated, Inspect is canceled.

If a user is active on a call while using Inspect and presses a feature button, for example, the **Hold**, **Transfer**, or **Drop** button, the system cancels Inspect and attempts to activate the feature.

Telephone Differences

Direct-Line Consoles

Inspect cannot be used on analog Direct-Line Consoles (DLCs).

Queued Call Consoles

When a conference participant joins a conference by using a shared Personal Line or **Shared SA** button, the QCC display is updated to include this participant. However, if the QCC operator uses the Inspect feature to verify the number of participants, the number shown on the display does not include participants joining the conference on the **Shared SA** or Personal Line button.

If a QCC operator presses any of the buttons programmed with fixed QCC features (for example, a **Call**, **Start**, or **Source** button) while in the Inspect mode, the console remains in Inspect mode. However, if the operator presses the **Feature**, **Transfer**, **HFAI**, **Conf**, **Mute**, **Drop**, **Speaker**, or **Hold** button, the console is removed from the Inspect mode.

Other Multiline Telephones

Inspect is available only on MLX display telephones.

Single-Line Telephones

Inspect cannot be used on single-line telephones.

Feature Interactions

- Alarm (Operator)** Inspect can be used on an MLX DLC or a Queued Call Console (QCC) to display the number of alarms.
- Conference** If the user presses the **Conference** button while Inspect is activated, Inspect is canceled and the system tries to activate the Conference feature.
- Direct Station Selector** Inspect can be used to display limited information, such as extension number and label and number of messages, for each **DSS** button. To use Inspect, the system operator presses the **Page** button for the range of extensions, then the **Inspect** button, then the individual **DSS** button for an extension. Inspect must be activated separately for each page on the DSS — to inspect another page of extensions, the operator must press the **Home** button and repeat the process.

When the operator inspects a **DSS** button associated with an extension, Line 1 of the display shows the extension, the label associated with the extension, if any, and the number of messages that have been left for that extension, if any. If the extension has posted a message, Line 2 shows the Posted Message.

In a Release 2.0 (or later) system, the operator can inspect a **DSS** button whose red LED is on to see whether the extension is busy or using Do Not Disturb. If the user at the extension has turned on Do Not Disturb, the Do Not Disturb message is also posted and appears on the operator’s display. (However, the message may also mean that the user has posted the message without turning on the Do Not Disturb feature.)
- Drop** If the user presses the **Drop** button while active on a call with Inspect activated, Inspect is canceled and the system attempts to activate the Drop feature.
- Group Calling** Any MLX telephone user can inspect the number of calls in the calling group queue by pressing the **Inspect** button and then pressing a button programmed with the calling group’s extension (**In-Queue Alarm** button). The display shows the label associated with the calling group and the number of calls in queue.
- Hold** If the user presses the **Hold** button while active on a call with Inspect activated, Inspect is canceled and the system tries to put the call on hold.

- Last Number Dial** Starting with Release 2.0 systems, if a **Last Number Dial** button is inspected, the display shows the last number stored for dialing. If no number was stored, the feature name is displayed.
- Paging** If the user gets a voice-announced inside call or a Group Speakerphone Page while using the Inspect feature, the Inspect feature is canceled and the user is returned to the Home screen.
- Saved Number Dial** Starting with Release 2.0 systems, if a **Saved Number Dial** button is inspected, the display shows the last number stored for dialing. If no number was stored, the feature name is displayed.
- Transfer** If a user presses the **Transfer** button while active on a call with Inspect activated, Inspect is canceled and the user is returned to the Home screen.

Integrated Administration

At a Glance

| | |
|-----------------------------------|---|
| Users Affected | System manager, installer |
| Reports Affected | Direct Group Calling Information Group Coverage Information GS/LS Trunk Information System Information |
| Mode | Key and Hybrid/PBX |
| Telephones | All |
| Factory Settings | |
| Automated Attendant Calling Group | 770 |
| Call Answer Calling Group | 7926 |
| FAX Response Calling Group | 7924 |
| Information Service Calling Group | 7927 |
| Message Drop Calling Group | 7928 |
| Voice Mail Calling Group | 7925 |
| Coverage Group | 30 (range 1-30) |
| Reliable Disconnect | yes |
| Delay Ring | 2 rings (range 1-6 rings) |
| Coverage Delay Ring | 3 rings (range 1-9 rings) |
| VMS Transfer Return Interval | 6 rings (range 0-9 rings) |
| Transfer Return Time | 6 rings (range 0-9 rings) |

NOTE:

Integrated Administration is available with Release 2.0 (or later) systems.

Description

The Integrated Administration capability of Integrated Solution III (IS-III) simplifies the programming of common information for the communications system (the “switch”), AUDIX Voice Power, and, if it is also installed, AT&T FAX Attendant System™. Since the AUDIX Voice Power and FAX Attendant applications use some of the same information programmed on the switch, Integrated Administration lets the installer or system manager make changes or additions to this information just once, instead of on both sides of the connection. Using Integrated Administration reduces programming time and effort and ensures that the switch and the applications are in agreement.

The switch and the applications share the following information:

- System numbering of extensions, trunks, and pools
- System labeling — the user or other name associated with each extension, trunk, and pool
- The Coverage Group that sends its calls to the applications
- The Calling Group set up for each service of the applications
- The Reliable Disconnect setting for loop-start trunks
- The Delay Ring and Coverage Delay Interval settings
- The Transfer Return Time and VMS Transfer Return Interval

Integrated Administration consists chiefly of three related functions accessed from the Integrated Solution III menu (for users) or the Integrated Solution Maintenance menu (for qualified technicians only):

| | |
|-------------------------------------|--|
| Extension Directory Setup | (on the Technician Maintenance menu, for qualified technicians only) is used during installation to read all switch extensions and extension labels into the database of extensions used by the applications. |
| Extension Directory | allows the technician or system manager to add, change, or delete extensions, change extension labels, and add or delete subscribers to AUDIX Voice Power or AUDIX Voice Power/FAX Attendant. |
| System Programming/ Switch Admin | accessed through the AUDIX Voice Power or AUDIX Voice Power/FAX Attendant menu, allows the technician or system manager to program common information used by the switch and the applications. Through this selection, the user configures call handling by Automated Attendant and adds or deletes trunks and pools for Call Answer, FAX Response, Information Service, Message Drop, and Voice Mail. |

Integrated Administration provides the following additional functions:

Application Switch Defaults (on the Technician Maintenance menu, for qualified technicians only) displays current values and allows the user to change the following settings used by the applications:

- Coverage Group
- Automated Attendant Calling Group
- Call Answer Calling Group
- FAX Response Calling Group
- Information Service Calling Group
- Message Drop Calling Group
- Voice Mail Calling Group

This screen also displays the following current defaults that will be used when programming the applications and, for comparison purposes, the current values set on the switch:

- Reliable Disconnect
- Delay Ring
- Coverage Delay Interval
- VMS Transfer Return Interval
- Transfer Return Time

Using this screen, the user can change the values for the applications only. A difference between the AUDIX Voice Power and switch default columns, other than at initial installation, indicates that the values have been changed through system programming on the switch, using the programming console or SPM. This information can be helpful in troubleshooting problems.

Backup Files allows the user to back up all Integrated Administration programming to tape. (Note that this function backs up the application database, and is not the same as the switch programming backup available through SPM.)

Restore Files (on the Technician Maintenance menu, for qualified technicians only) allows the user to restore all Integrated Administration programming from tape. (Note that this function restores the application database, and is not the same as the switch programming restore available through SPM.)

If the technician or system manager changes extension numbering on the switch, using the MLX-20L console or SPM, the switch and the application database will no longer be in agreement. To reduce the chance that such changes will disrupt communication between the switch and the applications, Integrated Administration includes an automatic reconciliation program that

runs every day at 3:00 a.m., comparing the application database to the switch programming and bringing the two into agreement. The program makes changes, as necessary, only to the application database, according to the rules listed in Table 20. It does not change the switch programming.

Table 20. Database Reconciliation Rules

| Extension appears in... | | |
|--------------------------------|-----------------------------|---|
| Switch | Application Database | Action |
| yes | yes | None. |
| yes | no | Extension is added to database. Can be added as AUDIX Voice Power or AUDIX Voice Power/FAX Attendant subscriber through Extension Directory screen. |
| no | yes (regular extension) | Extension is deleted from database and removed as an AUDIX Voice Power or AUDIX Voice Power/FAX Attendant subscriber. |
| no | yes (special extension) | Extension is retained as special-purpose extension in database. |
| yes | yes (special extension) | Extension is converted from special-purpose extension to regular extension in database. |

Platform Requirements

IS-III is delivered already installed and configured with the applications ordered. The system consists of an AT&T Master Controller II+ or Master Controller III running UNIX® System V Release 3.2.2. Various hardware configurations are available; see the *Integrated Solution III Installation and Maintenance Guide* for details.

For AUDIX Voice Power, an 012 module (with a ring generator) is required in the system to provide the tip/ring interface.

The number of voice channels required for AUDIX Voice Power depends on the number of incoming trunks, the number of subscribers programmed for the system, and the number of busy-hour calls. Table 21 shows these requirements.

Table 21. Voice Channels Required

| <u>No. of Channels Required</u> | <u>Trunks</u> | <u>Subscribers</u> | <u>Busy-hour Calls</u> |
|-------------------------------------|---------------|--------------------|------------------------|
| 2 | 1 to 6 | 1 to 20 | 1 to 20 |
| 4 | 7 to 18 | 21 to 60 | 21 to 60 |
| 6 | 19 to 24 | 61 to 80 | 61 to 80 |
| 8 | 25 to 42 | 81 to 200 | 81 to 200 |
| 12 | Over 42 | 201 to 300 | 201 to 300 |

Installation Overview

The qualified technician uses Integrated Administration during installation as follows. (This list describes a sequence of tasks, not a step-by-step procedure. See the AUDIX Voice Power or FAX Attendant *System Manager's Guide* for complete instructions on programming the applications and *System Programming* for complete instructions on programming the switch.) Note that the sequence of tasks differs, depending on the circumstances of installation:

- If a Release 2.0 switch and IS-III are both being installed for the first time, the technician must do some initial programming on the switch as described in Step 1.
 - If IS-III is being installed on an existing Release 2.0 switch, the technician can skip Step 1.
1. *On installation of both the switch and IS-III*, program the following basic system operating conditions on the switch. The technician will typically use SPM in surrogate mode for this step, but can also use the programming console with an actual switch.
 - Mode of operation (Hybrid/PBX or Key only for Integrated Administration)
 - System renumbering
 - System operator positions
 - Phantom extensions
 - Assignment of trunks to pools
 2. Select `Application Switch Defaults` from the IS-III Technician Maintenance menu, and, if necessary, change any of the values displayed for the applications.
 3. Select `Extension Directory Setup` from the Technician Maintenance menu. This step reads the switch extension directory (including any labels already programmed on the switch) into the application database.

4. Select `Extension Directory` and on the resulting screens, program the following:
 - Assignment of extensions as AUDIX Voice Power subscribers (if FAX Attendant is installed, this step also assigns the extensions as FAX Attendant subscribers)
 - Assignment of special-purpose extensions
 - Labeling of extensions

5. Select `System Programming/Switch Admin` from the AUDIX Voice Power or AUDIX Voice Power/FAX Attendant menu, and program any of the following services, as applicable.

On first use of Integrated Administration, the user automatically steps through each of these services:

- Automated Attendant (Immediate, Delayed, or Night Service call handling and lines and pools)
- Call Answer (lines and pools)
- Information Service (lines and pools)
- Message Drop (lines and pools)
- Voice Mail (lines and pools)
- FAX Response (lines and pools)

On subsequent uses of Integrated Administration, select `System Programming/Switch Admin` from the AUDIX Voice Power or AUDIX Voice Power/FAX Attendant menu, then select `System Programming/Switch Admin Form`, then select the specific service to be programmed from the list above.

NOTE:

During initial Integrated Administration programming for an existing switch, the user should *not* assign any lines or pools to the Calling Groups set up for services. Otherwise, the lines would begin ringing in to the service before greetings or other service-specific options were programmed. The user should go on to Step 6 and finish programming the application, then return to Step 5 through the System Programming/Switch Admin Menu screen to add lines and pools.

6. Program any application options that are not switch-related (such as Outcalling and voice menus and prompts) through the AUDIX Voice Power or AUDIX Voice Power/FAX Attendant menu.
7. *On installation of both the switch and IS-III*, exit from IS-III, then perform all remaining switch programming that is not application-related, using SPM or the programming console.

Operation

The user accesses Integrated Administration in one of the following ways:

- Log in to IS-III as **is** and enter a password, if applicable. The Integrated Solution III menu (for users) appears, with the following selections for Integrated Administration:
 - AUDIX Voice Power (AVP)
 - or AUDIX Voice Power/FAX Attendant (AVP/FA)
 - Extension Directory
 - User Maintenance

- Log into IS-III as **maint** and enter the maintenance password. The Integrated Solution Maintenance menu (for qualified technicians only) appears, with the following selections for Integrated Administration:
 - AUDIX Voice Power (AVP)
 - or AUDIX Voice Power/FAX Attendant (AVP/FA)
 - Extension Directory
 - Technician Maintenance

(Other selections on these menus, including System Programming and Maintenance (SPM), are used for other purposes than integrated Administration.)

The Integrated Administration selections on these menus are used to access the screens described in the following sections.

On data entry screens described below, the screen-labeled options listed in Table 22 are displayed, as appropriate for each screen, and are selected by pressing the corresponding function key.

Table 22. Screen-Labeled Function Keys for Integrated Administration

| Label | Key | Action |
|--------------|-------------|--|
| Add | [F1] | Display a pop-up form for adding information, such as adding lines and pools to the Calling Group for a service. |
| Cancel | [F6] | Cancel any changes made on the current screen and return to the previous screen. |
| Chg-Key | [F8] | Toggle between two sets of screen-labeled selections. (For example, this table shows two different selections — Choices and Delete — corresponding to [F2] . Chg-Key changes the label to the alternative selection.) |
| Choices | [F2] | Display a list of valid choices for the current field. |

Continued on next page

Table 22. – Continued

| Label | Key | Action |
|--------------|---------------------|--|
| Delete | [F2] | Display a pop-up form for deleting information, such as deleting lines and pools from the Calling Group for a service. |
| Display | [F1] or [F4] | Display information about the record on the current screen, such as the label associated with an extension. |
| Frm-Mgmt | [F7] | (Frame Management) Display options for managing the screen, such as refresh and resize. |
| Help | [F1] | Display help for the current screen. (Help is available for every Integrated Administration screen.) |
| NextPage | [F5] | On a multiple-page screen, go to the next page. |
| Next-Rec | [F5] | Display the next record, such as the next extension, on the current screen. |
| PrevPage | [F4] | On a multiple-page screen, return to the previous page. |
| Prev-Rec | [F4] | Display the previous record, such as the previous extension, on the current screen. |
| Save | [F3] | Validate and save the information on the current screen, updating the application database and/or the switch as appropriate. |

NOTE:

In the “Switch Programming Results” sections that follow, any information that is sent to the switch is sent after the user presses **[F3]** (*Save*). This information replaces existing switch programming of the items sent.

Application Switch Defaults

The qualified technician accesses the Application Switch Defaults screen from the Technician Maintenance menu. Figure 14 shows this screen, both as it appears with only AUDIX Voice Power installed and as it appears with both AUDIX Voice Power and FAX Attendant installed. A description of its use follows.

| Application Switch Defaults | | | |
|--------------------------------------|----------|-------------|----------------|
| AUDIX Voice Power Switch Defaults | | | |
| Automated Attendant - Calling Group: | 770 | | |
| Call Answer - Calling Group: | 7926 | | |
| Information Service - Calling Group: | 7927 | | |
| Message Drop - Calling Group: | 7928 | | |
| Voice Mail - Calling Group: | 7925 | | |
| Coverage Group: | 30 | | |
| | | AVP Default | Current Switch |
| Reliable Disconnect: | [yes/no] | | no |
| Delay Ring: | 2 | | 2 |
| Coverage Delay Ring: | 3 | | 3 |
| VMS Transfer Return Interval: | 6 | | 4 |
| Transfer Return Time: | 6 | | 4 |

| Application Switch Defaults | | | |
|---|------|-------------|----------------|
| AUDIX Voice Power/FAX Attendant Switch Defaults | | | |
| Automated Attendant - Calling Group: | 770 | | |
| Call Answer - Calling Group: | 7926 | | |
| FAX Response - Calling Group: | 7924 | | |
| Information Service - Calling Group: | 7927 | | |
| Message Drop - Calling Group: | 7928 | | |
| Voice Mail - Calling Group: | 7925 | | |
| Coverage Group: | 30 | | |
| | | AVP Default | Current Switch |
| Reliable Disconnect: | yes | | no |
| Delay Ring: | 2 | | 2 |
| Coverage Delay Ring: | 3 | | 3 |
| VMS Transfer Return Interval: | 6 | | 4 |
| Transfer Return Time: | 6 | | 4 |

Figure 14. Application Switch Default Screens

The values shown in the screens in Figure 14 are the defaults for all information on the Application Switch Defaults screen. When the user accesses the screen, the current programmed values are shown.

The settings in the `Current Switch` column for `Reliable Disconnect`, `Delay Ring`, `Coverage Delay Ring`, `VMS Transfer Return Interval`, and `Transfer Return Time` are displayed for comparison purposes, and cannot be changed on this screen. The values in the `AVP Default` column can be changed, and are sent to the switch when the user presses `[F3]` (`Save`). A difference between the two

columns, other than at initial installation, indicates that the values have been changed through system programming on the switch, using the programming console or SPM. This information can be helpful in troubleshooting problems.

NOTE:

The Calling Group numbers and Coverage Group number displayed on this screen (including any changes made by the user) are the values used for the information sent to the switch when services are administered on the System Programming/Switch Admin Form screen, Figure 17, and when subscribers are added to the AUDIX Voice Power Coverage Group on the AUDIX Voice Power User or AUDIX Voice Power/FAX Attendant User screen, Figure 16. Therefore, if any of these group numbers are to be changed, it is important to make those changes *first*, before administering the services or subscribers.

If it is necessary to change any Calling Group numbers *after* initial administration of the services, the user must make the change in the following order:

1. Un-install the affected services by deleting those services from all channels on the System Programming/Switch Admin Form screen.
2. Change the appropriate Calling Group numbers on the Application Switch Defaults screen.
3. Re-install the affected services by adding them to channels on the System Programming/Switch Admin Form screen.

■ Calling Groups

The Calling Group numbers shown in Figure 14 are the defaults assigned to each service. The user can change these numbers by positioning the cursor on the appropriate field and entering a new value. No two services can share a Calling Group; each number must be unique.

■ Coverage Group

Coverage Group 30 is the default for the extensions covered by the applications. The user can change the group number by positioning the cursor on this field and entering a new value from 1 to 30.

■ Reliable Disconnect

The user presses [F2] (Choices) and selects *yes* (Reliable Disconnect) or *no* (Unreliable Disconnect).

When an outside caller on a loop-start trunk hangs upon Automated Attendant or Call Answer, a setting of *no* may result in lost port availability or recording of dial tone or messages from the telephone company (such as "Please hang up and dial again"). To prevent this from happening, Reliable Disconnect should be set to *yes*. If Automated Attendant will be allowed to transfer calls to outside numbers and has access to any loop-start trunks, Reliable Disconnect *must* be set to *yes*.

■ Delay Ring and Coverage Delay Ring

The user can change these values by positioning the cursor on the appropriate field and entering a new value. The range for Delay Ring is 1 to 6 rings; the range for Coverage Delay Ring is 1 to 9 rings.

The combined total of these two values should be less than either the VMS Transfer Return Interval or the Transfer Return Time. This ensures that a transferred call will always ring at a Coverage point before the applicable return timer expires and the call either is transferred to the alternative destination (in the case of a transfer from AUDIX Voice Power) or returns to the transfer originator (in the case of a transfer from any other extension).

■ VMS Transfer Return Interval and Transfer Return Time

The user can change these values by positioning the cursor on the appropriate field and entering a new value. The range for both timers is 0 (transferred calls are never returned or redirected) to 9 rings.

The VMS Transfer Return Interval governs how long a call transferred from an AUDIX Voice Power port will ring before it is redirected; the Transfer Return Time governs how long a call transferred from any other extension will ring before it returns to the transfer originator.

Each of these values should be greater than the combined total of the Delay Ring and Coverage Delay Ring values. This ensures that a transferred call will always ring at a Coverage point before the applicable return timer expires and the call either is transferred to the alternative destination (in the case of a transfer from AUDIX Voice Power) or returns to the transfer originator (in the case of a transfer from any other extension).

Switch Programming Results

The following information is sent to the switch:

- Reliable Disconnect setting.
- Delay Ring value.
- Coverage Delay Ring value.
- VMS Transfer Return Interval.
- Transfer Return Time.

Screen Results

When the user finishes with the Application Switch Defaults screen and presses F3 (Save), the Technician Maintenance menu returns.

Extension Directory Setup

When the technician selects `Extension Directory Setup` from the Technician Maintenance menu during installation, IS-III checks whether the switch extension directory already exists in the application database. If the directory does not exist, IS-III reads the switch extensions into the database,

together with the label for each extension, if there is one. If the directory does exist, the technician has the following choices:

- Exit without making any changes to the database, using **[F6]** (Cancel) ,
- Re-install the database. This choice completely replaces the existing extension directory in the application database.
- Reconcile the database with the switch. This choice follows the same rules as the daily reconciliation program, as described earlier in Table 20.

Switch Programming Results

No information is sent to the switch.

Screen Results

The user is returned to the Technician Maintenance menu.

Extension Directory

Figure 15 shows the Extension Directory screen. A description of its use follows.

```

                                     Extension Directory
Extension:          _____
Name (first):      _____
Name (last):       _____
Extension Label:   _____
Location:          _____
Comments:          _____
Comments:          _____
Application 1:     [  ]
Application 2:     [  ]
Application 3:     [  ]
Application 4:     [  ]
Application 5:     [  ]

```

Figure 15. Extension Directory Screen

- Extension
The user must enter an extension number in this field. If the user then presses **[F1]** (Display), any information available for that extension in the application database fills the remaining fields. When the Extension Directory screen is first accessed after performing an Extension Directory Setup, only the `Extension Label` field is populated (if the extension is a valid one and a label was programmed for it on the switch).

The user can press **[F2]** (Delete) to delete the information on the extension from the application database. (If the extension still exists on the switch, the information will be restored to the application database the next time the reconciliation program runs.)

If the user enters a non-valid extension (one that is not in the extension directory), when he or she finishes with this screen and presses **[F3]** (Save), a request for confirmation appears. If the user confirms the entry, the extension is identified as a special-purpose extension. Since Integrated Administration never adds extensions to the switch, the extension appears only in the application database. The `Location` field is filled with the word `Special`. (Special-purpose extensions are used for such features as guest mailboxes or group fax extensions, as described later under the AUDIX Voice Power/FAX Attendant User screen, Figure 16.)

- **Extension Label**

The user can change the information in this field.

- **Name (first), Name (last), Location, Comments**

The user can enter information in these fields, if desired. This information is not sent to the switch.

- **Application 1 through Application 5**

The user can add the extension as an AUDIX Voice Power or AUDIX Voice Power/FAX Attendant subscriber by typing **AVP** or using **[F2]** (Choices) and selecting **AVP** in one of these fields. If FAX Attendant is installed, an AUDIX Voice Power subscriber is automatically a FAX Attendant subscriber as well.

Switch Programming Results

The following information is sent to the switch:

- Extension label(s), if any.
- Remove deleted extension(s) from AUDIX Voice Power Coverage Group (30), if they had been added previously as subscribers.

Screen Results

When the user finishes with the Extension Directory screen and presses **[F3]** (Save), the AUDIX Voice Power User screen or, if FAX Attendant is installed, the AUDIX Voice Power/FAX Attendant User screen appears. Figure 16 shows these screens. A description of their use follows.

AUDIX Voice Power User

Extension: *nnnn*

Add User to AUDIX Voice Power Cover Group: [yes/no]

AUDIX Voice Power button number: --

AUDIX Voice Power/FAX Attendant User

Extension: *nnnn*

Add User to AUDIX Voice Power Cover Group: [yes/no]

AUDIX Voice Power button number: --

Private Fax Extension: ----

Figure 16. AUDIX Voice Power and AUDIX Voice Power/FAX Attendant User Screens

■ **Extension**

The extension displayed is the one entered in the Extension Directory screen.

■ **Add User to AUDIX Voice Power Cover Group**

The user presses **[F2]** (Choices) and selects *yes* or *no*.

(On initial installation only, this information is passed to the Subscriber screen for AUDIX Voice Power or AUDIX Voice Power/FAX Attendant. This screen is used for administering the applications only. If the user subsequently changes this field, the change is not passed to the Subscriber screen. This allows the item on the AUDIX Voice Power User or AUDIX Voice Power/FAX Attendant User screen, which controls the addition of the extension to the Coverage Group, and the item on the Subscriber screen, which controls whether AUDIX Voice Power does supervised or unsupervised transfers to the extension, to be set independently. See the AUDIX Voice Power or FAX Attendant *System Manager's Guide* for details.)

■ **AUDIX Voice Power button number**

The user can enter a button number (1-34) for an **Auto Dial** button for the Automated Attendant Calling Group on the telephone at the extension. If the specified button is already programmed as a Personal Line or pool button, or if it is the only **SA** or **ICOM** button on the telephone, the **Auto Dial** button is not programmed. The **Auto Dial** button can replace any other button that is already programmed, including an **SA**, **Shared SA**, or **ICOM** button.

The **Auto Dial** button programming does not appear in the application database. As a result, if the user returns to this screen, Integrated Administration does not show the button nor prevent the programming of a different button with the same **Auto Dial** number. To determine what buttons are programmed on an extension, the user must use Inspect at the telephone or through centralized telephone programming.

If it is desired instead that the **Auto Dial** button should be programmed for the Calling Group number for Call Answer or Voice Mail, it must be reprogrammed on the switch through extension programming or centralized telephone programming.

If the user leaves this field blank or enters 0, no button is programmed.

■ **Private Fax Extension**

The user can enter either the switch extension of a tip/ring port connected to a fax machine or a phantom extension. The extension is added (on the switch) to the Coverage Group that sends its calls to AUDIX Voice Power. If the user leaves this field blank or blanks it out, the extension in the `Extension` field will not have FAX Attendant services.

For an extension that is not a DID extension to be used as a private fax extension, a Personal Line must be assigned to the extension and the extension must be the principal user of that line.

No two subscribers can be assigned the same private fax extension. However, a group of individuals can use the same private fax extension, as follows:

- A extension number that is not a valid extension on the switch is assigned as a special-purpose extension, as described earlier under the Extension Directory screen. This extension is the *group fax administrator*.
- The special-purpose extension is assigned a private fax extension on the AUDIX Voice Power/FAX Attendant User screen.
- Group members are assigned as FAX Attendant subscribers on the Extension Directory screen, but are *not* assigned private fax extensions.

When callers reach the group fax administrator's private fax extension, they are prompted for the voice extension of the group member to receive the fax. (See the FAX Attendant *System Manager's Guide* for instructions on administering voice prompts.)

Switch Programming Results

The following information is sent to the switch:

- Add extension(s) to or delete from AUDIX Voice Power Coverage Group (30), depending on selection in Add User to AUDIX Voice Power Cover Group field.

- Add **Auto Dial** button for Automated Attendant Calling Group (770).
- Add private fax extension(s) to or delete from AUDIX Voice Power Coverage Group.

Screen Results

When the user finishes with the AUDIX Voice Power User or AUDIX Voice Power/FAX Attendant User screen and presses **[F3]** (*Save*), the Subscriber screen appears for AUDIX Voice Power or for AUDIX Voice Power/FAX Attendant. The Subscriber screens are for programming application parameters and do not send any information to the switch.

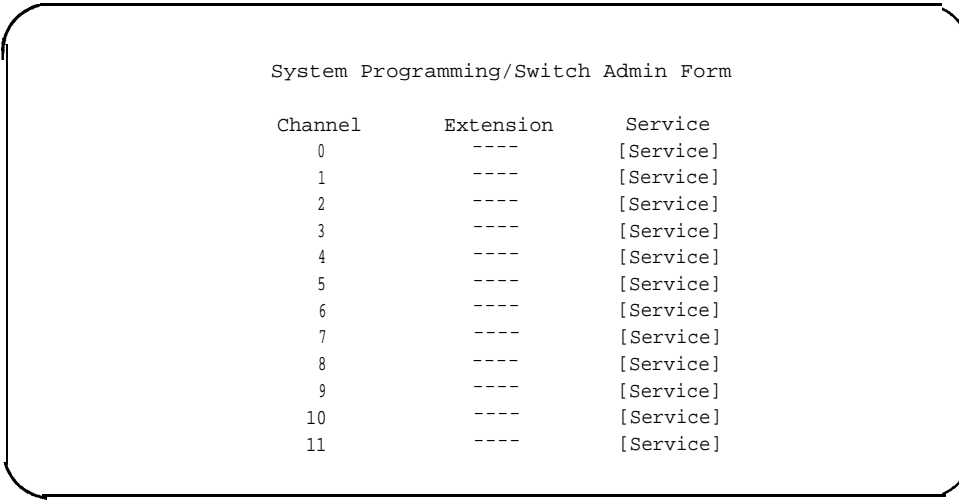
The user can also access the Subscriber screens by selecting *Subscriber Administration* from the AUDIX Voice Power or AUDIX Voice Power/FAX Attendant menu under the Integrated Solution III or Integrated Solution Maintenance menu. That method of access allows information to be changed about an existing subscriber, but does not allow the addition of a new subscriber.

System Programming/Switch Admin

On initial installation of IS-III, the selection *system Programming/Switch Admin* from the AUDIX Voice Power or AUDIX Voice Power/FAX Attendant menu brings up the System Programming/Switch Admin Form screen. Figure 17 shows this screen, and a description of its use follows.

On subsequent access, the selection *System Programming/Switch Admin* brings up the System Programming/Switch Admin Menu screen. Figure 18 shows this menu, both as it appears with only AUDIX Voice Power installed and as it appears with both AUDIX Voice Power and FAX Attendant installed.

Note that one of the selections on the System Programming/Switch Admin Menu screen (Figure 18) is *System Programming/Switch Admin Form*, which brings up the System Programming/Switch Admin Form screen (Figure 17).



```
System Programming/Switch Admin Form

Channel      Extension    Service
0            ----        [Service]
1            ----        [Service]
2            ----        [Service]
3            ----        [Service]
4            ----        [Service]
5            ----        [Service]
6            ----        [Service]
7            ----        [Service]
8            ----        [Service]
9            ----        [Service]
10           ----        [Service]
11           ----        [Service]
```

Figure 17. System Programming/Switch Admin Form Screen

The purpose of this screen is to assign switch extensions to AUDIX Voice Power and FAX Attendant services. The channel numbers represent physical channels on the AUDIX Voice Power IVP4 or IVP6 board or the FAX Attendant IFP2 or IFP4 board in the Master Controller II+ or Master Controller III computer.

■ **Extension**

The user presses **[F1]** (Add) and enters a valid switch extension for the service. The user can also use **[F2]** (Delete) to delete an extension from a service.

■ **Service**

The user presses **[F2]** (Choices) and selects a service from the following list:

- AA (Automated Attendant) is the default for all channels. This selection also provides Call Answer and Voice Mail, and, if FAX Attendant is installed, FAX Call Answer and FAX Mail services.
- CA (Call Answer) also provides FAX Call Answer service if FAX Attendant is installed.
- FR (FAX Response) is available if FAX Attendant is installed.
- IS (Information Service).
- MD (Message Drop).
- VM (Voice Mail) also provides FAX Mail service if FAX Attendant is installed.

Switch Programming Results

The following information is sent to the switch (see “Application Switch Defaults,” earlier in this section, for details):

- Reliable Disconnect = `yes`.
- Delay Ring = `2`.
- Coverage Delay Ring = `3`.
- VMS Transfer Return Interval = `6`.
- Transfer Return Time = `6`.

The following service-specific information is sent to the switch for the services selected.

If Automated Attendant is selected

- Add label `AUDIXVP` to or delete from Automated Attendant extension(s).
- Add label `AUDIXVP` to Automated Attendant Calling Group (770) (when first Automated Attendant extension is added) or delete label (when last Automated Attendant extension is deleted).
- Set group type to `Integrated VMI` for Automated Attendant Calling Group (when first Automated Attendant extension is added) or to `Auto Logout` (when last Automated Attendant extension is deleted).
- Set hunt group type to `Circular` for Automated Attendant Calling Group (when first Automated Attendant extension is added).
- Add Automated Attendant extension(s) to or delete from Automated Attendant Calling Group.
- Add Automated Attendant extension(s) to or delete from Night Service exclusion list.
- Add AUDIX Voice Power Coverage Group (30) to Automated Attendant Calling Group (when first Automated Attendant extension is added) or delete from Calling Group (when last Automated Attendant extension is deleted).
- Delete all lines from Automated Attendant Calling Group (when last Automated Attendant extension is deleted and Automated Attendant was set for Immediate call handling operation).
- Delete backup operator from AUDIX Voice Power Coverage Group (when last Automated Attendant extension is deleted and Automated Attendant was set for Delayed call handling operation).
- Delete AUDIX Voice Power Coverage Group from Night Service group for affected operator (when last Automated Attendant extension is deleted and Automated Attendant was set for Night Service operation).

If Call Answer is selected

- Add label `AUDIXVP` to or delete from Call Answer extension(s).
- Add label `AUDIXVP` to Call Answer Calling Group (7926) (when first Call Answer extension is added) or delete label (when last Call Answer extension is deleted).
- Set group type to `Integrated VMI` for Call Answer Calling Group (when first Call Answer extension is added) or to `Auto Logout` (when last Call Answer extension is deleted).
- Set hunt group type to `Circular` for Call Answer Calling Group (when first Call Answer extension is added).
- Add Call Answer extension(s) to or delete from Call Answer Calling Group.
- Add Call Answer extension(s) to or delete from Night Service exclusion list.

(Note that since Call Answer is typically not assigned as the only service in a system, the AUDIX Voice Power Coverage Group (30) is not assigned to the Call Answer Calling Group. If Call Answer is to be the only service, the Coverage Group must be assigned to the Call Answer Calling Group through system programming at the programming console or SPM.)

If FAX Response is selected

- Add label `AVP-FA` to or delete from FAX Response extension(s).
- Add label `AVP-FA` to FAX Response Calling Group (7924) (when first FAX Response extension is added) or delete label (when last FAX Response extension is deleted).
- Set group type to `Integrated VMI` for FAX Response Calling Group (when first FAX Response extension is added) or to `Auto Logout` (when last FAX Response extension is deleted).
- Set hunt group type to `Circular` for FAX Response Calling Group (when first FAX Response extension is added).
- Add FAX Response extension(s) to or delete from FAX Response Calling Group.
- Delete all lines from FAX Response Calling Group (when last FAX Response extension is deleted).

If Information Service is selected

- Add label `AUDIXVP` to or delete from Information Service extension(s).
- Add label `AUDIXVP` to Information Service Calling Group (7927) (when first Information Service extension is added) or delete label (when last Information Service extension is deleted).
- Set group type to `Integrated VMI` for Information Service Calling Group (when first Information Service extension is added) or to `Auto Logout` (when last Information Service extension is deleted).
- Set hunt group type to `Circular` for Information Service Calling Group (when first Information Service extension is added).
- Add Information Service extension(s) to or delete from Information Service Calling Group.
- Delete all lines from Information Service Calling Group (when last Information Service extension is deleted).

If Message Drop is selected

- Add label `AUDIXVP` to or delete from Message Drop extension(s).
- Add label `AUDIXVP` to Message Drop Calling Group (7928) (when first Message Drop extension is added) or delete label (when last Message Drop extension is deleted).
- Set group type to `Integrated VMI` for Message Drop Calling Group (when first Message Drop extension is added) or to `Auto Logout` (when last Message Drop extension is deleted).
- Set hunt group type to `Circular` for Message Drop Calling Group (when first Message Drop extension is added).
- Add Message Drop extension(s) to or delete from Message Drop Calling Group.
- Delete all lines from Message Drop Calling Group (when last Message Drop extension is deleted).

If Voice Mail is selected

- Add label `AUDIXVP` to or delete from Voice Mail extension(s).
- Add label `AUDIXVP` to Voice Mail Calling Group (7925) (when first Voice Mail extension is added) or delete label (when last Voice Mail extension is deleted).
- Set group type to `Integrated VMI` for Voice Mail Calling Group (when first Voice Mail extension is added) or to `Auto Logout` (when last Voice Mail extension is deleted).
- Set hunt group type to `Circular` for Voice Mail Calling Group.
- Add Voice Mail extension(s) to or delete from Voice Mail Calling Group.
- Add Voice Mail extension(s) to or delete from Night Service exclusion list.
- If Automated Attendant was not selected, add `AUDIX Voice Power Coverage Group (30)` to Voice Mail Calling Group (when first Voice Mail extension is added).
- Delete all lines from Voice Mail Calling Group (when last Voice Mail extension is deleted).

Screen Results

On initial installation of IS-III, when the user finishes with the System Programming/Switch Admin Form screen, the system steps through the applicable screens shown in Figure 19 through Figure 27, depending on the services selected on this form.

On subsequent access, when the user finishes with the System Programming/Switch Admin Form screen, the AUDIX Voice Power or AUDIX Voice Power/FAX Attendant menu returns. The user can then access the screens shown in Figure 19 through Figure 27 individually, through selections on the System Programming/Switch Admin Menu screen, shown in Figure 18. (This menu includes the selection FAX Response only if FAX Attendant is installed.)

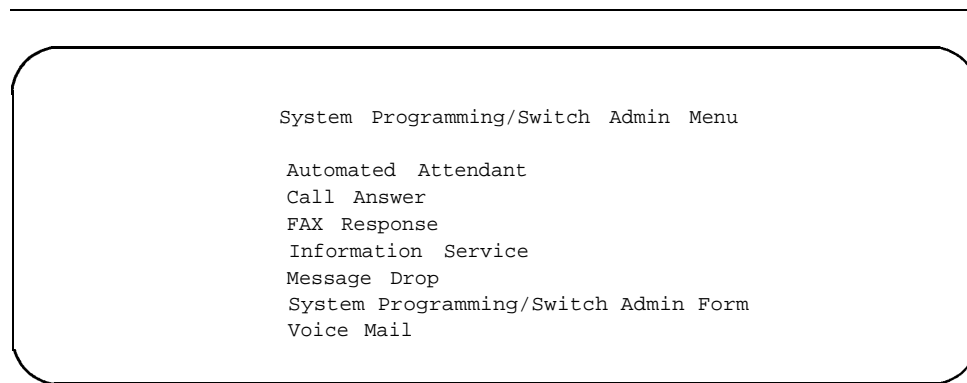


Figure 18. System Programming/Switch Admin Menu Screen

Automated Attendant

When the user has selected Automated Attendant as a service on the System Programming/Switch Admin Form screen during initial installation, or selects it from the System Programming/Switch Admin Menu screen on subsequent access, the screen shown in Figure 19 appears.

Automated Attendant

Channels: *nn nn nn nn*

Extensions : *nnnn nnnn nnnn nnnn*

Automated Attendant Usage: []]

Figure 19. Automated Attendant Screen

■ Channels and Extensions

The values displayed are the ones entered for Automated Attendant on the System Programming/Switch Admin Form screen.

■ Automated Attendant Usage

The user presses **[F2]** (Choices) and selects Immediate, Delayed, or Night Service.

Switch Programming Results

The following information is sent to the switch:

- Delete all lines from Automated Attendant Calling Group (770) if Automated Attendant Usage was changed from Immediate to Delayed or Night Service.
- Delete backup operator from AUDIX Voice Power Coverage Group (30) if Automated Attendant Usage was changed from Delayed to Immediate or Night Service.
- Delete AUDIX Voice Power Coverage Group from Night Service group for affected operators (see Figure 22 later in this section) if Automated Attendant Usage was changed from Night Service to Immediate or Delayed.

Screen Results

When the user finishes with the Automated Attendant screen and presses **[F3]** (Save), if Automated Attendant Usage has been changed, one of the following screens appears, depending on the selection in the Automated Attendant Usage field:

- Automated Attendant — Immediate Call Handling (Figure 20)
- Automated Attendant — Delayed Call Handling (Figure 21)
- Automated Attendant — Night Service (Figure 22)

If Automated Attendant Usage has not been changed:

On initial installation, the screen for the next service selected on the System Programming/Switch Admin Form screen appears — see Figure 23 through Figure 27.

On subsequent access, the System Programming/Switch Admin Menu screen returns.

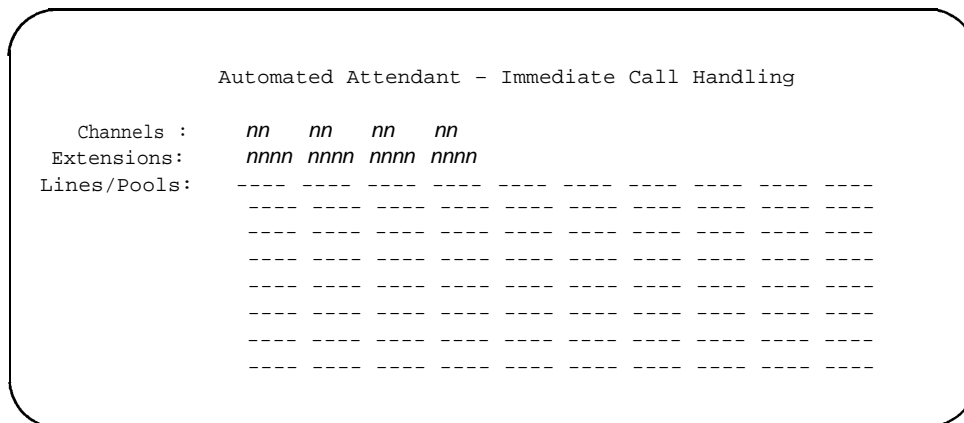


Figure 20. Automated Attendant Immediate Call Handling Screen

- Channels and Extensions
The values displayed are the ones entered for Automated Attendant on the System Programming/Switch Admin Form screen.
- Lines/Pools
The user presses [F1] (Add) or [F2] (Delete) to add or delete a line or pool for this service. A pop-up window appears for entry of a line or pool number.

Switch Programming Results

Add lines to and/or delete lines from Automated Attendant Calling Group (770).

Screen Results

When the user finishes with the Automated Attendant — Immediate Call Handling screen:

On initial installation, the screen for the next service selected on the System Programming/Switch Admin Form screen appears — see Figure 23 through Figure 27.

On subsequent access, the System Programming/Switch Admin Menu screen returns.

```
Automated Attendant - Delayed Call Handling

Channels:      nn  nn  nn  nn
Extensions :   nnnn nnnn nnnn nnnn

Backup Operator Extension: ----
```

Figure 21. Automated Attendant Delayed Call Handling Screen

■ **Channels and Extensions**

The values displayed are the ones entered for Automated Attendant on the System Programming/Switch Admin Form screen.

■ **Backup Operator Extension**

For Delayed call handling, the user must enter a phantom extension that has already been programmed on the switch and assigned as an operator position through system programming at the programming console or SPM. The phantom operator has the default configuration of lines assigned to it: the first 32 lines for a phantom analog port or the first 18 lines for a phantom MLX port. If these are not the lines for which backup operation is desired, the assignments must be reprogrammed through system programming.

The phantom operator must also be added as an AUDIX Voice Power subscriber on the Extension Directory screen, Figure 15.

If the user blanks out this field to delete the phantom operator, or changes Automated Attendant operation to *Immediate* or *Night Service* on the Automated Attendant screen, the extension should also be deleted as a subscriber on the Extension Directory screen to maintain consistency between the application database and the switch.

Switch Programming Results

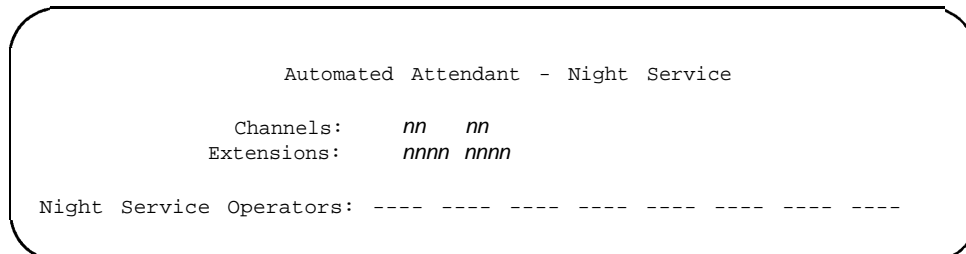
Add backup operator to or delete from AUDIX Voice Power Coverage Group (30).

Screen Results

When the user finishes with the Automated Attendant — Delayed Call Handling screen:

On initial installation, the screen for the next service selected on the System Programming/Switch Admin Form screen appears — see Figure 23 through Figure 27.

On subsequent access, the System Programming/Switch Admin Menu screen returns.



```
Automated Attendant - Night Service

Channels:   nn   nn
Extensions: nnnn nnnn

Night Service Operators: ---- ---- ---- ---- ---- ---- ---- ----
```

Figure 22. Automated Attendant Night Service Screen

■ Channels and Extensions

The values displayed are the ones entered for Automated Attendant on the System Programming/Switch Admin Form screen.

■ Night Service Operators

The user presses [F1] (Add) or [F2] (Delete) to add or delete an operator. A pop-up window appears for entry of an operator extension. The user must add at least one operator.

Switch Programming Results

Add Automated Attendant Calling Group (770) to or delete from the Night Service group for operator(s) entered.

Screen Results

When the user finishes with the Automated Attendant — Night Service screen:

On initial installation, the screen for the next service selected on the System Programming/Switch Admin Form screen appears — see Figure 23 through Figure 27.

On subsequent access, the System Programming/Switch Admin Menu screen returns.

Call Answer

When the user has selected Call Answer or Automated Attendant as a service on the System Programming/Switch Admin Form screen during initial installation, or selects Call Answer from the System Programming/Switch Admin Menu screen on subsequent access, the screen shown in Figure 23 appears.

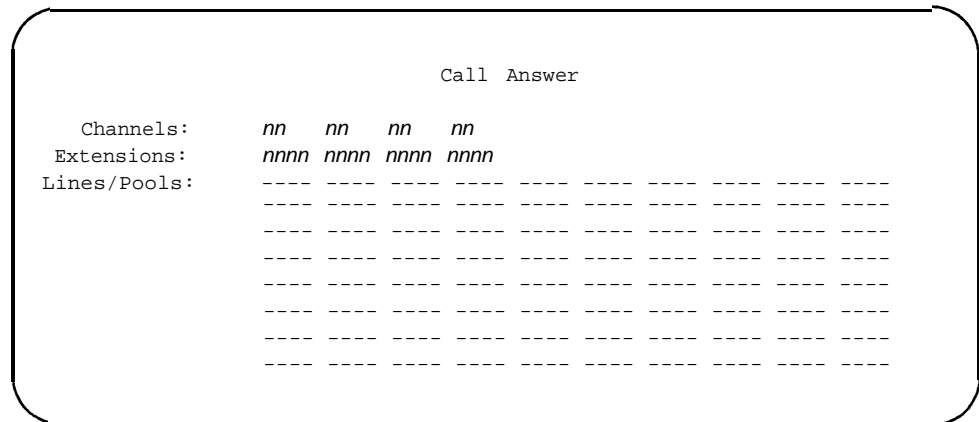


Figure 23. Call Answer Screen

- Channels and Extensions

The values displayed are the ones entered for Call Answer or Automated Attendant on the System Programming/Switch Admin Form screen.

- Lines/Pools

The user presses [F1] (Add) or [F2] (Delete) to add or delete a line or pool for this service. A pop-up window appears for entry of a line or pool number.

Switch Programming Results

Add lines to and/or delete lines from Call Answer Calling Group (7926).

Screen Results

When the user finishes with the Call Answer screen:

On initial installation, the screen for the next service selected on the System Programming/Switch Admin Form screen appears — see Figure 24 through Figure 27.

On subsequent access, the System Programming/Switch Admin Menu screen returns.

FAX Response

When the user has selected FAX Response as a service on the System Programming/Switch Admin Form screen during initial installation, or selects it from the System Programming/Switch Admin Menu screen on subsequent access, the screen shown in Figure 24 appears.

FAX Response

```

Channels :      nn  nn  nn  nn
Extensions :    nnnn nnnn nnnn nnnn
Lines/Pools:  ----  ----  ----  ----  ----  ----  ----  ----  ----
              ----  ----  ----  ----  ----  ----  ----  ----  ----
              ----  ----  ----  ----  ----  ----  ----  ----  ----
              ----  ----  ----  ----  ----  ----  ----  ----  ----
              ----  ----  ----  ----  ----  ----  ----  ----  ----
              ----  ----  ----  ----  ----  ----  ----  ----  ----
    
```

Figure 24. FAX Response Screen

- Channels and Extensions
The values displayed are the ones entered for FAX Response on the System Programming/Switch Admin Form screen.
- Lines/Pools
The user presses **[F1]** (Add) or **[F2]** (Delete) to add or delete a line or pool for this service. A pop-up window appears for entry of a line or pool number,

Switch Programming Results

Add lines to and/or delete lines from FAX Response Calling Group (7924).

Screen Results

When the user finishes with the FAX Response screen:

On initial installation, the screen for the next service selected on the System Programming/Switch Admin Form screen appears — see Figure 25 through Figure 27.

On subsequent access, the System Programming/Switch Admin Menu screen returns.

Information Service

When the user has selected Information Service as a service on the System Programming/Switch Admin Form screen during initial installation, or selects it from the System Programming/Switch Admin Menu screen on subsequent access, the screen shown in Figure 25 appears.

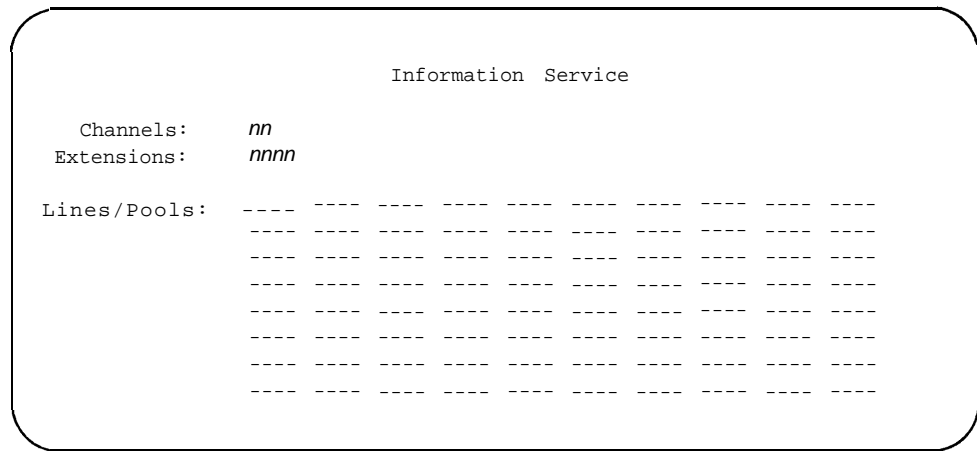


Figure 25. Information Service Screen

■ **Channels and Extensions**

The values displayed are the ones entered for Information Service on the System Programming/Switch Admin Form screen.

■ **Lines/Pools**

The user presses [F1] (Add) or [F2] (Delete) to add or delete a line or pool for this service. A pop-up window appears for entry of a line or pool number.

Switch Programming Results

Add lines to and/or delete lines from Information Service Calling Group (7927).

Screen Results

When the user finishes with the Information Service screen:

On initial installation, the screen for the next service selected on the System Programming/Switch Admin Form screen appears — see Figure 26 and Figure 27.

On subsequent access, the System Programming/Switch Admin Menu screen returns.

Message Drop

When the user has selected Message Drop as a service on the System Programming/Switch Admin Form screen during initial installation, or selects it from the System Programming/Switch Admin Menu screen on subsequent access, the screen shown in Figure 26 appears.

Message Drop

Channels: *nn*
 Extensions: *nnnn*
 Lines/Pools: -----

Figure 26. Message Drop Screen

- **Channels and Extensions**
 The values displayed are the ones entered for Message Drop on the System Programming/Switch Admin Form screen.
- **Lines/Pools**
 The user presses **[F1]** (Add) or **[F2]** (Delete) to add or delete a line or pool for this service. A pop-up window appears for entry of a line or pool number.

Switch Programming Results

Add lines to and/or delete lines from Message Drop Calling Group (7928).

Screen Results

When the user finishes with the Message Drop screen:

On initial installation, the screen for the next service selected on the System Programming/Switch Admin Form screen appears — see Figure 27.

On subsequent access, the System Programming/Switch Admin Menu screen returns.

Voice Mail

When the user has selected Voice Mail or Automated Attendant as a service on the System Programming/Switch Admin Form screen during initial installation, or selects Voice Mail from the System Programming/Switch Admin Menu screen on subsequent access, the screen shown in Figure 27 appears.

```

Voice Mail

Channels:  nn  nn  nn  nn
Extensions:  nnnn  nnnn  nnnn  nnnn
Lines/Pools:  -----
               -----
               -----
               -----
               -----
               -----
               -----
    
```

Figure 27. Voice Mail Screen

- Channels and Extensions
The values displayed are the ones entered for Voice Mail or Automated Attendant on the System Programming/Switch Admin Form screen.
- Lines/Pools
The user presses [F1] (Add) or [F2] (Delete) to add or delete a line or pool for this service. A pop-up window appears for entry of a line or pool number.

Switch Programming Results

Add lines to and/or delete lines from Voice Mail Calling Group (7925).

Screen Results

When the user finishes with the Voice Mail screen, The System Programming/Switch Admin Menu screen returns.

Considerations and Constraints

Integrated Administration never adds or changes extensions on the switch. When the application database is reconciled with the switch extension database, the switch information is always assumed to be correct.

When Integrated Administration is sending information to the switch, users are blocked from entering system programming at the console or SPM until the send is finished. Likewise, if the console or SPM is being used for system programming, Integrated Administration is blocked from sending information to the switch until system programming is finished.

While Integrated Administration is sending information to the switch about an extension or trunk, that extension or trunk is forced idle.

For Coverage by AUDIX Voice Power to work properly, the values programmed for the Transfer Return Time and the VMS Transfer Return Interval each must be greater than the combined total of the values programmed for the Coverage Delay Interval plus Delay Ring.

FAX Attendant cannot be installed as a standalone application, but only in conjunction with AUDIX Voice Power.

If an AUDIX Voice Power mailbox is needed for a person with no telephone, a phantom extension (on the switch) or special-purpose extension (through Integrated Administration) must be assigned to that person.

The date and time should be set the same for AUDIX Voice Power as for the switch.

Mode Differences

AUDIX Voice Power (including FAX Attendant) is not supported in Behind Switch mode.

Feature Interactions

Coverage AUDIX Voice Power and private fax extensions are automatically assigned to Coverage Group 30, which is covered by the AUDIX Voice Power Calling Group. This assignment can be changed by a qualified technician on the Application Switch Defaults screen.

If the Automated Attendant service is configured for Delayed Call Handling, Integrated Administration assigns a backup (phantom) extension and sets up Coverage for it.

The total of the values programmed for Coverage Delay Interval plus Delay Ring should be less than either the Transfer Return Time or the VMS Transfer Return Interval. (These values are shown on the Application Switch Defaults screen.)

| | |
|-------------------------|--|
| Group Calling | AUDIX Voice Power services and the FAX Response service are set up as members of dedicated Calling Groups. Integrated Administration sets up the necessary Calling Groups with the applicable options for correct operation of these services. |
| Labeling | Names entered on the Extension Directory screen are sent to the switch and appear on system programming Labeling screens on the programming console or SPM. Names entered on the console or SPM appear on the Extension Directory screen after Extension Directory Setup is completed. Labels are added to lines and Calling Groups, as appropriate, when services are selected through Integrated Administration. |
| Night Service | The Automated Attendant service can be used for Night Service operation. The necessary system programming options can be set through Integrated Administration. |
| Ringling Options | The total of the values programmed for Delay Ring plus Coverage Delay Interval should be less than either the Transfer Return Time or the VMS Transfer Return Interval. (These values are shown on the Application Switch Defaults screen.) |
| System Numbering | System renumbering can be done only through system programming on the programming console or SPM. Integrated Administration never sends system numbering information to the switch. |
| Transfer | Both the Transfer Return Time and the VMS Transfer Return Interval should be greater than the total of the values programmed for Delay Ring plus the Coverage Delay Interval. (These values are shown on the Application Switch Defaults screen.) |

Labeling

At a Glance

| | |
|-------------------------|--|
| Users Affected | Telephone users, operators |
| Reports Affected | Dial Plan Direct Group Calling Information Extension Directory Group Coverage Information Label Information Operator Information System Directory |
| Mode | All |
| Telephones | Display telephones |
| System Programming | Create, change, or delete System Directory listings: <ul style="list-style-type: none"> ● More → Labeling → Directory → System Assign extension labels: <ul style="list-style-type: none"> ● More → Labeling → Directory → Extension Create, change, or delete Personal Directory listings: <ul style="list-style-type: none"> ● More → Labeling → Directory → Personal Assign outside line/trunk labels: <ul style="list-style-type: none"> ● More → Labeling → LinesTrunks Assign calling group labels: <ul style="list-style-type: none"> ● More → Labeling → Grp Calling Create, change, or delete posted messages: <ul style="list-style-type: none"> ● More → Labeling → PostMessage |
| Maximums | |
| System Directory Labels | 11 characters per label |
| Extension Labels | 7 characters per label |
| Line/Trunk Labels | 7 characters per label |
| Calling Group Labels | 7 characters per label |
| Posted Messages | 16 characters per message 20 messages |
| Factory Settings | |
| Posted Messages | 1 fixed message 9 preset but changeable messages 10 blank custom messages available for customer use |

Description

Through the use of Labeling, the system manager can program the system to provide identification information (called *labels*) and posted messages on display telephones. Alphanumeric labels can be assigned to the following:

- **System Directory listings** to identify the company or person associated with a specific System Speed Dial number. This information is displayed when a user accesses the System Directory.
- **Extension Directory listings** to identify the name of the person or room (for example, a conference room) associated with an extension. This information is displayed when a user receives an inside call, when a co-worker leaves a message, or when a user accesses the Extension Directory.
- **Personal Directory listings** to identify the name of the person or business associated with a frequently called personal number. This information is displayed when an MLX-20L user accesses a Personal Directory.
- **Outside trunks** to identify the type of trunk (for example, WATS or tie trunk), the telephone number, or the department to which the trunk belongs. This information is displayed when a user makes or receives a call.
- **Calling Groups** to identify the group. This information is displayed when a group member answers a group calling call.

Extension, outside trunk, and calling group labels are downloaded through Integrated Administration to applications, such as AUDIX Voice Power, and FAX Attendant System. These labels can be assigned once in Integrated Administration for both the application and the switch. See Integrated Administration for additional information.

Labeling is also used to create messages which can be posted to a caller with a display telephone to explain why a person is not answering his or her telephone.

Each posted message has a number. To post a message, a user enters the posted message number. When another user with a display telephone calls, the message is displayed on the caller's telephone. See Messaging for additional information on how to post a message. Table 23 lists the factory-set posted messages and their numbers.

Table 23. Factory-Set Posted Messages and Their Codes

| Number | Message |
|---------------|---|
| 01 | DO NOT DISTURB (fixed in Release 2.0, changeable in earlier Releases) |
| 02 | OUT TO LUNCH (changeable) |
| 03 | AT HOME (changeable) |
| 04 | OUT SICK (changeable) |
| 05 | IN A MEETING (changeable) |
| 06 | IN A CONFERENCE (changeable) |
| 07 | WITH A CLIENT (changeable) |
| 08 | WITH A CUSTOMER (changeable) |
| 09 | AWAY FROM DESK (changeable) |
| 10 | OUT ALL DAY (changeable) |
| 11-20 | CUSTOM MSG 11, 12, etc. (available for customer-created messages) |

Considerations and Constraints

If a label is assigned to the telephone, the MLX Telephone user sees the label, the extension number, and the posted message, for example, `STEVE B Ext 7101 OUT TO LUNCH`. If a label is not assigned to an extension and a caller dials that extension, the telephone's extension number is displayed (instead of the user's name) and any posted messages. For example, an MLX display telephone user sees `Ext 7103 OUT TO LUNCH`.

If labels are not assigned to system operator extensions, display telephone users see `Operator` and the system operator's extension when receiving a call from the system operator,

If labels have not been assigned to outside trunks, display users see the factory-set label of `OUTSIDE` and the trunk number (such as `Trk 810`) when an outside call is made or received.

Labels can contain capital letters, numbers, and eight types of characters: ampersands (&), dashes (-), spaces, periods (.), commas (,), apostrophes (') stars (*) and pound signs (#).

With AT&T's INFO2 ANI service, the information displayed also identifies the number of the caller.

NOTE:

The availability of the caller identification information may be limited by local-serving (caller's) jurisdiction, availability, or central office equipment.

Programmed labels cannot be shown on non-display telephones or on single-line telephones.

Telephone Differences

Multiline Telephones

Only MLX-20L telephone users can have a Personal Directory. Labels for the entries in this Directory can be programmed by the system manager using system programming or by the MLX-20L telephone user at the telephone.

Feature Interactions

| | |
|----------------------------------|---|
| Directories | Labeling is used to enter the names of the persons or businesses associated with the System Speed Dial numbers stored as listings in the System Directory. It is also used to enter the names of people, groups, and locations associated with the extensions in the system stored as listings in the Extension Directory. Labeling is used to enter the telephone numbers and label information associated with Personal Directories on MLX-20 telephones. |
| Do Not Disturb | Posted message 01, Do Not Disturb, was changeable before Release 2.0. Starting with Release 2.0, when an MLX user activates the DND feature, the DND message is automatically posted. Therefore, this posted message cannot be changed in Release 2.0 and later. |
| Group Calling | An alphanumeric label can be assigned to the calling group. The label is displayed when a group member answers a group calling call or when an MLX display telephone user presses the Inspect button and an Auto Dial button programmed with the calling group's extension number. |
| Integrated Administration | Extension, trunk, and calling group labels are shared with certain applications. The extension labels may be entered or updated in Integrated Administration for both the switch and the applications. |

| | |
|-------------------|--|
| Messaging | The labels stored in the Extension Directory appear on MLX display telephones when users send each other messages. Messages include the name (the seven-character label) of the user who sent the message and the time and day the user called. Posted messages are created and changed by using Labeling. |
| Speed Dial | Labeling is used to enter the telephone numbers and label information associated with System Speed Dial codes. |

Language Choice

At a Glance

| | |
|-----------------------------|--|
| Users Affected | Telephone users, operators, system manager |
| Reports Affected | Extension Information SMDR System Information |
| Mode | All |
| Telephones | MLX telephones only |
| Feature Code | |
| English | 790 |
| French | 791 |
| Spanish | 792 |
| System Programming | Select a language for the entire system: ● More → Language → SystemLang Select a language for an extension: ● More → Language → Extensions Select a language for SMDR headers: ● More → Language → SMDR Select a language for printing programming reports: ● More → Language → Printer |
| Factory Settings | |
| System Language | English |
| Extension Language | English |
| SMDR Report Language | English |
| Programming Report Language | English |
| SPM Language | English |

NOTE:

Language choice is available with Release 1.1 and Release 2.0 (or later) systems.

Description

Since Release 1.1, the communications system has supported system operation and programming in three languages--English, French, and Spanish. This enables system managers (and MLX telephone users) in international environments to customize aspects of the system for their linguistic convenience.

- The system manager can program the entire system to operate in English, French, or Spanish, including MLX prompts and displays, SMDR headings, and system programming reports.
- The system manager can program specific extensions or consecutive block of extensions in English, French, or Spanish as necessary. In addition, an individual user with a Release 1.1 or later MLX telephone can choose one of the three languages most appropriate for his or her own extension.
- The system manager can program SMDR report headers and the headings and text of system programming reports to be printed in English, French, or Spanish.
- The user of the System Programming and Maintenance software (SPM) can select English, French, or Spanish as the language used for its displays and messages.
- MLX-10D, MLX-20L, and MLX-28D display telephones and MLX-10 non-display telephones can be obtained in three separate versions, with factory-imprinted buttons in English, French, or Spanish.

System Language

Through system programming, the system manager selects a language for the entire system, determining the language used for all MLX telephone displays, SMDR headings, system programming reports, and maintenance displays.

Extension Language

A Release 1.1 or later MLX telephone can operate in English, French, or Spanish, independently of the system language. The language for an extension can be selected either by the system manager through system programming or by the user at the telephone. This setting governs the language of displays on a Release 1.1 or later MLX display telephone. It also governs the Reminder Service feature and the Alarm Clock feature on MLX display and non-display telephones, using a 12-hour clock on telephones operating in English and a 24-hour clock on telephones operating in French or Spanish.

After the user selects a language, the choice is confirmed on Line 2 of MLX display telephones. If the choice is English, an `In English` display appears.

If the choice is French, an `En français` display appears.

If the choice is Spanish, an `En español` display appears.

After 5 seconds, Line 2 changes to a display of the date and time. In English, the date is shown as *month day* and the time is shown in 12-hour format (a.m. or p.m.). In French and Spanish, the date is shown as *day month* and the time is shown in 24-hour format. For MLX non-display telephones, the only effect of this selection is a different time format (12-hour clock vs. 24-hour clock) for the Reminder Service and Alarm Clock features.

SMDR Report Language

Through system programming, SMDR reports can be printed with headers in English, French, or Spanish, independently of the languages selected for the communications system and for SPM.

Programming Report Language

Through system programming, programming reports can be printed in English, French or Spanish, independently of the language selected for the system or for SPM.

SPM Language

Unlike the SMDR and programming report languages, which are selected through system programming, the SPM language is selected by the SPM user. When the software is first installed, the user is prompted (in English) for line speed, color vs. black-and-white monitor, and other configuration options. These selections are stored in a system-created configuration file `c:\spm\ams.cfg` (DOS version) or `/usr/ams/ams.cfg` (UNIX System version). The language selection made at this time determines whether SPM menus, pop-up windows, and other messages are presented in English, French, or Spanish. A second language selection option on the SPM screen affects messages from the control unit to SPM, and controls the 7-line by 24-character console simulation window for the duration of the session. These two language options operate independently of each other. An SPM user, for example, can select English for one, and French for the other.

The following discussion refers to the language specified in the SPM configuration files as the *PC language* and the language used by the control unit as the *console window language*.

PC Language

Once a PC language has been chosen during initial installation, that selection is written into the configuration file and becomes the default language. Invoking SPM will call that particular language selection. If a user wishes to specify a different language, he or she can do so using the `-l` option as follows:

```
spm -l english
spm -l french
spm -l spanish
```

Use of the `-l` option changes the language attribute in the SPM configuration file. The language specified becomes the new PC language, used whenever SPM is started without the `-l` option. (Note that the option is a lowercase letter L, not the number 1.)

Console Window Language

Since the Console Window language selection is made only after the selection of the PC Language, the the language used in the 7-line by 24-character console simulation window always defaults to the PC language. However, by

pressing [F10] and making a selection, the SPM user can select a different language for this window for the duration of the current session.

Considerations and Constraints

After a frigid start, the system language reverts to the default setting, English.

If a user tries to set the language on a telephone other than a Release 1.1 or later telephone, he or she hears a reorder tone or an error beep.

When the system and extension language selection are different, the extension language takes precedence.

Telephone Differences

Multiline Telephones

Language Choice is supported only on MLX telephones.

Since the extension language chosen will take precedence over the system language, Alarm Clock and Reminder Service will differ depending on the language selection made for a particular extension. When the extension language choice is set for English, or the system language has been set for English and no extension language selection has been programmed, MLX telephone users set the Alarm Clock and Reminder Service using 12-hour time (a.m. or p.m.). When the extension language choice is set for French or Spanish, or the system language is set for French or Spanish and no extension language has been chosen, the MLX telephone user sets the Alarm Clock and Reminder Service using 24 hour time. Language choice has no other effect on MLX-10 users.

Feature Interactions

| | |
|---|--|
| Alarm Clock and Reminder Service | The time settings for Alarm Clock and Reminder Service must be entered in accordance with the language selection governing that extension. If the language selection is English, the time setting for Alarm Clock and Reminder Service must be entered in 12-hour format (0100-1259) followed by either a 2 for a.m. or a 7 for p.m. If the governing language selection is French or Spanish, the time setting must be entered in 24-hour format (0000-2359). |
|---|--|

Last Number Dial

At a Glance

| | |
|-------------------|--|
| Users Affected | Telephone users, operators |
| Reports Affected | Extension Information |
| Mode | All |
| Telephones | All except QCC |
| Programming Code | *84 |
| Feature Code | 84 |
| MLX Display Label | LastNumDial [Last#] |
| Maximums | 1 Last Number Dial button per multiline telephone 16 digits saved by Last Number Dial |

Description

Last Number Dial automatically saves the last number dialed from a telephone and allows the user to call the number again without manually redialing. The number is saved even if the person called answers.

The number saved is any extension or telephone number dialed by doing any of the following:

- manually dialing the complete number on the dialpad
- dialing the number using a Personal Speed Dial code
- dialing a number using a programmed outside Auto Dial button

Each time the user dials a new number using any of these methods, the old number saved on Last Number Dial is erased and replaced with the new number.

Considerations and Constraints

Only one Last Number Dial button can be programmed on each multiline telephone.

A maximum of 16 digits is saved by Last Number Dial.

Since the type of line button used to make the call (Personal Line, **SA**, or **ICOM**) is not stored, the user must select the appropriate line button before using Last Number Dial to redial a number.

Last Number Dial saves whatever you dial, whether the number is valid or not.

If a user dials a telephone number and, after the call is connected, dials additional digits such as an account number or password, Last Number Dial saves all digits, including those dialed after the call is connected. In addition, if someone other than the owner of a display telephone presses the **Last Number Dial** button, all dialed digits are shown on the display, including confidential information such as passwords or account codes.

Last Number Dial does not store numbers dialed via an Extension, Personal, or System Directory, an inside **Auto Dial** button, a System Speed Dial code, or a DSS button.

If the number is dialed using an outside **Auto Dial** button or Personal Speed Dial code and includes a special character such as Pause or Stop, the special character does not work when the number is redialed using Last Number Dial.

Mode Differences

Behind Switch

In the Behind Switch mode, when a user manually dials an outside number that includes a dial-out code (for example, an Automatic Route Selection or pool dial-out code) required by the host system, the pauses required to wait for dial tone from some host systems are not automatically stored when Last Number Dial is used. As a result, the user may either hear a fast busy signal or reach a wrong number when using Last Number Dial.

Telephone Differences

Queued Call Consoles

Last Number Dial cannot be used on QCCs.

Other Multiline Telephones

To redial a number using Last Number Dial, the multiline telephone user selects the appropriate Personal Line (outside line) or **SA** button for the call, and then either presses the programmed **Last Number Dial** button or presses the **Feature** button and dials **84**. The number saved by the feature is dialed automatically. On MLX display telephones, the user presses the Feature button and selects `LastNumDial [Last#]` from the display.

Single-Line Telephones

To redial a number using Last Number Dial, the single-line telephone user lifts the handset and then, while listening to inside dial tone, dials #84. The number that was last dialed is dialed automatically.

Feature Interactions

| | |
|--------------------------------|---|
| Auto Dial | Last Number Dial does not store numbers dialed using an inside Auto Dial button. If a number containing special characters is dialed using an outside Auto Dial button, the special characters do not work when the number is redialed using Last Number Dial. |
| Directory | Last Number Dial does not store a number dialed using a Personal, Extension, or System Directory. |
| Direct Station Selector | An extension number dialed by pressing a DSS button is not stored for Last Number Dial. |
| Display | When a user presses a programmed Last Number Dial button, the digits appear on the display as if the user were dialing them from the dialpad. |
| Inspect | <p>In Release 1.0 and 1.1, when a user presses Inspct and then a programmed Last Number Dial button, Last Number Dial appears on the display.</p> <p>In Release 2.0, when a user presses Inspct and then a programmed Last Number Dial button, the saved number appears on the display.</p> |
| Microphone Disable | When an MLX telephone user's microphone is disabled, pressing a Last Number Dial button before lifting the handset turns on the speakerphone so the user can hear the number being dialed. However, the user must lift the handset to talk once the call is answered. |
| Speed Dial | Telephone numbers dialed using Personal Speed Dial are stored by Last Number Dial. If the number includes special characters such as Pause or Stop, the special characters do not work when the number is redialed using Last Number Dial. Telephone numbers dialed using System Speed Dial are not stored by Last Number Dial. |

| | |
|---|---|
| SMDR | All outside numbers dialed using Last Number Dial are recorded on the SMDR report. |
| System Access/ Intercom Button | When Last Number Dial is used on a call made with a Shared SA button, the number is stored on the telephone where Last Number Dial was used, not on the principal extension. |
| Transfer | Last Number Dial can be used to dial the outside number of the telephone to which the call is being transferred. |

Line Request

At a Glance

| | |
|----------------|--|
| Users Affected | Telephone users, operators |
| Mode | All |
| Telephones | All except MLC-5 cordless, QCC, and single-line telephones |

Description

If a user wants to make a call on a Personal Line (outside line assigned to a button) that is busy (the green LED next to the button is on or flashing), Line Request notifies the user when the line is available.

Line Request is automatically available and does not require programming. To request the busy line, the multiline telephone user presses the line button for the busy line without lifting the handset. The red LED next to the line button goes on, and when the line becomes available, the telephone automatically alerts the user with a beep. To make a call using the requested line, the user lifts the handset or presses the **Speaker** button.

Line Request is canceled if the user presses another line button or makes or receives a call.

Line Request applies to Personal Lines only. To complete calls to busy extensions, or to complete calls to outside numbers using a pool in which all trunks are busy, Callback should be used.

Considerations and Constraints

Line Request does not reserve the line for the user; it only alerts the user that the line is available.

Line Request cannot be used for an **SA** or **ICOM** button.

Line Request cannot be used with single-line telephones or on a Queued Call Console (QCC).

In the Hybrid/PBX mode, Line Request cannot be used for a **Pool** button or for a busy pool.

Mode Differences

Hybrid/PBX Mode

In the Hybrid/PBX mode, Line Request can be used for Personal Lines or special purpose lines (such as WATS) assigned to line buttons on a multiline telephone. Callback should be used instead of Line Request to complete calls to busy extensions or outside numbers when the call is made by using a pool in which the trunks in the pool are busy.

Key and Behind Switch Modes

Line Request only works for outside lines that are assigned to line buttons.

Telephone Differences

Queued Call Consoles

Line Request cannot be used on QCCs.

Other Multiline Telephones

Line Request cannot be used on MLC-5 cordless phones,

Single-Line Telephones

Line Request cannot be used on single-line telephones.

Feature Interactions

| | |
|-----------------|---|
| Callback | Returning Callback calls cancel Line Request. |
| Camp-On | Returning Camp-On calls cancel Line Request. |
| Park | Returning Park calls cancel Line Request. |
| Transfer | Returning Transfer calls cancel Line Request. |

Messaging

At a Glance

| | |
|---------------------|---|
| Users Affected | Telephone users, operators |
| Reports Affected | Direct Group Calling Information Extension Directory Extension Information Label Information |
| Mode | All |
| Telephones | All |
| Programming Code | |
| Send/Remove Message | *38 (Operator only) |
| Leave Message | *25 |
| Posted Message | *751 |
| Delete Message | *26 (Analog display telephones only) |
| Return Call | *27 (Analog display telephones only) |
| Next Message | *28 (Analog display telephones only) |
| Scroll | *29 (Analog display telephones only) |
| Feature Code | |
| Send/Remove Message | 38 + <i>extension number</i> (operator only) |
| Leave Message | |
| After calling | 25 |
| Without calling | 53 + <i>extension number</i> |
| Cancel Message Sent | *53 + <i>extension number</i> |
| Message LED off | 54 |
| Delete Message | 26 (Analog display telephones only) |
| Return Call | 27 (Analog display telephones only) |
| Next Message | 28 (Analog display telephones only) |
| Scroll | 29 (Analog display telephones only) |
| MLX Display Label | |
| Delete Message | Messages, Delete Msg [Msgs,Dlete] |
| Next Message | Messages, Next Msg [Msgs,Next] |
| Return Call | Messages, Return Call [Msgs,Call] |
| Leave Message | Leave Msg [LvMsg] |
| Posted Message | Messages, Posted Msg [Msgs,Post] |
| Send/Remove Message | Messages, Send/RmvMsg [Msgs,SdMsg] |

Continued on next page

At a Glance *(continued)*

| | |
|---|--|
| System Programming | <p>Change or add posted messages:</p> <ul style="list-style-type: none"> ● Labeling → More → PostMessage <p>Identify fax station jacks, assign Fax Message Waiting Receivers, specify length of time before system sends Fax Message Waiting Indication:</p> <ul style="list-style-type: none"> ● AuxEquip → Fax → Msg Waiting <p>Assign a Message Waiting Receiver for a Calling Group:</p> <ul style="list-style-type: none"> ● Extensions → More → Grp Calling → Message |
| Maximums | |
| Messages per display telephone | 10 |
| Message Waiting Receivers programmed for Fax | 4 |
| Message Waiting Receiver telephones per Calling Group | 1 |
| Fax Message Threshold | 10 seconds (range 0-30 seconds) |

Description

Messaging features allow users to do the following:

- Send messages
- Receive messages
- Post messages

Sending Messages

The following features are used to send messages:

- **Send/Remove Message:** for system operators only
- **Leave Message:** for any user to leave a message for a co-worker with a display telephone

Send/Remove Message

The Send/Remove Message feature, available only to system operators, is used to turn the Message LED on and off for any telephone connected to the system. For telephones without a display, Send/Remove Message is the only way the Message LED can be turned on unless the telephone is programmed as the message-waiting receiver for a fax machine or Calling Group, or the system has a voice messaging system connected.

A **Send/Remove Message** button is a fixed button on Queued Call Consoles (QCCs) and cannot be reassigned. The button is factory-assigned to DLCs on button 32 when the system has fewer than 32 lines. If the system has 32 (or more) lines, the button is not assigned; button 32 is assigned to line 32. On a DLC, Send/Remove Message can be assigned to any available button via extension or centralized telephone programming.

On QCCs and digital DLCs with a DSS, as well as the MERLIN II System Display Consoles, the system operator can use the LEDs next to the **DSS** buttons to determine whether a system operator turned the Message LED on. Before sending a message, the system operator presses the **Message Status** button and checks the red LED next to the **DSS** button of the person to whom the message will be sent; the red LED is on when a message is waiting from a system operator and off if no message is waiting. The LEDs on the DSS do not reflect whether Message LEDs were turned on by using the Leave Message feature, voice messaging system, fax arrival, or a message left for a Calling Group. To leave a message-waiting indication if the LED is off, the system operator presses the programmed **Send/Remove Message** button, followed by the **DSS** button or **Auto Dial** button for the person for whom the message is intended. The system operator presses the **Message Status** button to return to normal call handling. MLX DLC system operators can also press the **Feature** button and select the feature from the display.

NOTE:

If the system operator sends a message while on a call, only an inside caller hears the touch-tones; an outside caller does not.

When the LED next to a **DSS** button is on and the system operator uses the Send/Remove Message feature, the user's message LED is turned off. When the LED next to a **DSS** button is off and the system operator uses the Send/Remove Message feature, the user's Message LED is turned on.

A DLC operator without a DSS can check message status by using **Auto Dial** buttons programmed with extension numbers. The red LED next to an **Auto Dial** button indicates whether the Message LED is on. A QCC system operator without a DSS cannot check message status. If a system operator who cannot check status sends a message, that message can cancel a message waiting indication sent by another system operator.

Leave Message

The Leave Message feature allows any user (including system operators) to send messages to co-workers with display telephones.

When the user calls a co-worker with a display telephone and receives a busy signal or no answer, the user presses a programmed **Leave Message** button or presses the **Feature** button and dials 25. For MLX display telephones, the user selects the feature from the display while listening to ringback or a busy tone. A message is sent to the display telephone user. The message includes the caller's name (if labels are programmed) or extension, and the time and date of the call.

If the caller leaves another message for the same person before that person responds to a previous message, the previous message is overwritten. A person with a display telephone who has received a message sees only the caller's name (if labels are programmed) or extension and date and time for the new message.

To use the Leave Message feature without calling a user, the multiline telephone user (without lifting the handset) presses the **Feature** button, and then dials 53 and the person's extension number. QCC system operators cannot use Leave Message without calling the user.

NOTE:

If the Message LED of the person receiving the message is already on, using the Leave Message feature does not turn the LED off even if a system operator uses Leave Message to send a message to a display telephone user.

When a user with any telephone tries to use the Leave Message feature to send a message to a person with a single-line telephone or a multiline telephone without a display, the caller hears a single beep indicating that a message must be left with the system operator. If the caller has a display telephone, the message `Cannot Send Message` is displayed.

When a user tries to send a message by using the Leave Message feature for a co-worker with a display telephone whose message box is full, the co-worker's telephone continues to ring and the caller's telephone beeps once. If the caller has a display telephone, `Message Box Full` is displayed, and the caller must leave a message with the system operator instead.

Users can cancel a sent message by pressing the **Feature** button and dialing *53 plus the extension where they left the message. QCC operators cannot cancel messages they sent.

Receiving Messages

When the Message LED on a user's telephone is on or when a single-line telephone user hears a stutter dial tone when lifting the handset, there is a message waiting for that person or for the Calling Group (if the telephone is programmed as a Message Waiting Receiver for a Calling Group). The message can be from the following sources:

- The system operator
- A voice messaging system
- A fax machine, if the telephone is programmed as a Fax Message Waiting Receiver for fax transmissions
- Another user

When the Message LED is on and the user does not have a display telephone, he or she must check with potential sources (that is, voice messaging system or system operator) to get the messages. When all messages are retrieved, the user can turn the LED off by pressing the **Feature** button and dialing **54**. In this case, the Message LED goes off even if the message waiting indication was sent by more than one source (such as the system operator and a fax machine).

A user with a display telephone can press a programmed **Next Msg** button or use the display to read messages. The Return Call feature allows the display telephone user to call the person who left the message with the press of a button.

Display telephones show messages in reverse order of when they were received—the most recent message is displayed first. Each message is identified on the display as follows:

Table 24. Message Waiting Display Identifiers

| Type of Display Telephone | Identifier | Meaning |
|---------------------------|-------------------|---|
| Analog multiline | * | New or unread message |
| | Call ext. or name | Message from <i>caller's extension number</i> or <i>caller's name</i> |
| MLX | * | New or unread message |
| | ATT | Message from system operator (attendant) |
| | FAX | You have a fax |
| | VMS | You have a voice mail message |
| | EXT | Message from an extension (co-worker) |

The type of message indicated does not allow a Calling Group message-waiting receiver to distinguish between a message left for the Calling Group and a fax or personal message.

An MLX display telephone user (including a QCC operator) can read messages by pressing the **Menu** button and selecting `Messages` from the display. The first line of the most recent message received is shown on the display. To see the rest of the message, the user presses the **More** button. To see the next message, the MLX display telephone user selects `Next Message` from the display. To return the call, the MLX display telephone user (including a QCC operator) selects `Return Call` from the display. The extension of the person who left the message is dialed automatically. To delete the message, the user selects `Delete Message` from the display. The Message LED goes off when all messages have been deleted.

An analog multiline telephone user can read messages by pressing the **Message** button. The first message received is shown on the display. If the message is longer than one line, the user presses a programmed **Scroll** button or presses the **Feature** button and dials 29. To see the next message, the user presses a programmed **Next Message** button or presses the **Feature** button and dials 28. To return the call, the user presses a programmed **Return Call** button or presses the **Feature** button and dials 27. To delete the message, the user presses a programmed **Delete Message** button or presses the **Feature** button and dials 26. The Message LED goes off when all messages have been deleted.

In Release 2.0 and later when using the Return Call feature for a voice messaging system, a call is returned to the voice messaging system, not to the specific VMI port that sent the message-waiting code.

Multiline telephone users without a display cannot use programmed message buttons or feature codes to respond to messages. Normally, the Message LED is turned off by the system operator. However, an analog multiline telephone user (excluding BIS-34 telephones) can turn off the Message LED by pressing the associated button. An analog multiline telephone user with a BIS-34 telephone and MLX telephone users without a display can turn off the LED by pressing the **Feature** button and dialing 54.

The user should check with all message sources (system operator, fax, voice messaging) before turning off the LED.

Fax Message Waiting Receivers

The Fax Message Waiting feature notifies designated telephones of the arrival of fax transmissions. Up to four telephones can be programmed to receive message-waiting indications when a fax transmission is received on a specific fax machine. The Message LED is turned on when the Fax Message Threshold is exceeded. The Fax Message Threshold is the length of time (0-30 seconds) before the system assumes a fax has arrived.

Return Call is not operable for messages received from a fax machine and cannot be used to make a call to the fax.

NOTE:

Fax machines can only send message-waiting indication. They cannot receive message-waiting indication from other fax machines.

Calling Group Message Waiting Receivers

A telephone can be programmed as the message-waiting receiver for a Calling Group. The user can receive personal messages or messages intended for the Calling Group from any of the sources listed under Receiving Messages.

Posted Messages

Users can post a message to provide special information to co-workers with display telephones—for example, where the person is when not answering the telephone or why the person does not want to be disturbed. When a user with a display telephone calls a co-worker with a message posted, the posted message is shown on the caller's display (even if the call is answered). Users do not need a display telephone to post a message.

Twenty different posted messages can be programmed in the telephone system. Ten messages are programmed by the factory and can be changed. Ten additional messages can be programmed, and are factory set as "CUSTOM MSG ##." Beginning with Release 2.0, posted message 01, Do Not Disturb, cannot be changed.

Table 26. Posted Messages

| | | | | | | | |
|----|----------------|----|-----------------|----|---------------|----|---------------|
| 01 | DO NOT DISTURB | 06 | IN A CONFERENCE | 11 | CUSTOM MSG 11 | 16 | CUSTOM MSG 16 |
| 02 | OUT TO LUNCH | 07 | WITH A CLIENT | 12 | CUSTOM MSG 12 | 17 | CUSTOM MSG 17 |
| 03 | AT HOME | 08 | WITH A CUSTOMER | 13 | CUSTOM MSG 13 | 18 | CUSTOM MSG 18 |
| 04 | OUT SICK | 09 | AWAY FROM DESK | 14 | CUSTOM MSG 14 | 19 | CUSTOM MSG 19 |
| 05 | IN A MEETING | 10 | OUT ALL DAY | 15 | CUSTOM MSG 15 | 20 | CUSTOM MSG 20 |

See Labeling for more information on creating posted messages.

In a Release 2.0 or later system, when Do Not Disturb is turned on the system automatically posts the DO NOT DISTURB message. This message appears on the Home screen of an MLX display telephone user with Do Not Disturb turned on, and on the screen of any inside caller with a display telephone who calls that user. The system automatically unposts the DO NOT DISTURB message when the user turns off the feature.

Users with analog multiline or MLX-10 non-display telephones must program a **Posted Message** button for the system to automatically post or unpost the message when the feature is turned on or off. A user can post or unpost a DO NOT DISTURB message by pressing a programmed **Posted Message** button. However, this does not turn on or off the Do Not Disturb feature.

Users with MLX display telephones can post a message by pressing the **Menu** button, selecting *Posted Msg [Post]* from the display, selecting the desired message, and selecting *Post*.

Users with MLX non-display telephones and analog multiline display telephones can program a **Posted Message** button with programming code *751. To post a message, the user presses the programmed **Posted Message** button (the green LED next to the button flashes), and then dials the code for the desired message (the LED next to the button becomes steady). To cancel a posted message, the user presses the programmed **Posted Message** button and dials 00 (the green LED next to the button goes off).

Considerations and Constraints

In Release 2.0 and later, if the user has a programmed **Posted Message** button and the Do Not Disturb feature is turned on, the system automatically posts the DO NOT DISTURB message on the display. When the feature is turned off, the message is canceled. However, posting or canceling the DO NOT DISTURB message does *not* turn the feature on or off.

A user does not need a display telephone to use the Leave Message feature, but the person to whom the message is sent must have a display telephone.

Unlike Send/Remove Message, when the Leave Message feature is used to send a message to a person whose Message LED is on, the LED is not turned off even if the caller is a system operator.

If a system operator uses the Send/Remove Message feature while on a call, only an inside caller hears the touch-tones; an outside caller does not.

If 10 messages have been stored and a user tries to send an eleventh message, the caller hears a beep and display telephones show the Message Box Full message.

Responding to messages by using Return Call does not delete the message. The user must delete all messages before the Message LED goes off.

A fax machine can send the message waiting indication but a fax machine cannot be assigned as a Message Waiting Receiver for another fax or for a Calling Group.

If a fax message-waiting indication is deleted by one of the four message waiting receivers, the message is deleted from all analog multiline display telephones programmed as a message-waiting receivers for the fax, but the message is not deleted from MLX display telephones programmed as message-waiting receivers for the fax.

Each Calling Group can have only one telephone assigned as its Message Waiting Receiver, but the same telephone can be assigned as the Message Waiting Receiver for more than one Calling Group.

Messages can be posted only by using a programmed button or, for MLX display telephone users, by selecting the feature from the display.

A single-line telephone user cannot post a message.

If CUSTOM MSG_{nn} appears on a user's display, the user has posted a nonexistent message. (A message has not been programmed for this message number by the system manager.)

Posted messages are only seen by multiline display users. Users with single-line telephones or multiline telephones without a display cannot receive a message posted by another user.

Posting a message does not prevent the telephone from ringing.

Telephone Differences

Direct-Line Consoles

The Send/Remove Message feature is a system operator-only feature used by the DLC system operator to turn on the **Message** LED to indicate a message waiting. For telephones without a display, Send/Remove Message is the only way the Message LED can be turned on and off by system operators.

A **Send/Remove Message** button is factory assigned to an MLX-28D used as a DLC. When a system has more than 32 lines connected, the Send/Remove Message is factory assigned to analog DLCs with 34 buttons or more on button 32. The **Send/Remove Message** button is replaced with Line 32 when the system has 32 lines or more. Send/Remove Message is not a fixed feature and can be assigned to any available button on either an analog or MLX DLC.

Queued Call Consoles

A QCC operator can use Leave Word Calling only by selecting the feature from the display. A **Send/Remove Message** button is programmed as a fixed feature on a QCC.

Other Multiline Telephones

The five-button analog multiline telephone has neither a Message LED nor a **Message** button.

Single-Line Telephones

Single-line telephone users cannot post a message,

To use the Leave Message feature while listening to ringback or the busy tone, the single-line telephone user dials **#25**. To use Leave Message without calling the extension, the single-line telephone user lifts the handset and dials **#53** (while listening to inside dial tone) and the person's extension number.

In either case, if the person's message box is full or the receiver person a single-line telephone or a multiline telephone without a display, the caller hears a beep indicating that the message was not left.

To cancel a message sent, the single-line user lifts the handset and (while listening to inside dial tone) dials **#*53** and the extension number where the message was left.

Single-line telephone users without a **Message** LED hear a recall dial tone when a message is waiting. A single-line telephone user cannot respond to messages by using feature codes. Normally, if a single-line telephone has a **Message** LED, it is turned off by the system operator. However, a single-line user can turn off the Message LED by lifting the handset and (while listening to inside dial tone) dialing **#54**. The user must check with all message sources (system operator, fax, voice messaging) before turning off the LED.

Feature Interactions

| | |
|--------------------------------|--|
| Barge-In | If Barge-In is used to contact a user with a posted message, the caller's telephone does not display that message. |
| Directory | When an Extension Directory is used to call a co-worker with a posted message, the posted message is not displayed on the caller's telephone. |
| Direct Station Selector | When a system operator presses the Message Status button on a DSS adjunct, the LEDs on the DSS reflect only messages left by a system operator using the Send/Remove Message feature and not messages left by any user (including a system operator) using the Leave Message feature. |
| Display | <p>When users try to send messages to a telephone with a full message box, they see <code>Message Box Full</code> on the display, When a user tries to retrieve messages and the message box is empty, <code>No Messages</code> appears on the display.</p> <p>When a user has a message from a co-worker, the display shows the name or extension number (if no label is programmed) of the caller and, on MLX telephones, the time and date the message was left. An unread message is marked with an asterisk (*).</p> <p>Messages can also be received from outside callers (if the telephone has a voice messaging system) and from the system operator. On MLX display telephones, messages left by a voice messaging system are identified as <code>VMS</code>, messages from the system operator are identified as <code>ATT</code>, and message waiting indications received by a Fax Message Waiting Receiver are identified as <code>FAX</code>. On analog multiline telephones, messages are indicated by <code>Call extension</code> or <i>caller's name</i>.</p> <p>Return Call is not operable for messages received from a fax machine and cannot be used to make a call to the fax.</p> <p>The type of message indicated does not allow a Calling Group message-waiting receiver to distinguish between a message left for the Calling Group and a fax or personal message.</p> |
| Do Not Disturb | <p>In a Release 2.0 or later system, when Do Not Disturb is turned on the system automatically posts the <code>DO NOT DISTURB</code> message. This message appears on the Home screen of an MLX display telephone user with Do Not Disturb turned on, and on the screen of any inside caller with a display telephone who calls that user. The system automatically unposts the <code>DO NOT DISTURB</code> message when the user turns off the feature.</p> <p>Users with analog multiline or MLX-10 non-display telephones must program a Posted Message button for the system to</p> |

| | |
|--|--|
| | <p>automatically post or unpost the message when the feature is turned on or off. A user can post or unpost a DO NOT DISTURB message by pressing a programmed Posted Message button. However, this does not turn on or off the Do Not Disturb feature.</p> |
| Group Calling | <p>Users can leave messages for the Calling Group only if the system has been programmed with a designated Calling Group Message Receiver. The Calling Group also receives fax message-waiting indications directed to the Calling Group. The message-waiting receiver cannot distinguish between messages left for the Calling Group and fax or personal messages.</p> |
| Labeling | <p>The labels stored in the Extension Directory appear on MLX display telephones when users send each other messages. Messages include the name (the 7 character label) of the user who sent the message and the time and day the user called.</p> <p>Posted Messages (except for Posted Message 01, DO NOT DISTURB) are created and changed using Labeling.</p> |
| Multi-Function Module | <p>A single-line telephone with a Message LED connected to an MFM can receive message-waiting indications.</p> |
| Signaling | <p>If a display telephone user presses only a Signaling button to send an audible signal to a telephone with a posted message, the posted message at the destination is not shown on the display. However, if a display telephone user selects an SA or ICOM button, lifts the handset, and uses the Signaling button to dial the extension, the posted message at the destination telephone is shown.</p> |
| System Access/ Intercom Buttons | <p>When a Shared SA button is used to leave a message for a display user, the extension shown is that of the telephone with the Shared SA button and not that of the principal owner.</p> <p>When a principal extension owner with an MLX display telephone posts a message and a call is answered at the Shared SA button, the Home screen on which the posted message was previously shown is not restored. If the principal owner presses the Home button or makes or receives a call, the Home screen is restored.</p> |
| Transfer | <p>A non-display user who sends a message by using Leave Message while a transfer to another telephone is in progress cannot determine who received the message. For example, if extension A calls extension B and extension B transfers the call to extension C, and if extension A sends a message before the transfer is complete, extension B receives the message. If extension A sends a message after extension B completes the</p> |

transfer, extension C receives the message even if extension C does not answer and the call is ringing at extension B as a transfer return.

If an inside call is transferred to a telephone with a posted message, only the display telephone user who transfers the call, and not the original caller, sees the posted message even after the transfer is completed.

If a call is transferred to an extension programmed as a fax port, the message indication is not sent to the fax message-waiting receiver regardless of the amount of time programmed for the Fax Message Threshold.

VMI

In Release 2.0 and later when using the Return Call feature for a voice messaging system, a call is returned to the voice messaging system, not to the specific VMI port that sent the message-waiting code.

Microphone Disable

At a Glance

| | |
|--------------------|---|
| Users Affected | Telephone users, DLC operators |
| Reports Affected | Extension Directory |
| Mode | All |
| Telephones | All MLX (except QCC) |
| System Programming | Enable or disable individual MLX telephone microphones: ● Extensions → More → Mic Disable |
| Factory Setting | Enabled |

Description

Microphone Disable can be assigned via system programming to any MLX telephone except a Queued Call Console (QCC) to limit the use of the speakerphone. When the feature is assigned, the microphone does not function, but the speaker functions normally. A user can listen to calls or announcements over the speakerphone but must use the handset to respond.

For some features, such as Auto Dial, Last Number Dial, or Saved Number Dial, the system automatically selects a line and activates the speakerphone. When one of these features is used on a telephone with Microphone Disable assigned, the line is selected and the speaker is activated, but the microphone is muted automatically; the red LED next to the **Mute** button goes on. To be heard, the user lifts the handset and the Mute and Speaker LEDs go off.

Also, when group pages or voice-announced transfers are received on a telephone with Microphone Disable assigned, the user can hear the announcement over the speakerphone, but the microphone is muted automatically. The user must lift the handset to speak to an inside caller who is transferring a call or calling the user via an **SA Voice** or **ICOM Voice** button.

Microphone Disable is appropriate when speakerphones pick up too much background noise, or are needed only by some employees.

Considerations and Constraints

The LED next to the **Mute** button goes on whenever the speakerphone is activated. Pressing the **Mute** button does not turn off the LED or deactivate Microphone Disable.

If a user presses the **Speaker** button before lifting the handset, the system selects a line and the user can dial a number. The microphone is muted and the user must lift the handset to speak to the person being called.

Telephone Differences

Queued Call Consoles

The microphone on a QCC cannot be disabled.

Other Multiline Telephones

Microphone Disable cannot be assigned to analog multiline telephones.

Single-Line Telephones

Microphone Disable cannot be assigned to single-line telephones.

Feature Interactions

| | |
|---|---|
| Auto Dial, Last Number Dial, and Saved Number Dial | Pressing an Auto Dial , Last Number Dial , or Saved Number Dial button turns on the speakerphone so the user can hear the number being dialed. However, when an MLX telephone user's microphone is disabled, the user must lift the handset to talk once the call is answered. |
| HFAI | Users whose microphones are disabled cannot use HFAI to respond to voice-announced calls, Pressing the HFAI button does not turn on the LED or activate the feature. |
| Paging | Calls made to Speakerphone Paging Groups can still be heard over telephones whose microphones are disabled. |
| Transfer | Calls can be transferred with a voice announcement to users whose microphones are disabled, but the users must lift the handset to talk. |
| Voice Announce to Busy | Users who are on their telephones and whose microphones are disabled can still hear the voice-announced call over the speakerphone. They must press the button with the incoming call and use the handset to talk to the caller. |

Multi-Function Module

At a Glance

| | |
|------------------|---|
| Users Affected | Telephone users except DLC, QCC operators |
| Reports Affected | SMDR |
| Mode | All |
| Telephones | MLX telephones except QCC |
| Hardware | Tip/ring interface |



RISK OF ELECTRICAL SHOCK: Follow all warnings and cautions.

WARNING:

- *ONLY a qualified technician should install, repair, or set options for an MFM.*
- *Do not touch the circuitry on the MFM. Touching the circuitry may result in component damage from electrostatic discharge.*
- *Before installing the MFM, disconnect all trunk and/or power cords attached to the MLX telephone. This is to ensure that no hazardous voltages are present during assembly. Ringing voltage from the MFM attached to the MLX telephone can cause electrical shock if adjustments are made while the cords are connected.*

Description

The Multi-Function Module (MFM) is an optional adapter installed inside an MLX telephone and used for connecting tip/ring or external alert devices. The MFM operates on one of the two B-channels assigned to the telephone; therefore, calls can be made to and from the device independently of the telephone. The B-channel is also used for the Voice Announce to Busy feature. Because of this, when a call is active at both the MLX telephone and the MFM device, the Voice Announce to Busy feature cannot be used to reach the MLX telephone user. Conversely, if the Voice Announce to Busy feature is being used to reach

the MLX telephone user, calls cannot be made from the device connected to the MFM. In addition, if the Voice Announce to Busy feature is being used at the same time that a call is received at the MFM extension number, the caller hears ringing and the device rings if it is capable. But the call to the MFM extension number cannot be answered until one of the B-channels is free (the MLX telephone user hangs up or the person calling the MLX telephone user hangs up).

Although each digital station jack used to connect an MLX telephone is assigned only one logical ID, the system automatically assigns two extension numbers—one for the MLX telephone and one for the device connected to the MFM. Both extension numbers are assigned to the digital jack whether or not an MFM is connected. Since a separate extension number is assigned, features and trunk access can be assigned to the MFM independently of the MLX telephone. See System Numbering for details on specific extension numbers assigned.

The ringing patterns for devices connected to an MFM are similar to those of an MLX telephone rather than a single-line telephone—one ring for inside calls, two rings for outside calls, and a ring and two beeps for priority ring or transfer return.

A switch on the MFM can be set for one of the following operations:

- Tip/ring interface
- Supplemental Alert Adapter (SAA)

Tip/Ring Interface

When the MFM is set for tip/ring interface operation, only dual-tone multifrequency (DTMF) tip/ring devices can be used to make and/or receive inside and outside calls. The following types of DTMF devices can be used:

- single-line telephones
- modems
- fax machines
- credit card verification terminals
- cordless single-line telephones
- answering machines
- speakerphones that emulate a tip/ring device

Supplemental Alert Adapter

When the MFM is set for SAA operation, an external alert that requires a 48-VDC contact closure can be connected.

If the external alert is used to supplement the ringing for both inside and outside calls, the MFM should be assigned (via centralized telephone programming) as a Primary Individual Coverage receiver with the ringing option of Immediate Ring. The MLX telephone can use Coverage On/Off to activate the alert. In addition, by specifying that both inside and outside calls or only outside calls are covered with the Coverage arrangement, the sender (in this case the MLX telephone user) can specify that the device (the receiver) rings for both inside and outside calls or only for outside calls.

In Release 2.0 and later releases, Coverage VMS can be used to prevent outside calls from being sent to voice mail. When this feature is turned on, only calls from inside extensions receive voice mail Coverage. Outside calls continue to be sent to any other Coverage in service.

If the external alert is used to supplement ringing only for calls received on Personal Lines (outside lines assigned to buttons), the same outside trunks and ringing options assigned to the MLX telephone should also be assigned to the MFM. In this arrangement, the MFM device does not ring when inside talk are received on an **SA** or **ICOM** button.

An external alert connected to an MFM set for SAA operation can be manually signaled, it can serve as a Calling Group Calls in Queue Alarm, or it can provide supplemental alerting for after-hours calls received in a Night Service group.

Programming Requirements

Although the devices connected via an MFM may not have buttons, the system treats them as multiline telephones with 34 buttons. In Hybrid/PBX mode, the system automatically assigns one **SA Ring**, one **SA Voice**, and one **SA Originate Only** button to the MFM. In Key mode, the system automatically assigns one **ICOM Ring** and one **ICOM Voice** button to the MFM. In Behind Switch mode, the system automatically assigns one **ICOM Ring**, one **ICOM Voice**, and one **Prime Line** button.

To ensure proper operation of devices connected via an MFM, the following should be assigned via centralized telephone programming:

- Voice Announce to Busy should be disabled.
- The **SA** or **ICOM** button assignments should be changed to one **SA Ring** or **ICOM Ring** and one **SA Originate Only** or **ICOM Originate Only** button.
- Ringing/Idle Line Preference should be enabled.

- The Automatic Line Selection sequence should be set to the following:
 - **SA Ring** or **ICOM Ring**
 - **SA Originate Only** or **ICOM Originate Only**
 - In Key and Behind Switch modes: outside lines that make calls from the MFM device.
 - In Behind Switch mode only: the Prime Line.

When the ALS sequence is set to select an **SA** or **ICOM** button, an outside line can be selected by dialing the Idle Line Access code (usually 9) in Key and Behind Switch modes, or by dialing the pool dial-out or Automatic Route Selection code in Hybrid/PBX mode. If ALS is set to select an outside line button before an **SA** or **ICOM** button, the device cannot be used to make inside calls (inside calls can be received only).

- Ring Timing options should be set to No Ring for each outside line on which calls will not be received.
- When the device is used only on Personal Lines for supplementary answering (such as an answering machine) or ringing (such as an external alert) and trunks are assigned to or removed from the associated MLX telephone, the trunks should also be assigned to or removed from the MFM.
- When the device is used for both inside and outside calls to supplement ringing (external alert) or to answer or screen calls (answering machine), calls can be redirected to the device by assigning a **Primary Cover**, **Secondary Cover**, **Group Cover**, or **Shared SA** button. In addition, the MLX telephone user can activate Forward and Follow Me to redirect incoming calls to the device. However, Coverage and Forward and Follow Me should not be used simultaneously.

Additionally, the following features cannot be used:

- Personal Speed Dial
- System Speed Dial
- Account Code Entry
- Pickup (individual and group)
- Reminder Service
- Log in and out of calling group

NOTE:

Forward and Follow Me (including Remote Call Forward) and Privacy are not recommended because the user does not have an LED that indicates when the feature is active.

Considerations and Constraints

When both the MLX telephone and the device connected to an MFM are in use, the Voice Announce to Busy feature cannot be used to reach the MLX telephone user.

The tip/ring or SAA interface is selected by setting pin straps in the MFM. Only authorized technicians or dealer representatives can install or set options in the MFM.

When Ringing/Idle Line Preference is turned on for an MFM and Automatic Line Selection is set to an outside trunk, inside calls cannot be made and features cannot be used. Both inside and outside calls can be received.

Calls are independently sent to the MLX telephone and its associated MFM. The following features can be used when the user wants calls to be received at both the MLX telephone and the device connected to an MFM:

- **Cover** buttons
- **Shared SA** buttons
 - buttons assigned the same outside lines
- Forward and Follow Me
- Transfer

An MFM can be assigned as a calling group delay announcement or as a Calls-in-Queue alert for a calling group queue.

Tip/ring devices connected on an MFM should not be used with Call Management System (CMS).

Tip/ring applications that require a switchhook flash for operation (such as MERLIN Attendant or MERLIN MAIL Voice Messaging System) cannot be connected via an MFM because the system ignores the switchhook flash sent by the device.

When a **Shared SA** button or a shared Personal Line is assigned to the MFM, the device cannot detect when a line is picked up by the sharing user. Therefore, if an answering machine with the built-in ability to disconnect when another person picks up the same line is connected to the MFM, the machine does not automatically disconnect if the user picks up a call on the shared line that was already answered by the answering machine.

If the MFM is assigned as a Primary Individual Coverage receiver and the MLX telephone user uses Forward or Follow Me, and if an answering machine that disconnects when another person picks up the same line is connected to the MFM, the machine does not automatically disconnect if the forwarding destination picks up the call.

Mode Differences

Hybrid/PBX Mode

When Ringing/Idle Line Preference is turned on and Automatic Line Selection is set to select an **SA** button, an outside line can be selected by dialing the pool dial-out or Automatic Route Selection code.

Key and Behind Switch Modes

When Ringing/Idle Line Preference is turned on and Automatic Line Selection is set to select an **ICOM** button, an outside line can be selected by dialing the Idle Line Access code (usually 9).

Telephone Differences

Direct-Line Consoles

An MFM in a Direct-Line Console (DLC) is not an operator. It serves only as another extension without the characteristics of the operator extension.

Queued Call Consoles

An MFM cannot be connected to a Queued Call Console (QCC).

Other Multiline Telephones

An MFM can be installed only in MLX telephones and cannot be used with analog multiline telephones.

Single-Line Telephones

A single-line telephone or other type of tip/ring device up to 1000 feet away can be connected to the MFM and used to make and receive inside and outside calls.

A single-line telephone connected to an MFM cannot use the Conference, Hold, or Transfer features.

Feature Interactions

| | |
|---------------------------------|--|
| Auto Dial | An inside Auto Dial button can be programmed on an analog multiline telephone to determine whether devices such as fax machines or modems connected to the telephone via an MFM are in use. |
| Automatic Line Selection | The Automatic Line Selection order for the MFM should be set to select SA Ring or ICOM Ring , then SA Originate Only or ICOM Originate Only , and then outside lines assigned to the MFM or the Prime Line in Behind Switch mode. When Ringing/Idle Line Preference is turned on for an MFM and Automatic Line Selection is set to an outside trunk, inside calls cannot be made and features cannot be used. Both inside and outside calls can be received. |
| Callback | Both Automatic and Selective Callback can be used from an MFM; however, a Callback call cannot be manually canceled. |
| Conference | The Conference feature cannot be used on the MFM since the system ignores the switchhook flash sent by the MFM. |
| Coverage | An MFM can be a sender or a receiver for Individual or Group Coverage. This allows the associated MLX telephone user to screen calls by using an answering machine connected to the MFM or to supplement ringing by using an external alert connected to the MFM. A sender can use Coverage On/Off to prevent calls from being sent to an answering machine. |
| Do Not Disturb | Do Not Disturb is not recommended because the device connected to an MFM does not have an LED to indicate when the feature is active. |
| Forward and Follow Me | Forward and Follow Me (including Remote Call Forward) are not recommended on an MFM because the user does not have an LED that indicates when the feature is active. |
| Group Calling | An MFM can be a member of a calling group, assigned as a delay announcement for a calling group, or used to connect the Calls-in-Queue alert for the calling group. An MFM used for the delay announcement or for the Calls-in-Queue alert should not be assigned as a group member. |
| Hold | Calls cannot be put on hold on an MFM, because the system ignores the switchhook flash. |
| Messaging | A single-line telephone with Message LED connected to an MFM can receive message-waiting indications. |

| | |
|--------------------------------------|---|
| Night Service | An MFM can be a member of a Night Service group. An external alert connected to the MFM in the SAA operation, when assigned to a Night Service group, can be used for supplemental ringing for after-hours calls. |
| Paging | An MFM should not be a member of a Speakerphone Paging Group. |
| Park | An MFM user cannot park a call but can pick up a call parked by another user. |
| Personal Lines | <p>When Personal Lines are assigned or removed from the associated MLX telephone, they should also be removed from the MFM when the device connected is used to answer calls or provide supplementary ringing.</p> <p>As a general rule, Personal Lines should be removed from MFMs unless the device connected (such as a fax or a single-line telephone) requires a Personal Line on which to make an outside call.</p> |
| Power Failure Transfer | A single-line telephone connected to an MFM cannot be used for Power Failure Transfer. |
| Privacy | The use of Privacy is not recommended for MFMs because the user does not have an LED that indicates when the feature is active. |
| Ringling/Idle Line Preference | Ringling/idle Line Preference should be turned on for an MFM. |
| Ringling Options | <p>The ringling patterns for tip/ring devices connected to an MFM are those of an MLX telephone rather than a single-line telephone—one ring for inside calls, two rings for outside calls and three rings for priority ring or transfer return. Personalized ringling patterns cannot be programmed for an MFM. Centralized telephone programming must be used to program Ringling Options (Immediate Ring, Delay Ring, or No Ring).</p> |
| Saved Number Dial | Saved Number Dial cannot be used on an MFM. |
| Signaling | When set for SAA operation, an MFM can receive a manual signal but cannot send one. An MFM cannot receive a manual signal when set for tip/ring operation. |
| SMDR | An MFM is treated as an MLX telephone on SMDR reports. The system waits until the end of dialing before sending a connect message to the MFM, and any digits dialed after the connect message is received are not recorded on SMDR reports. |

| | |
|--|--|
| Speed Dial | Speed Dial cannot be used with an MFM. |
| System Access/ Intercom Buttons | <p>It is recommended that one SA Ring or ICOM Ring button and one SA Originate Only or ICOM Originate Only button be assigned to the MFM. At least one SA or ICOM button must be assigned.</p> <p>Assigning a Shared SA button on the MFM for one or more of a principal extension's SA buttons can lead to a situation in which the principal extension can pick up calls that have already been answered by the answering machine. The answering machine cannot be prevented from answering these calls.</p> |
| Transfer | Calls cannot be transferred from an MFM because the system ignores the switchhook flash. |
| Voice Announce to Busy | Voice Announce should be disabled because the MFM does not support a speaker. The Voice Announce to Busy feature cannot be used when both the MLX telephone and the device connected to its associated MFM are in use. An MFM cannot make and answer calls when Voice Announce to Busy is being used to reach the MLX telephone user. The calls ring at the MFM but cannot be answered until the B channel is freed (either the MLX telephone user or the person calling the MLX telephone user hangs up). |

Music-on-Hold

At a Glance

| | |
|--------------------|---|
| Reports Affected | System Information |
| Mode | All |
| Telephones | All |
| System Programming | Designate the Music-on-Hold port: ● <code>AuxEquip</code> → <code>MusicOnHold</code> |
| Maximums | 1 Music-on-Hold port per system |

Description

Music-on-Hold can be used to provide music or recorded information to an outside caller in the following feature interactions:

- Conference (while on hold)
- Direct Calling Group (while waiting in the Calling Group queue for a busy extension after listening to the delay announcement)
- Hold

NOTE:

The music source or recorded announcement device must be connected to a ground-start or loop-start trunk jack programmed for Music-on-Hold. If Music-on-Hold is used without connecting a music source properly, the outside caller will receive silence.

In addition, Music-on-Hold can be programmed for the Transfer Audible feature as an alternative to ringback in the following feature interactions:

- Camp-On
- Hold, Transfer, and Conference for single-line telephones
- Park
- Transfer

If Transfer Audible is to be programmed for Ringback instead of Music-on-Hold, Ringback will apply only to transferred calls. If the outside caller is put on hold, the caller will hear music, a recorded announcement, or silence, not Ringback. See Table 26.

Table 26. Music-on-Hold and Ringback

| <u>Transfer Audible</u> | <u>Transferred Calls</u> | <u>Calls on Hold</u> |
|-------------------------|--|---|
| Ringback | Ringing | Music, recorded announcement, or silence (see note below) |
| Music-on-Hold | Music, recorded announcement, or silence | Music, recorded announcement, or silence |

NOTE:

This constraint applies only to multiline telephones, as single-line telephones do not have Hold capability.

Considerations and Constraints

Music-on-Hold is not provided to inside callers.

Direct Inward Dialing (DID) and tie-trunk jacks cannot be used for Music-on-Hold.

A trunk jack designated for Music-on-Hold cannot be grouped in a pool.

When programming a trunk jack for Music-on-Hold, the entire system is forced idle.

If you use equipment that rebroadcasts music or other copyrighted materials, you may be required to obtain a copyright license from or pay fees to a third party such as the American Society of Composers, Artists, and Producers (ASCAP) or Broadcast Music Incorporated (BMI). Or you can purchase a Magic On Hold[®] system, which does not require such a license, from an authorized dealer.

Mode Differences**Hybrid/PBX Mode**

In the Hybrid/PBX mode, trunk jacks used for Music-on-Hold cannot be assigned to trunk pools.

Feature Interactions

| | |
|-----------------------|---|
| Callback | An outside caller waiting in the Callback queue hears Music-on-Hold. |
| Camp-On | When Camp-On is used to complete the transfer of an outside call, the caller hears Ringback or Music-on-Hold, depending on how Transfer Audible is programmed. |
| Conference | If the first participant put on hold for a conference call is an outside caller, the caller hears Music-on-Hold until the second participant is added. |
| Group Calling | An outside caller waiting in the calling group queue hears Music-on-Hold. |
| Park | A parked caller hears Music-on-Hold. |
| Personal Lines | A trunk used for Music-on-Hold cannot be assigned as a Personal Line. |
| Remote Access | A Remote Access user who is waiting for a busy trunk pool or extension hears Music-on-Hold. |
| Transfer | If the system is programmed for Music-on-Hold, music is played only during the period before the transfer is completed by the extension originating the transfer. The caller hears music when the Transfer button is pressed and when the extension number is dialed. When the transfer originator presses the Transfer button a second time or hangs up, the caller hears ringing. |

Night Service

At a Glance

| | |
|---|---|
| Users Affected | Telephone users, operators |
| Reports Affected | Extension Information Night Service Information |
| Mode | All |
| Telephones | All |
| Programming Code | *39 |
| Feature Code | 39 |
| MLX Display Label | Night Srvc [Night] |
| System Programming | Assign or remove telephones from Night Service group: <ul style="list-style-type: none"> ● NightSrvce → GroupAssign Select Night Service with Outward Restriction by assigning a password: <ul style="list-style-type: none"> ● NightSrvce → OutRestrict Add or remove telephone numbers from Night Service Emergency Allowed List: <ul style="list-style-type: none"> ● NightSrvce → Emergency Assign telephones to Exclusion List (password not required): <ul style="list-style-type: none"> ● NightSrvce → ExcludeList Select start time and stop time for each day of the week for Night Service with Time Set: <ul style="list-style-type: none"> ● NightSrvce → Start/Stop/Day of Week |
| Maximums | |
| Night Service groups | 8 (one per operator) |
| Number of telephones in Night Service group | Unlimited |
| Calling Group extension per Night Service group | 1 (Release 2.0 and later) |
| Night Service groups per telephone | Unlimited |
| Emergency telephone numbers | 10 |
| Digits per telephone number | 12 |
| Telephones on Exclusion List | Unlimited |
| Password | 4 digits (0-9) |

Description

Night Service provides options for after-hours telephone operation that can be programmed in any combination of the following:

- Night Service with Group Assignment
- Night Service with Outward Restriction
- Night Service with Time Set

Only system operators can activate or deactivate Night Service by using a Direct-Line Console (DLC) or a Queued Call Console (QCC). To activate or deactivate Night Service, a system operator presses the programmed **Night Service** button. If the Night Service with Outward Restriction option is programmed, the green LED flashes when the DLC operator presses the programmed **Night Service** button, and the operator must enter the assigned password (within 60 seconds) to activate or deactivate Night Service. When Night Service is activated, the green LED next to the programmed **Night Service** button goes on. When the feature is deactivated, the green LED goes off.

Night Service with Group Assignment

Each Night Service group is associated with an individual QCC in the Hybrid/PBX mode or an individual DLC during system programming. Any type of telephone as well as one Calling Group (Release 2.0 and later) can be a member of a Night Service group.

When an operator associated with a Night Service group activates Night Service, any calls received on trunks programmed to ring at individual consoles ring immediately at all available telephones assigned to the group. A telephone in a Night Service group is considered unavailable and a Night Service call does not ring at it when any of the following occurs:

- a telephone is in the extension or system programming mode
- a user with an MLX display telephone is using the Alarm Clock or Directory feature
- a telephone is busied-out for maintenance or system programming
- all **SA** or **ICOM** buttons are in use
- a single-line telephone user is on a call

NOTE:

Up to eight Night Service groups can be created, one for each system operator. There is no limit to the number of telephones assigned to each group, and each telephone can be assigned to more than one group.

Night Service with Outward Restriction

Night Service with Outward Restriction prevents unauthorized after-hours use of telephones. When this option is programmed, only authorized system operators can activate and deactivate Night Service, and only authorized users can place calls.

A system operator must enter a password to activate or deactivate Night Service. When one system operator activates or deactivates Night Service by using a password, all consoles are put into Night Service. If Night Service groups are assigned, Night Service is activated or deactivated for all groups and cannot be activated or deactivated independently for each group.

When the Night Service feature is activated, a user must enter a password before a non-emergency outside call is made. When the correct password is entered, the system checks for calling restrictions assigned to each telephone before allowing calls to outside numbers.

A Night Service Emergency Allowed List can be created that includes up to 10 numbers, for example, police or fire departments, each with a maximum of 12 digits. Users who do not know the Night Service password can dial only the numbers on the list; calls to numbers not on the list do not go through unless a password is entered.

One Exclusion List for Night Service can be created to exempt specific telephones from the password requirement. An unlimited number of telephones can be assigned to the list. However, normal calling restrictions (if any) assigned to the telephone are still in effect. Unrestricted telephones on the exclusion list are not protected against unauthorized after-hours use.

Night Service with Time Set

When the Night Service with Time Set option is programmed, the system automatically activates Night Service on all system operator consoles at a specified time of day and on specified days of the week. A different time of day to activate or deactivate Night Service can be programmed for each day of the week. System operators can still override the timer and turn Night Service on and off manually if they prefer. If one system operator overrides the timer, Night Service is activated or deactivated on all consoles.

Night Service can also be activated through system programming for special conditions, such as a midweek holiday.

Considerations and Constraints

A Direct Inward Dialing (DID) call to any member of a Night Service group rings at all group members' telephones.

If a telephone assigned to a Night Service group has the same outside line (Personal Line) as the operator console, calls to this line ring immediately at each telephone even if the Personal Line on the telephone is programmed for Delay Ring or No Ring. If the telephone does not have the outside line assigned, the call rings on an **SA** or **ICOM** button.

When Night Service is deactivated by the system operator or automatically by the system, telephones are reset to their programmed ringing options.

When a feature code is used to activate or deactivate Night Service and Outward Restriction is programmed, the DLC operator does not hear an error tone if an invalid password is entered and, unless a **Night Service** button is programmed, cannot determine whether Night Service is active.

When both Night Service with Outward Restriction and Night Service with Time Set are programmed, the system imposes restrictions automatically.

When Night Service with Outward Restriction and/or Night Service with Time Set is programmed, Night Service is activated or deactivated for all system operator consoles. If Night Service groups are also programmed, Night Service cannot be activated or deactivated for each group independently.

When Night Service with Outward Restriction is activated, and a user with a restricted telephone presses a dialpad button while on a call, the call is disconnected, the user hears a fast busy signal, and the trunk is released. When the dialpad is used, the system assumes that the user is trying to make an outside call, which is not allowed because of the Night Service restriction assigned to the telephone.

System operators can override Night Service with Time Set and turn Night Service on or off manually.

Night Service with Time Set can be deactivated through system programming for special conditions such as a midweek holiday.

An answering machine connected to a 012 module can be set up as a member of a Night Service group to automatically answer after-hours calls.

External alerts, such as strobes, bells, or chimes, can be connected to an analog multiline telephone by using a supplemental alert adapter (SAA) or to an MLX telephone by using a Multi-Function Module (MFM) that is a member of a Night Service group. The external alert sounds or lights when a Night Service call comes into that telephone.

When Night Service with Outward Restriction is used, a system operator must enter a password to manually activate or deactivate Night Service.

Changing the system time while in Night Service mode deactivates Night Service; Night Service must be reactivated manually.

Telephone Differences

Direct-Line Consoles

A DLC operator can also activate Night Service by pressing the **Feature** button and dialing **39**. When a feature code is used to activate or deactivate Night Service and Outward Restriction is programmed, the DLC operator does not hear an error tone if an invalid password is entered and, unless a **Night Service** button is programmed, cannot determine whether Night Service is active.

On a system with 30 lines or fewer, a **Night Service** button is factory-assigned to analog DLCs with 34 buttons or more. On a system with fewer than 30 lines, the **Night Service** button is replaced with line 31. The **Night Service** button is not a fixed feature and can be assigned to any available button on either an analog or MLX DLC.

Queued Call Consoles

The programmed **Night Service** button is assigned as a fixed feature on a QCC.

If more than one QCC system operator is assigned to receive calls on an individual trunk, Night Service must be activated at all assigned positions before calls on the trunk ring on telephones programmed as members of the Night Service group. If Night Service is not activated by one of the QCCs programmed to receive the calls, after-hours calls ring at that position and do not receive Night Service Coverage.

When Night Service is on, unassigned DID extension and Listed Directory Number call types will ring into the QCC queue. If these call types are programmed not to go to the QCC queue, the caller hears an error tone when Night Service is off. However, when Night Service is on, these call types still ring into the QCC queue, regardless of programming.

When multiple Night Service calls are received in the QCC queue at the same time and none of the calls are answered by a Night Service group member (all group member **SA** or **ICOM** buttons are busy), new calls are sent to the QCC queue and can be answered only by the QCC system operator. To avoid this situation, all outside lines assigned to ring on the QCCs should be assigned as Personal Lines on at least one group member's telephone.

Other Multiline Telephones

To make a call when Night Service with Outward Restriction is assigned, the multiline telephone user presses the **Hold** button and dials the password before lifting the handset. When the correct password is entered, the user lifts the handset and can make an outside call.

Single-Line Telephones

Single-line telephones cannot make outside calls when Night Service with Outward Restriction is activated.

Feature Interactions

| | |
|----------------------------------|---|
| Automatic Route Selection | When Night Service with Outward Restriction is programmed, the user must enter the password before dialing the Automatic Route Selection (ARS) dial-out code unless the telephone is assigned to an exclusion list or the number is on an emergency numbers list. |
| Calling Restrictions | For Night Service with Outward Restriction, a Night Service Emergency Numbers List must be created consisting of emergency numbers that can be dialed from any telephone without dialing the password. Any restrictions assigned to a telephone assigned to the exclusion list are in effect when Night Service is activated. |
| Display | If the system operator must enter a password to turn Night Service on and off, the display prompts the operator for the password. No message is displayed when the system operator activates Night Service by using a feature code or when Night Service is off. If an MLX display telephone is in the test mode and a Night Service call arrives and the user exits the test mode while the call is still ringing, the call rings at the telephone. However, the calling information is not displayed. The user must press the Home button to see the call information. |
| Forward and Follow Me | When an extension is a member of a Night Service group and Night Service is activated, calls received at the extension are forwarded to extensions by using Forward and Follow Me but are not forwarded to outside telephone numbers when Remote Call Forward is used. |
| Group Calling | In Release 2.0 and later, a Calling Group can be a Night Service group member. |
| Multi-Function Module | An MFM can be a member of a Night Service group. An external alert connected to the MFM in the SAA operation, when assigned to a Night Service group, can be used for supplemental ringing for after-hours calls. |
| Pickup | A call ringing at a Night Service group telephone can be answered from another telephone by using Pickup. |

- Remote Access** When Shared Remote Access is assigned to a trunk, incoming calls on that trunk receive the Remote Access treatment only when Night Service is activated on all system operator positions that receive calls on the trunk. When a call is received on a trunk assigned with Shared Remote Access and Night Service is not activated, the call rings at the assigned telephone, system operator console, or calling group.
- Ringling Options** When Night Service is turned on, calls received at a Night Service group member's telephone ring immediately even if the line buttons are programmed for Delay Ring or No Ring. When Night Service is turned off, telephones return to their programmed Ring Timing Options.
- System Access/
Intercom Buttons** Night Service calls override any Ring Timing options (Delay Ring or No Ring) programmed for **SA** buttons and ring immediately. On a **Shared SA** button, Night Service calls follow the programmed option (Immediate Ring, Delay Ring, or No Ring).

Notify

See Signal/Notify.

Paging

At a Glance

| | |
|--------------------|---|
| Users Affected | Telephone users, operators |
| Reports Affected | Dial Plan Extension Information Group Paging System Information |
| Mode | All |
| Telephones | All |
| Programming Code | *22 + group or Page All ext. no. |
| MLX Display Label | Group Page [GrpPg] Loudspkr Pg [LdsPg] |
| System Programming | Assign telephones to paging groups: ● Extensions → More → Group Page Designate a loop-start or ground-start/loop-start line jack as a paging port: ● AuxEquip → Ldspkr Pg |
| Maximums | |
| # of Groups | 6 Speakerphone Paging groups 1 Page All group |
| Telephones | 10 to each paging group (see NOTE) |
| # of Line Jacks | 3, programmed as Loudspeaker Paging ports |
| Factory Settings | |
| Extensions | 793-798 (Speakerphone Paging Groups) 799 (Page All Group) |

NOTE:

Each telephone can belong to up to seven paging groups (i.e., each of the six Speakerphone Paging Groups and the Page All Group).

Description

Paging allows users of the system to broadcast announcements using their telephones. There are two types of paging: Speakerphone Paging and Loudspeaker Paging. Speakerphone Paging allows the user to broadcast to specific individuals or designated groups. Loudspeaker Paging allows users to broadcast to specific groups or all, depending on whether or not the loudspeaker system is a multizone paging system.

Speakerphone Paging

An announcement made using Speakerphone Paging is heard on telephones with built-in speakerphones or speakerphone adjuncts. Speakerphone Paging can be directed to an individual telephone, to groups of telephones, or to all speakerphones throughout the system.

Individual Paging

The **SA Voice** or **ICOM Voice** button on multiline telephones is used for Speakerphone Paging directed to an individual telephone (also called *voice-announced inside call*). The user selects the voice button, and then dials the extension for the telephone to receive the voice-announced call. If the voice announcement can be made, the user hears a tone and then speaks into the handset.

NOTE:

Queued call console (QCC) operators cannot make or receive voice-announced inside calls.

The person called hears the announcement over the speakerphone unless one of the following conditions exist:

- The telephone does not have a speakerphone or loudspeaker.
- The person called is using the speakerphone.
- The person called is on an analog multiline telephone, and Voice Announce To Busy is not assigned to the telephone.
- The person called has an MLX telephone and has disabled voice announcements.
- The person called is using Do Not Disturb.
- The person called is a QCC operator.

When any of these conditions exists, the caller hears ringback if the person called has an available **SA** or **ICOM** button; or hears the busy, Call Waiting, or Callback tone when the person called is busy on all **SA**, **ICOM**, or QCC **Call** buttons. If the person called is using Do Not Disturb, the caller hears a busy signal.

Speakerphone Paging to an individual telephone is considered an inside call. The green LED next to an available **SA** or **ICOM** button flashes to indicate an incoming call. The person called can use the Hands Free Answer on Intercom (HFAI) feature to talk to the caller or can pick up the handset and speak to the caller.

Group Paging

Group Paging is used to direct Speakerphone Paging to a selected group of telephones, such as a department or work area, or to all telephones in the system, except QCC operator positions.

The system automatically reserves extension numbers 793-798 for the first six Speakerphone Paging Groups. Up to 10 telephones can be assigned to each speakerphone paging group. The seventh Speakerphone Paging Group is called the Page All Group and is factory-set to page all extension numbers. The system automatically reserves extension number 799 for the Page All Group. A telephone can belong to up to seven Speakerphone Paging Groups (including the Page All Group).

When the extension number for a Speakerphone Paging Group is dialed by using the **SA** or **ICOM** button, the announcement is heard over the speakerphones on all telephones assigned to the group. If the extension dialed is for the Page All Group, the announcement is heard on speakerphones throughout the system. A Speakerphone Paging Group member does not hear a group page if one of the following conditions exists:

- The paging group member is using the speakerphone.
- The paging group member is on an analog multiline telephone, and Voice Announce To Busy is not assigned to the telephone.
- The paging group member has an MLX telephone and has disabled voice-announcements.
- The paging group member has an MLX telephone and is in the programming mode (extension, centralized, or system) or the test mode.
- The paging group member has an analog multiline telephone and is in the extension programming mode. (Speakerphone pages are received on an analog multiline telephone in the test mode.)
- The paging group member is using Do Not Disturb.

When a group member does not hear the announcement for any of these reasons, the caller is not notified unless all telephones in the group cannot hear the page, in which case the caller hears the busy signal.

A call to a speakerphone paging group is not considered an inside call. The people being paged can only listen to the page over the speakerphone and cannot respond to the person making the page.

Loudspeaker Paging

Loudspeaker Paging is used when a Loudspeaker Paging system is connected to the system on a line jack programmed as a Loudspeaker Paging port. Pages over a Loudspeaker Paging system are heard everywhere in the building or just in a particular area, depending on whether or not the loudspeaker system is a multizone paging system.

Considerations and Constraints

A telephone without a speakerphone, loudspeaker, or speakerphone adjunct cannot be a member of a Speakerphone Paging Group.

When a user tries to direct an announcement to a Speakerphone Paging Group that is receiving a page, the user hears a busy signal.

When a group member does not hear the announcement, the caller is not notified unless all telephones in the group cannot hear the page, in which case the caller hears the busy signal.

If an analog multiline telephone user does not have Voice Announce to Busy and the user lifts the handset while listening to a speakerphone page, the user is disconnected from the page.

If a user on an analog multiline telephone with Voice Announce to Busy or a user on an MLX telephone lifts the handset while listening to a page, the page continues and the user can still make a call.

A maximum of three line jacks can be programmed as Loudspeaker Paging ports and used to connect a single-zone or multizone paging system. Each of these requires its own Loudspeaker Paging jack, and users cannot use more than one paging system at a time by dialing a single access code.

Using the speakerphone for Speakerphone or Loudspeaker Paging may create a feedback tone.

Loudspeaker Paging ports are LS or GS line jacks programmed as paging ports. Up to three Loudspeaker Paging ports can be programmed. A station jack cannot be programmed as a Loudspeaker Paging port.

Any loop-start or ground start/loop start line jack can be assigned as a loudspeaker paging port. A trunk jack on an 800 Direct Inward Dialing (DID), 100D, or 400EM (tie-trunk) module cannot be programmed as a Loudspeaker Paging port.

The Loudspeaker Paging port cannot be assigned to a pool that contains trunks used to make or receive outgoing calls.

When a trunk jack is assigned as a Loudspeaker Paging port, only the Loudspeaker Paging system can be connected.

If the Loudspeaker Paging system is multizone, users must dial the appropriate zone number specified by the paging system before making an announcement.

The system supports loudspeaker systems with talkback (bidirectional paging), which allows users to respond to pages.

Telephone Differences

Direct-Line Consoles

The trunk jack programmed as a Loudspeaker Paging port can be assigned to a button on an analog or digital Direct-Line Console (DLC) for one-touch access. A system operator with a digital DLC can also access a Loudspeaker Paging system by dialing the trunk number (801-880) for the trunk jack on which the Loudspeaker Paging system is connected.

Queued Call Consoles

A QCC cannot make or receive voice-announced inside calls (speakerphone calls to an individual extension). A QCC cannot be a member of a Speakerphone Paging Group and cannot receive group pages; however, it can make announcements to a paging group.

A QCC operator can use the Group Page feature by selecting a **Call** button and pressing the **DSS** (Direct Station Selector) button or dialing the extension for the group.

A QCC operator can use a loudspeaker paging system only by selecting a **Call** button, selecting `Loudspeaker Paging` from the display, and then dialing the Loudspeaker Paging port's line number (801-880).

MLC-5 Cordless Telephone

Loudspeaker pages cannot be made from an MLC-5 cordless telephone.

All Other Multiline Telephones

To receive pages, analog multiline telephones must have Voice Announce to Busy on, and MLX telephones must have Voice Announce on; these are the factory settings. For analog multiline telephones, turning on the feature also requires assigning two consecutive jacks to the telephone--one for normals calls and another for pages.

To direct Speakerphone Paging to an individual telephone, the multiline telephone user selects an **SA Voice** or **ICOM Voice** button, dials the extension number, and speaks into the handset or speakerphone. To direct Speakerphone Paging to a group of telephones or to all telephones by using Page All, the multiline telephone user selects any **SA** or **ICOM** button, presses the programmed **Group Page** button or dials the extension for the Speakerphone Paging group or Page All group, and speaks into the handset. (Using a speakerphone for a group page can cause feedback.)

A multiline telephone user can access the Loudspeaker Paging equipment and make an announcement via Loudspeaker Paging in the following ways:

- Selecting a line button programmed for the line jack on which the Loudspeaker Paging system is connected
- Selecting an **SA** button and dialing the pool dial-out code for the Loudspeaker Paging port
- Selecting an **SA** or **ICOM** button (either by pressing a **Pickup** button programmed specifically for the paging port or pressing the **Feature** button), and then dialing 9 followed by the paging port's line number (801-880)
- Selecting `Loudspeaker Page` from the display (MLX display telephones only) and dialing the line number (801-880)

Once the Loudspeaker Paging system is accessed, the user dials the assigned code number for the paging area, if required by the Loudspeaker Paging system, and speaks into the handset.

Single-Line Telephones

Single-line telephones cannot receive pages, even if they have a speakerphone. Consequently, they cannot be included as members of a Speakerphone Paging Group.

Single-line telephones cannot be used to make voice-announced inside calls (Speakerphone Paging directed to an individual telephone). To direct Speakerphone Paging to a group of telephones or to all telephones by using Page All, the single-line telephone user lifts the handset and (while listening to inside dial tone) dials the extension for the paging group or Page All group, and speaks into the handset.

To use Loudspeaker Paging, the single-line telephone user lifts the handset and (while listening to inside dial tone) dials **#9** (Pickup) and then the paging port's line number, and speaks into the handset. The paging port is normally not assigned to a single-line telephone.

Feature Interactions

| | |
|--------------------------------|--|
| Auto Dial | A Speakerphone Paging group extension number can be programmed onto an inside Auto Dial button. |
| Barge-In | Barge-In cannot be used to join Speakerphone or Loudspeaker Paging calls. |
| Callback | A Speakerphone Paging (voice-announced inside) call that is queued by using Callback automatically becomes a ringing call. Callback cannot be used for calls to a Speakerphone Paging group. Systems with loudspeaker paging can be setup to allow calls to be queued for the Loudspeaker Paging system by placing the Loudspeaker Paging port in its own pool and having users access the paging system via the pool. When the pool is busy, the call to the Loudspeaker Paging system can be queued. |
| Call Waiting | Call Waiting cannot be used for calls to busy Speakerphone Paging Groups. |
| Camp-On | Camp-On cannot be used for calls to busy Speakerphone Paging groups. |
| Conference | Group and Loudspeaker Paging calls cannot be added to a conference. |
| Direct Station Selector | A DSS button for a trunk programmed as a Loudspeaker Paging port is used only to indicate whether the paging system is in use and cannot be used to gain access to the Loudspeaker Paging system. A DSS button can be used only to dial an extension for a paging group. When a DSS button for a paging group is pressed, the transfer process is not automatically initiated. |
| Display | When users with MLX display telephones use Group Page, they see a message on the display indicating the number of the paging group. If a Loudspeaker Paging jack is not programmed, Loudspeaker Page is not shown as a feature choice on MLX display telephones. |
| Do Not Disturb | Speakerphone paging calls cannot be made to a telephone with the Do Not Disturb feature activated. |
| Forward and Follow Me | Calls cannot be forwarded to a paging group. The trunk number used to connect Loudspeaker Paging equipment cannot be used to forward calls to outside telephone numbers. |

| | |
|---|---|
| Headset Options | A user with a headset hears Group Paging over the speakerphone. |
| Hold | A Speakerphone Paging call can be put on hold by the caller. An inside voice-announced call can be put on hold by the person being called. |
| Inspect | If the user gets a voice-announced inside call or a Group Page while using the Inspect feature, the Inspect feature is canceled and the user is returned to the Home screen. |
| Microphone Disable | Calls made to Speakerphone Paging Groups can still be heard over telephones whose microphones are disabled. |
| Multi-Function Module | A Multi-Function Module (MFM) should not be a member of a Speakerphone Paging Group. |
| Personal Line | A trunk used for Loudspeaker Paging equipment cannot be assigned as a Personal Line. |
| Pickup | When the line number used for Loudspeaker Paging is not assigned to a button on a multiline telephone, a user can access the Loudspeaker Paging system with Individual Pickup by dialing the paging port's line number (801-880) or by programming a Pickup button specifically for the paging port line number. |
| Pools | In the Hybrid/PBX mode, trunk jacks used for loudspeaker paging cannot be assigned to trunk pools. |
| Remote Access | Loudspeaker Paging cannot be accessed from outside the system via either DID lines or Remote Access. |
| Station Message Detail Recording | Paging calls are not printed on the SMDR report. |
| System Access/ Intercom Buttons | Announcements using Speakerphone Paging can be made from a Shared SA button. However, users cannot join a page on a Shared SA button. |
| System Numbering | Extensions for paging groups can be renumbered. (The factory-set extensions are 793—799; Page All is 799.) |
| Transfer | Calls cannot be transferred to paging groups or to the Loudspeaker Paging extension. |
| Voice Announce to Busy | Users who program their telephones to turn Voice Announce to Busy (Voice Announce on MLX telephones) off do not receive Speakerphone Paging. |

Park

At a Glance

| | |
|---|---|
| Users Affected | Telephone users, operators |
| Reports Affected | Extension Information Operator Information System Information |
| Mode | All |
| Telephones | All |
| Programming Code | |
| Park at own extension | *86 |
| Park Zone | *22 + <i>park zone</i> (DLC operators only) |
| MLX Display Label | |
| Park at own extension | Park |
| Park Zone | Park Zone [PrkZn] |
| System Programming | Assign return interval before unanswered parked call returns: ● Options → Call ParkRtn |
| Maximums | |
| No. of Parked Calls in Park Zones | 8 (one parked call per zone) |
| Factory Settings | |
| Park Zones | 881-888 |
| Call Park Return Interval | 180 sec (range 30-300 sec, in increments of 10 sec) |
| QCC Priority Level for Returning Parked Calls | 4 (range 1-7) |

Description

Park allows a user to put a call on a special type of hold so that it can be picked up from any telephone in the system. A user can park a call and then pick it up at another telephone, or can use Paging to announce the call so that another person can pick it up. A parked call is picked up by using the Pickup feature.

Users (excluding QCC operators) can park calls at their own extensions by activating Park during the call or by pressing the **Transfer** button, dialing their own extension numbers, and pressing the **Transfer** button again to complete the transfer. At least two **SA** or **ICOM** buttons are required, and if a user (such

as a DLC system operator) must park more than one call, more **SA** or **ICOM** buttons should be assigned to the telephone.

The system also automatically reserves eight extensions (881–888) for system operator park zones. Only system operators can use these park zone extensions to park calls.

If the parked call is not picked up within the Call Park Return Interval (30-300 seconds; the factory setting is 180 seconds), the call returns to the telephone that parked the call. For QCC operators, returning parked calls can also be programmed to return to a different system operator.

Considerations and Constraints

Only system operators can use park zones to park calls.

System operators must share the eight extensions (881–888) reserved for system operator park zones.

To park a call at a park zone, the system operator with a DSS presses the **DSS** button for the park zone while the caller is on the line. If a system operator tries to park a call by pressing the **Transfer** button followed by the **DSS** button for the park zone, the call is put on hold for transfer and is not parked. This may result in transferring a call to an outside number in error.

Telephone Differences

Direct-Line Consoles

DLC operators can park calls by activating Park during the call or by pressing the **DSS** button programmed for the system operator park zone. DLC operators can also park calls at their own extensions. The eight park zone codes cannot be assigned to the **DSS** buttons on a MERLIN II System Display Console. For the park zones to be assigned to a DSS connected to a digital DLC, the extension numbers must be in the range programmed for the **Page** buttons.

Queued Call Consoles

A QCC operator must have a DSS to park a call, which is done by pressing the **DSS** button for the park zone or by pressing the **Start** button and then the **DSS** button for the operator park zone. The call is automatically parked; the system operator does not need to press the **Release** button.

QCC system operators cannot park calls on their own extensions.

For the park zones to be assigned to a DSS connected to a QCC position, the extension numbers must be in the range programmed for the **Page** buttons.

Calls parked by QCC operators can be programmed to return to the QCC queue or can be assigned to the QCC system operator who parked the calls and/or to another QCC operator. Returning parked calls are assigned a QCC priority level (the factory setting is 4) by using Returning Call Type. A QCC operator can return a parked call to the Message Center position.

To pickup a parked call, the QCC operator selects `Pickup` from the display, and dials the extension number for the telephone or park zone where the call is parked.

Other Multiline Telephones

Multiline telephone users park calls on their own extension number by pressing a programmed **Park** button. MLX display telephone users can also press the **Feature** button and select `Park` from the display.

If a user pages another person, the extension number for the telephone or park zone should be provided as part of the call announcement.

A multiline telephone user can also park calls by pressing the **Transfer** button, dialing his or her own extension number (the user hears a busy tone), and then pressing the **Transfer** button again to complete the transfer. The call is automatically parked when the transfer is completed.

To pick up a parked call, the multiline telephone user presses a programmed **Pickup** button or uses the Pickup feature by pressing the **Feature** button, dialing `9`, and then dialing the extension number for the telephone or park zone where the call is parked. MLX telephone users can also press the **Feature** button and select the feature from the display.

Single-Line Telephones

To park a call, the single-line telephone user presses and releases the Recall or **Flash** button or switchhook and dials his or her own extension. The user hears a busy tone and the call is parked.

NOTE:

If a single-line telephone with a timed disconnect is used, for example, the AT&T model 2500YMGK or 2500MMGK, pressing the switchhook disconnects the call. With this type of telephone, the **Recall** button must be used instead of the switchhook to park a call.

To pickup a parked call, the single-line user lifts the handset and (while listening to inside dial tone) dials `#9` and the extension number for the telephone or park zone where the call is parked.

Feature Interactions

| | |
|--------------------------------|---|
| Auto Dial | A system operator can program park zones on inside Auto Dial buttons. An inside Auto Dial button can also be programmed with a user's (including a system operator's) own extension number and can be used to park calls. When the system is programmed for One-Touch Hold with manual completion, the user hears a busy signal and must complete the transfer by hanging up or by pressing the Transfer button. |
| Callback | Calls waiting in a Callback queue cannot be parked. |
| Conference | Conference calls cannot be parked. If a QCC operator tries to park a conference call by pressing the Start button and then pressing the DSS button for the park zone, the park is denied and the system operator is reconnected to the conference call. |
| Coverage | A returning parked call is not eligible for Coverage. A call answered on a Primary Cover , Secondary Cover , or Group Cover button can be parked on that button. |
| Direct Station Selector | <p>Park zone codes cannot be assigned to the DSS buttons on a MERLIN II System Display Console. For the park zones to be assigned to a DSS connected to an MLX system operator console, the extension numbers must be in the range programmed for the Page buttons.</p> <p>When a system operator parks a call by using an associated DSS button and the call returns, the red LED associated with the park zone where the call was parked goes off and does not flash as it does for a transfer return.</p> <p>To park a call at a park zone, the system operator with a DSS presses the DSS button for the park zone while the caller is on the line. If a system operator tries to park a call by pressing the Transfer button followed by the DSS button for the park zone, the call is put on hold for transfer and is not parked. This may result in transferring a call to an outside number in error.</p> |
| Display | On a QCC, returning parked calls are identified by call type and the name or extension number of the system operator who parked the call. The second line of the QCC display also shows the caller information. On 2-line displays, the user must press More to see complete caller information. |

| | |
|--|--|
| Forward and Follow Me | Returning parked calls are not forwarded. |
| Group Calling | A calling group member who parks a call is considered available to receive another call. |
| Headset Options | If a call is parked, another call can be automatically answered by using Headset Auto Answer. |
| Hold | If a single-line telephone user with a call on hold hangs up, the call is disconnected. Park should be used instead of Hold. When a user or system operator parks a call received on a Personal Line button and it is picked up using the Pickup feature at another telephone and put on hold by using the Hold button, other users who share the Personal Line cannot press the line button and pick up the call. |
| Line Request | A returning parked call cancels Line Request. |
| Multi-Function Module | A Multi-Function Module (MFM) user cannot park a call but can pick up a call parked by another user. |
| Music-on-Hold | If Music-on-Hold is programmed, a parked caller hears Music-on-Hold. |
| Pickup | A parked call can be picked up by using Individual Pickup. |
| SMDR | If an incoming call is parked but not picked up by the other extension, the extension of the user who activated Park is shown in the <i>STN</i> field of the SMDR record for the call. If an incoming call is parked and picked up by the destination extension, the destination extension is shown in the <i>STN</i> field of the SMDR report. |
| System Access/ Intercom Buttons | When a user parks a call made or received on an SA button, Shared SA buttons do not ring when the parked call returns. |
| System Numbering | System operator park zones (the factory-set zones are 881-888) can be renumbered. |
| Transfer | A user can also park calls by pressing the Transfer button, dialing his or her own extension, and pressing the Transfer button again. DLC system operators can press Transfer and dial a system operator park zone. When this method is used, the transfer must be completed by pressing the Transfer button or by hanging up. This method cannot be used by QCC operators. |

Personal Lines

At a Glance

| | |
|-------------------------|--|
| Users Affected | Telephone users, operators |
| Reports Affected | Extension Information |
| Mode | All |
| Telephones | All except QCC |
| System Programming | Assign or remove Personal Lines: <ul style="list-style-type: none"> ● Extensions → LinesTrunks Assign or remove principal user of a Personal Line: <ul style="list-style-type: none"> ● Lines Trunks → More → PrncipalUsr |
| Maximums | 64 telephones per Personal Line 1 telephone as principal user 2 simultaneous users per Personal Line |
| Factory Settings | |
| Assigned Personal Lines | Analog DLC: Lines 1-32 Digital DLCs: Lines 1-18 Multiline telephones: Lines 1-8 (Key Mode) |

Description

A Personal Line, also called a *direct facility termination* (DFT) is an outside trunk assigned to a button on one or more telephones. A Personal Line can provide a user with either the shared or exclusive use of a specific trunk. In the Hybrid/PBX mode, a personal line allows users to receive outside calls without system operator involvement.

When a Personal Line is assigned to more than one telephone, a principal user of the Personal Line can be assigned via system programming. Assigning the telephone as the principal user has the following effects:

- Only the principal user can forward calls received on the Personal Line to an outside telephone number (if Remote Call Forwarding is enabled for the extension).
- Calls received on the Personal Line follow the principal user's Individual or Group Coverage patterns unless the Personal Line is set to No Ring.

A Personal Line can be selected to make or receive outside calls by pressing the associated **Personal Line** button on a multiline telephone; dial-out codes are not needed. When the line is in use, the green LED is on at all multiline telephones that share the Personal Line. Inside calls cannot be made or received on a Personal Line.

When an individual Personal Line is assigned to a line button on more than one telephone, a maximum of two users of that Personal Line can join an in-progress call (including conference calls), on which Privacy has not been activated, by selecting the **Personal Line** button with the call.

Personal Lines can be assigned via system programming to single-line telephones or any other type of tip/ring device to allow the user to receive outside calls. Normally the Ringing/Idle Line Preference for single-line telephones or other tip/ring devices is activated and Automatic Line Selection (ALS) is set to select an **SA** or **ICOM** button. With this arrangement in Key and Behind Switch modes, the single-line telephone user can select the Personal Line to make an outside call by dialing the Idle Line Access code (usually 9) while listening to inside dial tone.

In Hybrid/PBX mode, when Ringing/Idle Line Preference is deactivated or the ALS is set to select an **SA** button, the single-line user cannot select the personal line to make calls but can receive calls on the Personal Line.

For single-line telephones or other tip/ring devices in any mode of operation, the ALS can be set to select the Personal Line. However, the user cannot make inside calls or activate system features with this arrangement.

A multiline telephone user can program **Personal Line** buttons for Immediate Ring, Delay Ring, or No Ring. When a **Personal Line** button is programmed for No Ring, the user can still answer calls received on a Personal Line by pressing the **Personal Line** button with the flashing green LED. However, when a Personal Line is set to No Ring and Individual and/or Group Coverage is programmed for the user, calls received on the Personal Line are not sent to Coverage.

Considerations and Constraints

DID trunks should not be used as Personal Lines. If a DID trunk *is* assigned as a Personal Line, and a call received on the DID trunk is ringing at the station programmed to receive the calls (the routing station), the call can be answered by using the **Personal Line** button. However, this is not recommended, since the purpose of DID trunks is to route calls to specific stations without the need for Personal Line assignment or system operator assistance.

If a trunk is not assigned as a Personal Line, grouped in a pool (Hybrid/PBX only), nor assigned to ring into the Queued Call Console (QCC) queue, and a call is received on the trunk, the caller hears ringback even if that trunk does not terminate anywhere in the system.

An extension can be programmed as the principal user (owner) of a Personal Line. When this is programmed, only the principal owner can forward calls to an outside number by using Remote Call Forwarding. When the owner has Individual or Group Coverage, calls received on the Personal Line follow the owner's Coverage and not the Coverage of telephones that also share the Personal Line.

When no principal user is assigned for a Personal Line, calls received on the Personal Line cannot be forwarded to outside telephone numbers. Calls follow the individual Coverage patterns of all senders who share the line, and the Group Coverage pattern of the station with the lowest logical identification number (lowest numbered jack on the module).

Two users can join an in-progress call (including conference calls) for a maximum of three users on the same Personal Line.

Outside trunks used as Personal Lines cannot be assigned to a pool and cannot be assigned as Loudspeaker Paging, Music-on-Hold, or Maintenance Alarm ports.

Automatic Route Selection (ARS) cannot be used on Personal Lines.

In all modes, no Personal Lines are assigned to single-line telephones or tip/ring devices connected to a 012 or 008 OPT module.

Mode Differences

Hybrid/PBX Mode

When Ringing/Idle Line Preference is turned on and ALS is set to select an **SA** button, the single-line telephone user cannot select the Personal Line to make calls. However, outside calls can be received on the Personal Line.

For the Behind Switch and Hybrid/PBX modes, the factory setting assigns Personal Lines to DLC positions rather than to multiline telephones.

The factory setting for analog Direct-Line Consoles (DLCs) in all modes of operation assigns the first 1–32 lines connected to the system as Personal Lines. For digital DLCs, the factory setting assigns the first 1–18 lines connected to the system as Personal Lines.

Key and Behind Switch Modes

When Ringing/Idle Line Preference is turned on and ALS is set for an **ICOM** button, the single-line user can select the Personal Line to make an outside call by dialing the Idle Line Access code (usually 9) while listening to inside dial tone.

In the Key mode, the factory setting for Personal Lines assigns the first 1–8 lines connected to the system as Personal Lines on all multiline telephones, including Multi-Function Modules (MFMs) connected to MLX telephones.

For the Behind Switch and Hybrid/PBX modes, the factory setting assigns Personal Lines to DLC positions rather than to multiline telephones.

The factory setting for analog Direct-Line Consoles (DLCs) in all modes of operation assigns the first 1–32 lines connected to the system as Personal Lines. For digital DLCs, the factory setting assigns the first 1–18 lines connected to the system as Personal Lines.

Telephone Differences

Direct-Line Consoles

The factory setting for analog DLCs assigns the first 1–32 lines connected to the system as Personal Lines in all modes of operation. For MLX DLCs, the first 1–18 lines connected to the system are automatically assigned as Personal Lines.

Queued Call Consoles

Personal Lines cannot be assigned to a QCC or to a pool.

Other Multiline Telephones

A Personal Line is selected by pressing the associated **Personal Line** button. Dial-out codes are not required for making outside calls.

Single-Line Telephones

A single-line telephone user can receive calls on Personal Lines. To allow a single-line telephone user to select a Personal Line to make a call, Ringing/Idle Line Preference must be turned on and the ALS must be set to select an **SA** or **ICOM** button. With this arrangement, in the Key and Behind Switch modes, the single-line telephone user can select the Personal Line to make an outside call by dialing the Idle Line Access code (usually 9) while listening to inside dial tone.

Feature Interactions

| | |
|-----------------------------|---|
| Alarm | A trunk jack used for a Maintenance Alarm cannot be assigned as a Personal Line. |
| Allowed Lists | A user with an outward-restricted or toll-restricted telephone cannot dial a toll or outside number on a Personal Line button unless the number is on an Allowed List assigned to the telephone. |
| Auto Dial | An outside Auto Dial button can be used on a Personal Line. |
| Callback | The Callback feature cannot be used to request a busy Personal Line. |
| Calling Restrictions | See Allowed Lists/Disallowed Lists. |

| | |
|----------------------------------|--|
| Call Waiting | A user does not hear a Call Waiting tone for calls received on a Personal Line unless the business subscribes to the Call Waiting service from the local telephone company. |
| Coverage | <p>Assigning a sender as the principal user of a Personal Line specifies that the calls received on the Personal Line are sent to the principal user's Individual and Group receivers. A principal user with Remote Call Forwarding can forward calls received on the Personal Line to an outside number.</p> <p>Calls received on Personal Line buttons programmed for No Ring or on senders' telephones other than the principal user are not eligible for Coverage.</p> <p>If no principal user is assigned and the Personal Line is shared by other senders, calls received on the Personal Line are sent to all available Individual Coverage receivers for all senders sharing the line and to the Group Coverage receivers programmed for the sender with the lowest logical ID.</p> <p>Once a receiver answers a call received on a Personal Line on a Cover button and puts the call on hold, the sender and any other user who shares the personal line cannot pick up the call by pressing the Personal Line button. For proper handling, the receiver should transfer the call to the sender.</p> |
| Directories | A Personal Directory (MLX-20L only) or System Directory can be used to dial numbers on a Personal Line. An Extension Directory is used only for inside calls and cannot be used to dial calls on a Personal Line. |
| Disallowed Lists | A user cannot select a Personal Line and dial an outside number when the number is on a Disallowed List assigned to the telephone. |
| Forced Account Code Entry | When Forced Account Entry is assigned to a telephone and the user tries to dial an outside call on a Personal Line button without entering the account code, the call does not go through. |
| Forward and Follow Me | When an extension is programmed as the principal user of a Personal Line, calls received on the personal line are forwarded to an outside number (if the extension can use Remote Call Forward), unless the outside trunk is a loop-start trunk with an unreliable disconnect. |

| | |
|--|---|
| Group Calling | <p>To allow all Calling Group members' telephones to ring when an outside call is not answered within three rings, the trunks programmed to ring into the queue can also be assigned as Personal Lines on group member telephones and programmed for Delay Ring. This does not work for inside calls, Remote Access Calls, DID calls, or if a delay announcement device is assigned to the group.</p> <p>If a person uses a shared Personal Line button to join a call in the calling group queue, the call is removed from the queue. If a delay announcement is playing, it is disconnected from the call.</p> |
| Hold | <p>If a call is received on a Personal Line and is transferred to another user who receives the call on an SA or ICOM button and puts the call on hold, users who share the line cannot select the Personal Line button and pick up the call. If the person who received the transfer and put the call on hold cannot return to the call, another user must use the Line Pickup feature to pick up the call.</p> |
| Multi-Function Module | <p>When Personal Lines are assigned or removed from the associated MLX telephone, they should also be removed from the MFM when the device connected is used to answer calls or provide supplementary ringing. As a general rule, Personal Lines should be removed from MFMs unless the device connected (such as a fax or a single-line telephone) requires a personal line on which to make an outside call.</p> |
| Music-on-Hold | <p>A trunk used for Music-on-Hold cannot be assigned as a Personal Line.</p> |
| Paging | <p>A trunk used for Loudspeaker Paging equipment cannot be assigned as a Personal Line.</p> |
| Pools | <p>A Personal Line cannot be assigned to a pool.</p> |
| Privacy | <p>When an individual Personal Line is assigned to more than one telephone, a user with the Personal Line cannot join an in-progress call on which Privacy has been activated.</p> |
| System Access/ Intercom Buttons | <p>When a call on a Personal Line button is transferred to another user, the call rings on an SA or ICOM button. The LED next to the Personal Line flashes (fast) to indicate that the call is on hold for transfer. If the call is answered at an SA or ICOM button, the LED next to the Personal Line goes on steadily. If a user shares the Personal Line appearance and answers the call by using the Personal Line button, the call is removed from the SA or ICOM button.</p> |

Personalized Ringing

See Ringing Options.

Pickup

At a Glance

| | |
|--------------------|---|
| Users Affected | Telephone users, operators |
| Reports Affected | Extension Information Group Call Pickup |
| Mode | All |
| Telephones | All (except MLC-5 cannot be assigned to Pickup groups) |
| Programming Code | |
| Individual Pickup | *9 for general use *9 + <i>ext. no.</i> for a specific extension *9 + <i>line no.</i> for a specific line |
| Group Pickup | *88 |
| Feature Code | |
| Individual Pickup | 9 + <i>ext. no.</i> for a specific extension 9 + <i>line no.</i> for a specific line |
| Group Pickup | 88 |
| MLX Display Label | |
| Individual Pickup | |
| General use | Pickup,General [Pkup,Genrl] |
| Specific ext. | Pickup,Extension [Pkup,Ext] |
| Specific line | Pickup,Line [Pkup,Line] |
| Group Pickup | Pickup,Group [Pkup,Group] |
| System Programming | Assign or remove telephones from Pickup Groups: ● Extensions → Call PickUp |
| Maximums | 30 Pickup groups 15 members per group 1 Pickup group per phone |

Description

Pickup allows users to answer calls that are ringing, parked, or on hold anywhere in the system. There are two types of Pickup: Individual and Group. Individual Pickup can be used in three ways: Extension, Line, and General. Table 27 shows the calls that can be answered with each type of Pickup. Note that if more than one call is ringing or on hold, the first call received is the one picked up.

Table 27. Types of Call Pickup

| Individual Extension | Individual Line | Individual General | Group |
|-----------------------------|------------------------|---------------------------|-----------------|
| Inside ringing | Outside ringing | Inside ringing | Inside ringing |
| Inside held | Outside held | Inside held | Outside ringing |
| Parked | | Outside ringing | |
| Outside ringing | | Outside held | |
| Outside held | | | |

Individual Pickup

Individual Pickup can be used in the following ways:

- **Extension Pickup:** From the display, the user can select `Pickup` then dial the extension number of the call to be picked up. The user can also program an **Individual Extension Pickup** button to pick up calls on one specific extension. If that extension has more than one call, the first call sent to the extension is picked up. To pick up a call parked by the system operator, the user selects `Pickup` from the display or presses the programmed **Individual Extension Pickup** button and then dials the park zone.
- **Line Pickup:** From the display, the user can select `Pickup`, then dial the line number (801-880) to select a specific outside line from which to pick up a ringing or held call. The user can also program an **Individual Line Pickup** button to pick up calls on one specific line. Line Pickup can also be used to make announcements through the loudspeaker paging system.
- **General Pickup:** Multiline telephone users can program a general purpose **Pickup** button to pick up calls on either extensions or lines with the same button. When a **General Pickup** button is used, the user must enter the line or extension number for the call to be picked up every time the button is used.

Group Pickup

Group Pickup is used to answer a ringing call for any member of the group by dialing the Group Pickup code or pressing a programmed **Group Pickup** button. The user does not need to know the extension number or line number of the ringing call. The system automatically connects the user to an inside or outside call that is ringing at a telephone assigned to the group.

A telephone cannot be assigned to more than one Pickup group.

Considerations and Constraints

When Group Pickup is used to answer a call, the user cannot determine whose call is being answered. A user with an MLX display telephone receives call information and can determine whose call is answered only after the call is picked up.

Individual Pickup, not Group Pickup, is used to pickup calls parked in a park zone by a system operator.

Telephone Differences

Direct-Line Consoles

A Direct-Line Console (DLC) can be part of a Pickup group. This allows other group members to provide backup Coverage for the DLC. The DLC operator can use Pickup to answer calls on trunks that are not assigned to buttons on the console.

Queued Call Consoles

Individual Pickup

To pick up a call, the Queued Call Console (QCC) system operator selects the feature from the Home screen or presses the **Feature** button and selects the feature from the display. The QCC system operator then presses the **DSS** (Direct Station Selector) button or dials the extension for the telephone or park zone.

To answer calls on specific lines, the QCC operator selects the feature from the Home screen or presses the **Feature** button and selects the feature from the display, then dials the line number (801-880) with the call.

Group Pickup

To pick up a call ringing on any other group member's telephone, the QCC system operator selects `Pickup Grp` from the Home screen or presses the **Feature** button and selects the feature from the display. The system operator is connected to a call ringing at any group member's telephone.

Other Multiline Telephones

Individual Pickup

To pick up a call, all other multiline telephone users press a programmed general purpose **Pickup** button or press the **Feature** button and dial **9**. MLX telephone users can also press the **Feature** button and select the feature from the display. The user then dials the extension for the telephone or park zone.

To answer calls on specific lines, the user presses a programmed general purpose **Pickup** button or presses the **Feature** button and dials **9**, then dials the line number with the call.

If a user has a **Pickup** button programmed for a specific telephone or outside line, the user presses that **Pickup** button to pick up a call.

Group Pickup

To pick up a call ringing on any other group member's telephone, the user presses a programmed **Group Pickup** button or presses the **Feature** button and dials **88**. The user is connected to a call ringing at any group member's telephone. MLX telephone users can also press the **Feature** button and select the feature from the display.

MLC-5 cordless telephones cannot be assigned to Pickup groups.

Single-Line Telephones

Individual Pickup

To pick up a parked call, the single-line user lifts the handset and (while listening to inside dial tone) dials **#9** and the extension number for the telephone or park zone.

Group Pickup

To pick up a call ringing at any other group member's telephone, the single-line user lifts the handset and (while listening to inside dial tone) dials **#88**.

NOTE:

When the single-line telephone user is on a call and puts the call on hold to pick up another call by using Individual or Group Pickup, the user cannot put the picked-up call on hold to return to the first call. If the user presses and releases the switchhook or presses the **Recall** or **Flash** button, the picked-up call is dropped and the user is reconnected to the original held call. If the user hangs up, the picked-up call is disconnected and the first call is considered on hold for transfer and is not returned to the user until after the Transfer Return Interval.

Feature Interactions

| | |
|--------------------------------|---|
| Callback | A Callback request cannot be picked up at another telephone. |
| Call Waiting | Pickup cannot be used to answer a waiting call at another telephone. |
| Conference | A conference call cannot be picked up at another telephone. A conference originator can, however, pick up a call and add it to the conference call. |
| Coverage | An Individual or Group Coverage sender or receiver can be a member of a Pickup group. This allows Pickup to be used to answer a ringing Individual or Group Coverage call. If a sender who is a member of a Pickup group uses Coverage On/Off to prevent calls from being sent to Individual or Group Coverage receivers, his or her calls can be picked up by using Group Pickup; however, calls cannot be picked up by using Individual Pickup. When a Coverage call is answered by using Pickup, the call appearance is removed from all other telephones in the Coverage arrangement. |
| Direct Station Selector | The DSS buttons associated with a trunk number (801-880) cannot be used to answer calls on specific trunks by using Individual Pickup. These DSS buttons are used strictly to show busy or not busy status of each trunk. |
| Display | When a user with an MLX display telephone selects <code>Pickup</code> , the <code>PickupLine/Ext:</code> prompt appears on the display. (The prompt is not displayed if a button programmed for a specific line or extension is used.) After the user enters the line or extension number to pick up the call, a confirmation message is displayed—for example, <code>Pickup: Outside</code> or <code>Pickup: Joe</code> . |
| Forward and Follow Me | Pickup cannot be used to answer calls being forwarded to an outside telephone number. |
| Group Calling | A calling group member can be a member of a Pickup group. Calling group members can use Pickup to answer a call (either a calling group or individual group member extension) that is ringing at another group member's telephone. Line Pickup can be used to pick up a call that is in the calling group queue. |
| Night Service | A call ringing at a Night Service group telephone can be answered from another telephone by using Pickup. |

- Paging** When the line number used for loudspeaker paging is not assigned to a button on a multiline telephone, a user can access the loudspeaker paging system by using Individual Pickup and dialing the loudspeaker paging port line number (801-880), or by using a **Pickup** button specifically programmed for the paging port line number.
- Park** A parked call can be picked up by using Individual Pickup.
- Personal Lines** If a call received on a Personal Line is transferred to another user who receives the call on an **SA** or **ICOM** button and then puts the call on hold, another user who shares the Personal Line cannot select the shared **Personal Line** button to pick up the call. If the user who received the transfer and put the call on hold cannot return to the call, another user must use Line Pickup to pick up the call (for example, a system operator can take a message and then disconnect the caller).
- SMDR** The extension of a user who picks up a call by using Pickup is shown on the SMDR report.
- System Access/
Intercom Buttons** If Pickup is used to answer a call ringing at an **SA** or **Shared SA** button, the call is removed from the ringing telephone and moves to the **SA** or **Shared SA** button used to pick up the call. The green LED goes on next to the SA button used to answer the call and all Shared SA buttons programmed for that specific button.
- Transfer** A transferred call can be answered by using Pickup.

Pools

At a Glance

| | |
|---------------------------------|---|
| Users Affected | Telephone users, operators |
| Reports Affected | Dial Plan |
| Mode | Hybrid/PBX only |
| Telephones | All |
| System Programming | Assign individual trunks to pools: <ul style="list-style-type: none"> ● Lines Trunks → Pools Assign pool buttons to telephones: <ul style="list-style-type: none"> ● Extensions → Lines Trunks Restrict telephone from using pool dial-out code: <ul style="list-style-type: none"> ● Extensions → Dial OutCd |
| Maximums | |
| Pools per System | 11 |
| Trunks per Pool | Unlimited |
| Buttons Assigned per Pool | 64 |
| Factory Settings | |
| Main Pool | 70 |
| Dial-In Tie Trunk | 891 |
| Automatic-In Tie Trunk | 892 |
| Pool Dial-Out Code Restrictions | None |

Description

Operation in Hybrid/PBX mode allows outside trunks to be grouped together in pools. Users select trunks by using **SA** buttons instead of having a separate button for each trunk in the system. To access pools by using an **SA** button, users dial pool dial-out codes. Pools can also be assigned to buttons on one or more telephones to allow the user to select the pool without dialing the pool dial-out code or Automatic Route Selection (ARS) access code.

When the system is set up and the Hybrid/PBX mode of operation is selected, the system automatically groups trunks into the following pools:

- All loop-start (basic and special-purpose) trunks are assigned to the main pool. The factory-set extension number for the main pool is 70.

- All ground-start trunks are assigned to the pool with the factory-set extension number 890.

NOTE:

On initialization of a Release 1.0 system, all loop-start and ground-start trunk programming reverts to loop-start. The ground-start pool never has trunks assigned to it automatically, but must be programmed after the ground-start ports are designated. In Release 1.1 and 2.0 (or later) systems, ground-start trunks are assigned to the ground-start pool on initialization, except in a system strapped for Key mode operation.

- All Dial-in Tie trunks are assigned to the pool with the factory-set extension number 891.
- All Automatic-In Tie trunks are assigned to the pool with the factory-set extension number of 892.

NOTE:

The factory setting for the type of trunk connected to a 400 LS/TTR, 800 GS/LS, 408 GS/LS-ATL, or 408 GS/LS-MLX module is loop-start. The system does not automatically make pool assignments for loop-start, ground-start, or tie trunks that are emulated by using a T1 facility. Each of these types must be grouped into a pool through system programming.

The system can have a maximum of 11 pools. Each pool can be assigned to a button on a maximum of 64 telephones. The number of trunks in each pool is limited only by the number of trunks connected to the system. However, a trunk can be assigned to only one pool.

Considerations and Constraints

The maximum number of **Pool** buttons that can be assigned to multiline telephones—excluding Queued Call Consoles (QCCs)—is limited only by the maximum number of pools allowed (11) and the number of buttons on the telephone.

The number of trunks in each pool is limited only by the number of trunks connected to the system. A trunk can be assigned to only one pool.

Each pool should contain the same type of trunks (for example, basic trunks, WATS trunks, or FX trunks) because users cannot control the specific trunks selected by the system. Ground-start and loop-start trunks of the same type (for example, WATS trunks) can be mixed in the same pool. Direct Inward Dialing (DID) trunks should not be put into pools; trunks used for Music-on-Hold or maintenance alarms cannot be grouped into pools. Also, it is recommended that Dial-In Tie trunks not be assigned to a pool if the pool is assigned to a button on the telephone.

Trunks assigned to pools cannot be assigned as Personal Lines (assigned to buttons) on any telephone except a Direct-Line Console (DLC). However, calls that come in on trunks assigned to pools can be programmed to be received by one or more QCC operators.

When all trunks in the pool are in use, the green LED goes on next to the **Pool** buttons assigned to multiline telephones, and next to the **DSS** (Direct Station Selector) button associated with the pool dial-out code.

Individual telephones can be restricted to deny dial access to particular trunk pools. See Calling Restrictions in this section.

One pool can be assigned to buttons on a maximum of 64 stations.

Users with **Pool** buttons on their telephones can use the pool even if the pool dial-out restriction is assigned to the telephone.

Mode Differences

Although trunk pools are available only in the Hybrid/PBX mode of operation, users operating in the Behind Switch mode can access the trunk pools in the host switch through their Prime lines.

Telephone Differences

Direct-Line Consoles

A **Pool** button cannot be assigned to a DLC. The DLC operator accesses pools by dialing the pool dial-out code from an **SA** button or, on an MLX DLC with a DSS, by pressing the **DSS** button associated with the pool dial-out code. Trunks assigned to pools cannot be assigned as Personal Lines (assigned to line buttons) on any telephone except a DLC.

Queued Call Consoles

A **Pool Status** button is assigned as a fixed feature button on a QCC and provides the system operator with status of all the trunk pools (a maximum of 11). The system operator presses the **Inspect** button, followed by the **Pool Status** button, and busy or available status of trunk pools is shown on the display. **Pool** buttons cannot be assigned to a QCC, but a QCC system operator can use pools to make outgoing calls by selecting a **Call** button and dialing the ARS or pool dial-out code. A QCC system operator can be assigned to receive calls on trunks assigned to pools.

Feature Interactions

| | |
|-----------------------------------|---|
| Alarm | A trunk jack used for a maintenance alarm cannot be assigned to a trunk pool. |
| Auto Dial | Pool dial-out codes cannot be programmed on inside Auto Dial buttons. A pool dial-out code can be programmed on an outside Auto Dial button when a telephone number is also included. However, pause characters may be required before the telephone number, depending on the local telephone company. Pause characters are entered by pressing the Hold button. |
| Automatic Maintenance Busy | To provide optimum performance, Automatic Maintenance Busy should be enabled when a Hybrid/PBX system includes trunk pools. |
| Automatic Route Selection | ARS ensures appropriate and cost-effective use of trunk pools. |
| Callback | Callback can be used to complete calls to outside numbers in the Hybrid/PBX mode only when the call is made by using a pool in which all trunks are busy. |
| Calling Restrictions | Specific pools can be restricted from being used for outgoing calls by assigning a pool dial-out code restriction to telephones. |
| Coverage | Calls received on a sender's Pool button that is programmed for Immediate Ring or Delay Ring are eligible for Individual or Group Coverage. |
| Directory | When a pool dial-out code is included in the telephone number for a Personal or System Directory listing, pause characters may be required immediately following the pool dial-out code, depending on the local telephone company. Pause characters are entered by pressing the Hold button. |
| Display | When a display telephone user selects a Pool button and lifts the handset, the display shows the label (if programmed) for the lines in the pool that was selected. |
| Forced Account Code Entry | When Forced Account Code Entry is assigned to a telephone and the user tries to dial an outside call on a Pool button without entering the account code, the call does not go through. |
| Forward and Follow Me | A pool can be used to select the facility for forwarding calls to an outside telephone number. The user enters the pool dial-out code before the telephone number. |

| | |
|-------------------------|--|
| Group Calling | Trunks assigned to pools can be assigned to ring into a calling group. An incoming call on a trunk assigned to the pool rings on an SA button even if the calling group member has a Pool button assigned to his or her telephone. |
| Line Request | Line Request cannot be used for a Pool button. |
| Music-on-Hold | Trunk jacks used for Music-on-Hold cannot be assigned to trunk pools. |
| Paging | Trunk jacks used for Loudspeaker Paging cannot be assigned to trunk pools. |
| Speed Dial | A pool dial-out code can be included with the telephone number associated with a Personal Speed Dial or System Speed Dial code. However, pause characters may be required immediately following the pool-dial-out code, depending on the local telephone company. A pause character is entered by pressing the Hold button. |
| SMDR | When outgoing calls are made by using a pool, the trunk selected by the system is reported on the SMDR report. |
| System Numbering | Pool dial-out codes (the factory-set codes are 70 and 890–899) can be renumbered. |

Power Failure Transfer

At a Glance

| | |
|----------------|---|
| Users Affected | Telephone users, operators |
| Mode | All |
| Telephones | Single-line telephones |
| Hardware | If ground-start trunks are used in the Hybrid/PBX mode, a KS23566,L1 ground-start button is required on single-line sets used during power failure. |

Description

Power Failure Transfer (PFT) provides incoming and outgoing service through the use of power failure telephones during a commercial power failure.

A power failure telephone is a single-line telephone connected to a PFT jack on a 400, 400 LS/TTR, 800, 800 GS/LS, 408, 408 GS/LS, or 408 GS/LS-MLX module. Each module has one PFT jack for each series of four line jacks, for example, the 800 and 800 GS/LS modules each have two PFT jacks.

When a power failure occurs, all calls are dropped and the power failure telephone automatically goes on. It can be used to make and receive calls on the trunk connected to the first (lowest) trunk jack on that module.

Considerations and Constraints

The power failure telephone does not function and cannot be used to make or receive calls when the system is operating normally.

System features and restrictions are not available when PFT occurs.

Telephone Differences

Multiline Telephones

Multiline telephones cannot be used as power failure telephones.

Single-Line Telephones

Touch-tone single-line telephones must be connected to PFT line jacks for touch-tone trunks; rotary single-line telephones must be connected to PFT line jacks for rotary-dialing trunks.

Feature Interactions

| | |
|-------------|--|
| SMDR | No SMDR records are generated during a commercial power failure. |
|-------------|--|

Primary Rate Interface (PRI)

At a Glance

| | |
|-----------------------------------|---|
| Users Affected | Telephone users, operators |
| Reports Affected | DS1 Information PRI Information SMDR |
| Mode | Key, Hybrid/PBX |
| Telephones | All (display support on MLX sets only) |
| System Programming 100D Module | Specify type of facility connected to 100D module: ● LinesTrunks → LS/GS/DS1 → Type Specify framing format for 100D module: ● LinesTrunks → LS/GS/DS1 → FrameFormat Specify line coding for 100D module: ● LinesTrunks → LS/GS/DS1 → Suppression Specify signaling for 100D module: ● LinesTrunks → LS/GS/DS1 → Signaling Specify line compensation between 100D module and Channel Service Unit (CSU) or far end: ● LinesTrunks → LS/GS/DS1 → Line Comp Specify 100D modules that provide primary, secondary, and tertiary clock synchronization and source of clock synch ionization; also activate/deactivate clock: ● LinesTrunks → LS/GS/DS1 → ClockSync Specify type of CSU equipment provided by CO: ● LinesTrunks → LS/GS/DS1 → Channel Unit |
| PRI | Assign telephone number to PRI channel: ● LinesTrunks → PRI → Phone Number Assign B-channels to group: ● LinesTrunks → PRI → B-ChannlGrp → B Channels Specify type of outgoing network service for each B-channel group: ● LinesTrunks → PRI → B-ChannlGrp → NetworkServ Specify telephone number to send to network for outgoing calls (copy number received from network or use PRI channel telephone number): ● LinesTrunks → PRI → B-ChannlGrp → Copy Number |

Continued on next page

At a Glance *(continued)*

| | |
|--|--|
| System Programming | |
| PRI (continued) | |
| | Specify telephone number to send to network for outgoing calls on ISDN lines: |
| | ● <code>LinesTrunks → PRI → NumbrToSend</code> |
| | Assign test trunk telephone number for each 100D module: |
| | ● <code>LinesTrunks → PRI → Test TelNum</code> |
| | Set timer and counter thresholds for each 100D module: |
| | ● <code>LinesTrunks → PRI → Protocol → Timers</code> |
| | Assign link layer address or Terminal Equipment Identifier (TEI) of equipment connected to each D-channel: |
| | ● <code>LinesTrunks → PRI → Protocol → TEI</code> |
| Maximums | |
| PRI modules | 3 |
| B-Channels | 69 |
| Lines (total) | 72 |
| Digits per telephone number assigned to PRI channel | 12 |
| Lines per B-Channels group | 23 |
| Digits per telephone number sent to network for outgoing calls | 12 |
| Digits for test trunk telephone number | 12 |
| Dial Plan Routing Table | |
| Number of entries | 16 (0 through 15) |
| Digits per pattern | 8 |
| Digits to delete | 14 (range 0-14, 0=wildcard) |
| Digits to add | 4 |
| Network Selection Table | |
| Number of entries | 4 (0 through 3) |
| Digits per pattern | 8 (* = wildcard, at least one * required, all *s must be at end and contiguous) |
| Special Services Selection Table | |
| Number of entries | 8 (0 through 7) |
| Digits per pattern | 4 |
| Digits to delete | 4 |
| Call-by-Call Services Table | |
| Number of entries | 10 (0 through 9) |
| Number of patterns per entry | 10 |
| Number of digits per pattern | 8 |

Continued on next page

At a Glance *(continued)*

| | |
|--|--|
| Factory Settings | |
| 100D Module | |
| Type of Facility | T1 |
| Framing Format | D4 compatible |
| Line Coding | AMI-ZCS |
| Signaling | Robbed-Bit Signaling (RBS) |
| Line Compensation | 1 (range 1-5) 1 = 0.6 dB loss 2 = 1.2 dB loss 3 = 1.8 dB loss 4 = 2.4 dB loss 5 = 3 dB loss |
| Clock Synchronization Source | Loop |
| Primary Clock | First 100D module in control unit |
| Clock | Active |
| Type of CSU equipment | Foreign Exchange |
| PRI | |
| Telephone Number assigned to PRI facility | 0 digits |
| B-channels assigned to group | None |
| Type of outgoing network service per B-channel group | None |
| Copy telephone number from network use PRI number | Do Not Copy |
| Telephone number to send to network for outgoing PRI calls | 0 digits |
| Test trunk telephone number for each 100D module | None |
| Timer and counter thresholds for each 100D module | |
| T200 Timer | 1 second (range 1000—3000 ms) |
| T203 Timer | 30 seconds (range 1—60) |
| N200 Counter | 3 transmissions (range 1—5) |
| N201 Counter | 260 octets (range 16—260) |
| K Counter | 7 frames (range 1—15) |
| T303 Timer | 4 seconds (range 4—12) |
| T305 Timer | 4 seconds (range 4—30) |
| T308 Timer | 4 seconds (range 4—12) |
| T309 Timer | 90 seconds (range 30—120) |
| T310 Timer | 10 seconds (range 2—10) |
| T313 Timer | 4 seconds (range 4—12) |
| T316 Timer | 120 seconds (range 30—120) |

Continued on next page

At a Glance (*continued*)

| | |
|------------------------------------|-----------------------|
| Factory Settings (continued) | |
| Link layer address or TEI assigned | 0 (range 0-63) |
| Dial Plan Routing Table | |
| Service value | Empty |
| Digits per pattern | Blank |
| Digits in CdPN | 0 |
| Digits to add | Blank |
| Call-by-Call Services Table | |
| Patterns | Blank |
| Call type | Both (Voice and Data) |
| Service | Blank |
| Digits to delete | 0 |

Description

The Primary Rate Interface (PRI) is a standard access arrangement that can be used to connect the system to a network providing voice and digital data services. Releases 1.0 and 1.1 of the communications system enables PRI connection through a 4ESS™ Generic 16. Releases 2.0 and later enable PRI connection through a 5ESS® Generic 6 and a 5ESS serving the FTS2000 network. Releases 2.0 and later also include Call-by-Call Service Selection for outgoing PRI calls and SID-ANI as a Calling Party Number.

PRI and T1

A T1 line consists of 24 channels, sometimes referred to as DS0 channels, each with a capacity of 64 kbps. When used for PRI, a T1 channel can be designated as either a *B-channel* (bearer channel) or a *D-channel* (data channel). DS1 refers to the twenty-four 64-kbps channels plus framing and signaling bits multiplexed together to form a 1.544-Mbps signal.

A B-channel is used to carry user information, such as the voice or data content of a call, between the system and the far-end switch. Each B-channel provides access to one or more network services. Releases 1.0 and 1.1 of the system support access to only one network service per B-channel. Releases 2.0 and later support Call-by-Call Service Selection, which allows multiple network services over the same B-channels. The D-channel conveys signaling required to set up, control, and clear calls made over all of the B-channels.

The most common configuration of a T1 line for PRI consists of 23 B-channels and 1 D-channel, although other combinations are possible. Each PRI must include a D-channel, but may include fewer than 23 B-channels. The remaining channels or lines cannot be used for any other purpose.

Up to three T1 carrier trunks, and therefore three PRIs, can be connected to the system through separate 100D modules, each of which occupies a slot in the system carrier. In terms of system capacity, each T1 channel counts as a trunk endpoint, so the maximum number of B-channels supported by the system is 69. Their signaling is provided over three separate D-channels, using up 72 of the system's line capacity.

Called Party Number (CdPN)

In general, the term *Called Party Number (CdPN)* is a telephone number that was dialed to reach a destination. However, while routing the call, the network can change the CdPN to make routing easier. In either case, the network sends the CdPN to the system when a call arrives at the system.

Lines/Trunks

In this section on PRI, there is a distinction between lines and trunks. *Lines* are the representations that appear on station sets or are put into pools. They represent the type of service requested on a call. *Trunks* are the facilities that link switches. For all except DS1, lines have a one-to-one correspondence to trunks, since there are 24 transmission channels for each DS1 connection.

With PRI, lines are further removed from trunks because the type of service is not linked to the B-channel (trunk). The system has an intermediary, called a *B-channel group (BCG)*. Lines are used to place and receive calls, and a BCG links B-channels to lines.

Each line has a separate dial plan number, and each DS1 module is given 24 lines, regardless of whether or not it is used for emulation of trunks or for PRI.

DS1 Facilities

A digital signal 1 (DS1) facility is a transmission system that transports digital signals in the DS1 format. The interface that allows the connection of DS1 facilities to the system is the 100D module. Through this module, voice and data calls can be made or received using a DS1 facility.

Twenty-four digital signal 0 (DS0) channels, each operating at 64 kbps, plus framing bits, are multiplexed, forming a DS1 signal of 1.544 Mbps. Each DS0 channel within the DS1 signal corresponds to a logical endpoint. Even though there is only one physical jack, the 100D module supports up to 24 logical endpoints or ports (one for each channel).

In DS1 format, calls to other digital PBXs or telephone company foreign exchanges (FXs) remain digital, and signals do not need to be converted to analog for acceptance by the connecting trunk. In addition, the 100D module can be configured to work with T1 or PRI service.

To connect the 100D module to an outside DS1 facility, a Channel Service Unit (CSU) is used. The CSU regulates the transmission into and out of the 100D module so that the module matches the transmission of the outside facility.

Both ends of the DS1 facility must be able to communicate. To ensure this, the following options are set during system programming to match the transmission of the outside DS1 facility:

- Type of service (T1 or PRI)
- Framing format
- Line coding
- Type of equipment (CSU)
- Line compensation
- Clock synchronization
- Signaling mode (for T1 service only)

The appropriate setting for each option is determined by the transmission facility to which the module is connected.

Type of Service

The system supports two types of service for DS1 facilities: T1 and PRI. The 100D module can be programmed to operate in either type of service. T1 service transmits and receives voice and analog data; PRI transmits and receives voice, analog, and digital data. Any combination of the following AT&T Switched Network (ASN) Services can be provided through a T1 or a PRI line/trunk:

- MEGACOM® WATS service for domestic outgoing long-distance voice calls
- MEGACOM 800 service for domestic toll-free incoming voice calls
- Software Defined Network (SDN) for voice and circuit-switched data calls
- MultiQuest® for 900 service numbers

PRI interacts with the ACCUNET® Switched Digital Service for 56-kbps, 64-kbps restricted, and 64-kbps clear circuit-switched data calls.

PRI supports Shared Access for Switched Services (SASS), which allows both MEGACOM and MEGACOM 800 services to be offered over the same line. This eliminates the need to have separate incoming and outgoing trunks.

T1 is the factory setting and, when selected for the DS1 facility, allows each of the 24 channels to be programmed to emulate tie, loop-start, or ground-start lines in any combination. Therefore, a single 100D module can take the place of 24 regular outside lines.

If common-channel signaling (CCS) is selected, 23 channels are available for emulation, and the 24th channel carries formatting signals. (See Signaling Mode later in this section.)

Framing Format

To identify the DS0 channels, the DS1 signal is segmented into blocks of 193 bits called *frames*. A frame consists of 24 eight-bit words (one for each channel) plus a framing bit at the beginning of each frame (24 words x 8 bits = 192 bits). Thus, a framing bit appears in every 193rd bit position of the 1544-Mbps DS1 signal.

Frames repeat at a rate of 8000 per second, with each frame repeating DS0 channels 1 through 24 sequentially.

The following two methods of framing can be used by a 100D module, but the framing method chosen must match the framing at the far end:

- **D4 Framing Format:** The system is factory-set for the most common framing format, D4 framing. A D4 frame consists of 24 eight-bit time slots and one framing bit. To perform synchronization, the receiving equipment uses the framing information to identify the start of each frame and to identify which frames contain signaling information. The framing information repeats once every 12 frames; these 12 frames form the D4 superframe. This framing format is used by most DS1 equipment.
- **ESF Framing Format:** The extended superframe (ESF) format extends the 12-frame D4 superframe to a 24-frame superframe. The 24 framing bits include a cyclic redundancy check (CRC) for the entire ESF and a facility data link for maintenance. The ESF can detect more errors than D4 framing can; however, ESF is not used universally by DS1 equipment.

Line Coding

The DS1 signal consists of a continuous stream of ones and zeros, encoded into bipolar pulses for transmission. Only the ones create a pulse; the zeros represent the absence of a pulse. The pulses of the 1s alternate between positive and negative. This type of line coding is called *bipolar* or *alternate mark inversion* (AMI). The line-coding formats guarantee that the *ones-density* requirement is met to achieve clock recovery.

To meet the ones-density requirement, either zero code suppression (ZCS) or bipolar 8 zero substitution (B8ZS) line coding can be chosen, but the line coding chosen must match the line coding at the far end.

ZCS line coding monitors each DS0 channel and prevents strings of eight or more zeros. Upon detecting eight consecutive zeros in a channel octet, ZCS line coding forcibly changes the seventh zero (the second least significant bit) to a one. The factory-set line coding is ZCS.

B8ZS line coding encodes an all-zero channel octet into a unique binary sequence with a *bipolar violation* in bit positions 4 and 7. Normally for bipolar transmission, ones are encoded alternately as a positive then negative, or negative then positive, pulse. If two positive or two negative pulses are received in succession, a bipolar violation occurs.

Ordinarily, bipolar violations are caused by noise hits to the signal. However, B8ZS line coding allows the 8-bit strings to be detected at the receiving end and converted back into the original sequence.

B8ZS line coding is preferred over ZCS because it does not cause errors in data transmission.

B8ZS violations are passed by the ESF T1 Channel Service Unit (CSU), but not by other CSUs. The CSU is a hardware component needed when two endpoints are located in different buildings or when the distance between the two endpoints makes office or line repeaters necessary. The CSU is located on the customer's premises and is used to connect the system to DS1 network facilities. The CSU has the following functions:

- It terminates an outside DS1 facility on the 100D module.
- It ensures that the signals entering the public network comply with the requirements of the DS1 facility as specified by the FCC.
- It includes maintenance, diagnostic, and testing capabilities.

Type of Equipment (CSU)

The CSU is the interface between the 100D module and the DS1 facility provided by the telephone company. This facility contains 24 channels on one 4-pair wire that connects to the back of the CSU. The CSU then connects to the modular jack on the 100D module.

There are two CSUs—an ESF T1 CSU (extended superframe) and a 551 T1 L1 CSU. The ESF T1 CSU is recommended for this system because it allows the unit to be maintained without interrupting service and provides diagnostic and testing capabilities, and it is the only CSU that provides B8ZS line coding. The lower cost 551 T1 L1 CSU performs most of the functions of the ESF T1 CSU but does not provide the B8ZS line coding required for 64-kbps data and for maintenance features. The 551 T1 L1 CSU also does not provide diagnostic and testing capabilities.

Line Compensation

Line compensation adjusts for the amount of cable loss in decibels (dBs), based on the length of cable between the 100D module and the CSU or other far-end connection point. The factory setting is a value of 1, which allows a maximum loss of 0.6 dB. The possible settings are shown in Table 28.

Table 28. Line Compensation Settings

| Setting | dB Loss | Cable Length (22-Gauge Wire) |
|---------|---------|---------------------------------|
| 1 | 0.6 | 0—133 feet (0—40.5 meters) |
| 2 | 1.2 | 133—266 feet (40.5—81 meters) |
| 3 | 1.8 | 266—399 feet (80—121.5 meters) |
| 4 | 2.4 | 399—533 feet (121.5—162 meters) |
| 5 | 3.0 | 533—655 feet (162—199.5 meters) |

Clock Synchronization

Clock synchronization is an arrangement in which digital facilities operate from a common clock. Whenever digital signals are transmitted over a communications link, the receiving end must be synchronized with the transmitting end to receive the digital signals without errors.

The system synchronizes itself by extracting the timing signal from the incoming digital stream. If the system has more than one 100D module, the module that provides the primary synchronization for the other 100D modules and for the time-division multiplexing (TDM) bus must be identified during system programming. The factory setting is the first 100D module in the carrier. This can be changed to the second or third module.

In the event of a maintenance failure, backup synchronization can be provided by programming in the second and third installed modules as secondary and tertiary synchronization.

In addition, the source of synchronization can be factory set to “loop clock reference source” (the clock is synchronized to the external endpoint—the factory setting) or to “local clock reference source” (the clock is free-running). This setting must be made for the primary, secondary, and tertiary synchronization modules.

Signaling Mode

Signaling is the process of communicating channel-state information, such as dialing, from endpoint to endpoint. Two types of signaling can be used in T1 transmission: robbed-bit signaling (RBS) and common-channel signaling (CCS). Choosing a signaling mode pertains only to T1 service; PRI always uses CCS (23 B-channels and 1 D-channel). The signaling types areas follows:

■ Robbed-Bit Signaling

RBS replaces the least significant bit of every sixth frame of each DS0 channel with signaling information. RBS is also called *in-band signaling*, since signaling information is embedded in the least significant bit of every sixth 8-bit word.

RBS is appropriate for voice and voice-grade data (up to 1200 bps), but facilities using RBS cannot accurately transmit digital data because digital data uses high-speed data rates, such as 64 kbps. Therefore, the channel is limited to voice and analog voiceband data applications.

■ **Common-Channel Signaling**

CCS is an out-of-band signaling format that places the signaling bits for channels 1 through 23 into the 8-bit word of the 24th channel. This restricts DS1 from using the 24th channel for voice or data transmissions.

D4 framing does not preclude the use of CCS, but CCS is not compatible with D4 channel banks because the D4 channel banks only recognize RBS. Coupled with B8ZS coding, CCS can support digital data up to 64 kbps per channel.

ESF framing should be used to take advantage of its improved maintenance, diagnostic, and testing capabilities (the ESF T1 CSU is required to interface with the network). If the transmission between two systems is voice-only, RBS should be used for all 24 communication paths. For voice transmission, both ZCS and B8ZS line coding can be used to satisfy the ones-density requirement: the preferred line-coding format is B8ZS, which is needed for 64-kbps digital data.

The framing and signaling formats depend on the network and interconnection devices (CSUs) used. For example, many CSUs only support ZCS line coding.

NOTE:

Digital data up to 64 kbps is possible only in PRI mode. Also, ESF framing mode, CCS signaling, and B8ZS line coding are required. An ESF-T1 CSU must be used for interbuilding DS1 connections.

PRI Programming Options

The following options should be programmed for PRI facilities connected to a 100D (DS1) module.

PRI Telephone Number

The PRI telephone number is a string of up to 12 digits (any combination of digits 0 through 9) assigned to each PRI channel. This string matches the number sent by the network that indicates the number dialed by the outside caller. The communications system uses the number to route the call to the correct destination.

Network Services Supported

This option specifies the type of outgoing network service provided by each B-channel group. The choices are as follows:

- MEGACOM WATS
- MEGACOM 800
- MultiQuest Service
- ACCUNET Switched Digital Service (SDS)
- Software Defined Network (SDN)

Copy Telephone Number to Send

This option specifies whether or not the telephone number to send to the network for outgoing calls made on PRI lines assigned to a B-channel group is copied from the telephone number assigned to the channel. Select the `COPY Phone Number to Send` option when the telephone number sent to the network should match the number received from the network indicating the number dialed by the outside caller. Select the “Do not Copy Phone Number” option when a telephone number to send is assigned to each channel in the B-channel group or when no telephone number is to be sent to the network.

Telephone Number to Send

This option assigns the telephone number to send to the network when outgoing calls are made on PRI lines. If the person being called subscribes to the AT&T INFO2 automatic number identification (ANI) service, the number indicates who is calling.

Test Telephone Number

This option assigns a test line/trunk telephone number for each 100D (DS1) module installed in the control unit.

Timers and Counters

This option sets the timer and counter thresholds. The factory settings for thresholds are standard and rarely need to be changed. (See *At a Glance* in this section for factory settings and valid ranges.) When no response is received from the network before the programmed setting, the communications system takes the appropriate corrective action. The timers and counters are as follows:

- **T200 Timer** — times the delay in link layer acknowledgment of a message sent from the communications system to the network over a D-channel
- **T203 Timer** — times the period of time between each exchange of messages between the communications system and the network on the D-channel

- **N200 Counter** — counts the number of times the communications system has transmitted a message on a D-channel because no link layer acknowledgment is received from the network
- **N201 Counter** — counts the maximum number of layer 3 octets the system can send or receive in a single D-channel message
- **K Counter** — counts the number of layer 3 unacknowledged messages sent from the communications system to the network on a D-channel
- **T303 Timer** — times the delay in network response when the communications system sends a setup message to initiate an outgoing call
- **T305 Timer** — times the delay in network response when the communications system sends a disconnect message to clear a call
- **T308 Timer** — times the delay in network response when the communications system sends a release message to clear a call
- **T309 Timer** — times the duration of a D-channel data link failure (a loss of signaling for the entire PRI connection)
- **T310 Timer** — times the network delay following the receipt of a call proceeding message on an outgoing call
- **T313 Timer** — times the delay in network response when the communications system sends a connect message that indicates the completion of an incoming call
- **T316 Timer** — times the delay in network response when the communications system sends a restart message to clear a B-channel

Terminal Equipment Identifier (TEI)

This option assigns the link layer address of a piece of equipment connected to each D-channel. Normally, only one is connected, and the network assumes that its TEI is 0.

Call Processing

Figure 28 shows the order of call processing for both incoming and outgoing calls; the section of the figure within the box applies specifically to call processing on a system with PRI. Descriptions of incoming and outgoing call processing follow the figure.

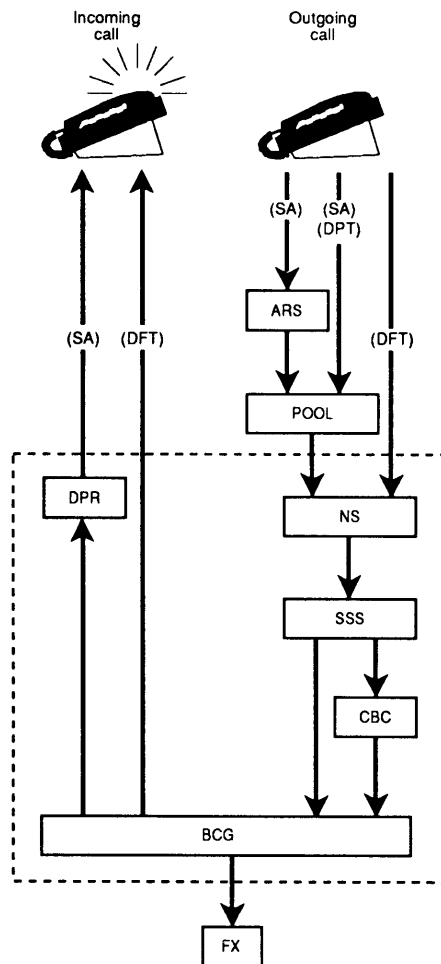


Figure 28. PRI Call Processing

ARS=Automatic Route Selection DPR=Dial Plan Routing Table NS=Network Selection Table
 BCG=B-Channel Group DPT=Direct Pool Termination SA=System Access
 CBC=Call-by-Call Services Table FX=Foreign Exchange SSS=Special Services Selection Table
 DFT=Direct Facility Termination

Incoming Calls

In Releases 1.0 and 1.1, incoming calls are routed by line appearance. Beginning with Release 2.0, incoming calls apply Routing by Dial Plan, a routing system for incoming calls administered by the Dial Plan Routing Table (see Table 29).

The Dialed Number Identification System (DNIS) is a service attribute of the MEGACOM 800 service that routes incoming 800 or 900 calls according to customer-selected parameters, such as area code, state, or time of call. In Releases 1.0 and 1.1, DNIS has the restriction of one active call per extension

number per B-channel group. The line phone number, which is matched against the CdPN, is used for routing a call to a specific line that normally terminates on a Direct Facility Termination (DFT) button.

Routing by Dial Plan is similar in concept to DID. It provides the ability to direct a call automatically to the proper endpoint for improved call distribution and call handling. Unlike a DID line, a PRI line programmed for Routing by Dial Plan can accommodate outgoing calls as well as incoming calls. As with DID operation, this feature is available only in Hybrid/PBX mode.

Routing by Dial Plan also allows multiple calls to a directory number. This feature routes concurrent incoming calls to the same telephone number to any lines in the B-channel group.

For each B-channel group the system can be programmed for either routing by line appearance or Routing by Dial Plan. With Routing by Dial Plan, the Dial Plan Routing Table must be programmed to contain a series of patterns, the number of digits in the CdPN, services on which to match, and a number of digits to add or delete for each match, in order to route the call to the proper internal dial plan endpoint.

If a B-channel group is programmed for Routing by Dial Plan, all calls into that B-channel group are routed in a DID-like manner and will terminate on an **SA** button, a single-line telephone, into a calling group queue, or at a Queued Call Console (QCC). If the digit analysis results in a number for which there is no match in the Dial Plan Routing Table, the call is routed to the programmed backup position for unassigned DID calls (normally the primary system operator or a fast busy tone). Any call into a B-channel group programmed for Routing by Dial Plan will have its CdPN manipulated according to the Dial Plan Routing Table before matching it against the internal Dial Plan (to identify an endpoint to which the call will be delivered). The call must match an entry on the Dial Plan Routing Table, or it will be refused. If the manipulated CdPN does not match an internal endpoint, it will receive unassigned DID call treatment. This unassigned endpoint can be a calling group, a QCC, a telephone, or fast busy tone.

If a fast busy tone is programmed as the routing endpoint for unassigned DID calls, the call is rejected. This typically causes the network to return intercept tone rather than fast busy. If the number matches an endpoint that DID calls are not permitted to reach, for example, pool access codes, group page codes, line access codes, or the ARS access code, the call is routed to the programmed endpoint for unassigned DID calls (unless the backup is fast busy tone).

Routing by Dial Plan

Table 29 is a sample Dial Plan Routing Table. Note that in the sample table all incoming calls via the MEGACOM 800 service will be delivered to an endpoint whose Dial Plan number is 1234. Entry 15 would be skipped because “No Service” is specified.

Table 29. Sample Dial Plan Routing Table

| Entry # | 0 | 1 | 2 | 3 | ... | 15 |
|---------------------|--------|--------|--------|---|-----|-----------------|
| Service | SDN | SDN | MEG800 | | | No Service |
| # of digits in CdPN | 7 | 10 | 10 | | | [not specified] |
| Pattern | 555 | [none] | [none] | | | [none] |
| Digit deletion | 3 | 6 | 10 | | | 14 |
| Digit addition | [none] | [none] | 1234 | | | 0 |

When an incoming call is given Routing by Dial Plan treatment, if the programmed service, number of digits in the CdPN, and patterns match those associated with the incoming call, the appropriate digit deletion and addition are performed. The process is as follows:

1. The programmed service is compared with the B-channel service, if supplied. A match is found if the two services are equivalent or if the programmed service in the Dial Plan Routing Table is "All Services." If a match is found, the system continues to search the entry. If no match is found or if "No Service" is specified, the system skips the entry and proceeds to the next one. If no service is supplied, the call is matched to "No Service" table entries.
2. The programmed number of digits is compared with the number of digits in the actual CdPN. A match is found if the two numbers are equivalent or if the programmed number of digits is 0. If a match is found, the system continues to search the entry. If no match is found, the system skips the entry and proceeds to the next one. If the programmed number of digits is 0, any number of digits in the CdPN is acceptable.
3. The programmed pattern is compared with the digits associated with the incoming call. If the pattern matches, the entry is tagged as a possible best match for the incoming call; it is possible that more than one entry can match the incoming call. The entry chosen is the one that matches on the greatest number of digits in the pattern. For example, if 555-2000 is the CdPN and the two patterns that match are 555 and 5552, the entry associated with 5552 is chosen as the best match. If the pattern is not programmed, it is considered a match with the number of digits in the pattern equal to 0.
4. After the table is scanned and the best match is found, the programmed digit analysis (addition and/or deletion) associated with the entry is performed. If the digit analysis results in an invalid Dial Plan endpoint, the call is routed to the endpoint for unassigned DID calls.

Characteristics and valid entries for the Dial Plan Routing Table are as follows:

- By default, the table value for Service is empty.
- There can be up to 16 entries (0 through 15).
- The service can be any one of the supported services, Other, “No Service,” or “All Services.” If the service is not specified, the entire entry is skipped when the system searches for a match. If the service is programmed as “All Services,” it will match any input and thus act as a wildcard. If the B-channel receiving the incoming call is also programmed for Call-by-Call Service Selection, the system retrieves the service type as supplied by the FX, since an incoming call could be arriving on any of the services.
- Each pattern can have 0 through 8 digits. The default is blank.
- The number of digits in the CdPN can be 0 through 14. A value of 0 in the table represents “any number” and thus acts as a wildcard. The default number of digits is 0.
- The maximum number of digits to delete is 14.
- The digits to add include the digits 0 through 9. The length of this item is 0 through 4 digits. The default is blank.
- The digit count and pattern are optional. When not programmed, they are considered wildcards that match any input.

Display Operation

The PRI display provides call-related information about incoming PRI calls delivered over the B-channel, if available. Otherwise, it displays the line label and the digits dialed.

A brief description of the display support provided in Release 2.0 and later follows. Refer to the Display feature in this book for additional details.

NOTE:

PRI display support for Release 2.0 and later applies to MLX display sets only. There is no PRI display support for analog multiline sets.

- **All Incoming PRI Calls:** When the calling party information is available from the network, the CPN appears on the user’s display; if the user presses the **More** button, the CdPN appears on the second screen of the display. If the CPN is more than 15 characters in length, the digits at the end are dropped.
- **Group Calling:** The MLX display of a calling group member shows the original CPN (before digit analysis). The same display applies to PRI calls routed by dial plan to a group calling member station. If the user presses the **More** button, the second screen of the display still shows the CdPN.

- **Transfer without Consultation:** In Release 2.0 and later, pressing the **More** button on an MLX display telephone that is a transfer destination shows the original CdPN (before digit analysis). The same display applies to transferred PRI calls routed by dial plan.

Outgoing Calls

Call-by-Call Service Selection is a Release 2.0 and later feature for outgoing calls that allows a group of B-channels to carry a variety of supported PRI services programmed in the Call-by-Call Services Table (see Table 32). The assignment criteria are based on the outgoing routing digits and the bearer capability (voice, data, or both) of the originating endpoint. In Releases 1.0 and 1.1, an outgoing call is carried on a static B-channel, that is, a B-channel dedicated to one specific service.

Outgoing calls using Call-by-Call Service Selection can be made by accessing a DFT, a Pool, or Automatic Route Selection (ARS). When a call is placed, the system determines if the line accessed is a PRI facility. If so, the system performs digit analysis with the entries in the Network Selection Table (see Table 30), which lists the prefixes for dial access to alternate long distance carriers (for example, 10xxx), and the Special Services Selection Table (see Table 31), which allows the user to specify prefixes that represent special services, such as operator service or international dialing (0 or 00).

In addition, if the B-channel group for an outgoing call is programmed for Call-by-Call Service Selection, the system performs digit analysis with the entries in the Call-by-Call Services Table (see Table 32). The entries in this table indicate the service and the required digit deletion information to successfully route an outgoing call.

A sample of each of these tables follows. Refer to *System Programming* for information about programming these tables.

Network Selection Table

Table 30. Sample Network Selection Table

| Entry Number | 0 | 1 | 2 | 3 |
|--------------|---------|--------|---|---|
| Pattern | 101**** | 10**** | | |

* is a wild card, representing the chosen network.

If multiple entries in the Network Selection Table match the dialed number, the one with the most non-wild-card digits prevails. If the first digits of a dialed number (on PRI) match any entry in this table, the entry pattern is deleted from the dialed number, and the number represented by the asterisks is used as the network selected. Characteristics and valid entries for the Network Selection table are as follows:

- There can be up to four entries (0 through 3).
- The pattern can be up to eight digits.
- An asterisk (*) is a wild card.
- The pattern cannot begin with an asterisk, but must contain at least one.
- All asterisks must be at the end of the pattern and contiguous.

Special Services Selection Table

Table 31. Sample Special Services Selection Table

| Entry Number | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----------------|------|-----|----|------|----|------|------|------|
| Pattern | 011 | 010 | 01 | 00 | 0 | 1 | | |
| Operator | None | OP | OP | OP/P | OP | None | None | None |
| Type of Number | I | I | I | N | N | N | N | N |
| Digit Deletion | 3 | 3 | 2 | 2 | 1 | 1 | 0 | 0 |

OP = Operator
 OP/P = Presubscribed Common Carrier Operator

If multiple entries in the Special Services Selection Table match the dialed number, the one with the most digits prevails. Characteristics and valid entries are as follows:

- There can be up to eight entries (0 through 7).
- The pattern can be up to four digits (no wild cards).
- The choices for Operator are Operator (OP), Presubscribed Common Carrier Operator (OP/P), and None.
- The choices for Type of Number are National (N) and International (I).
- The number of digits to delete can be from zero to four.

Call-by-Call Services Table

Table 32. Sample Call-by-Call Services Table

| Entry Number | 0 | 1 | 2 | 3 | 4 | ... | 9 |
|---------------|---------|--------------------------------------|----------|----------|------|------|------|
| Patterns | 700 | 908957 908949 908615 303843 | 908 | | | | |
| Call Type | DATA | BOTH | VOICE | VOICE | DATA | BOTH | BOTH |
| Service | ACCUNET | SDN | MEG WATS | MEG WATS | SDN | | |
| Delete Digits | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

When a call is placed on a Call-by-Call B-channel group, the dialed number and type of call must match one of the entries, the specified number of digits is deleted, and the specified service is selected. Similar patterns for the same type of call are permissible in this table; in such a situation, the feature will select the entry with the longest matching pattern. For example, based on the entries in Table 32 and a voice call with a CdPN of 908957, entry 2 will be selected, not entry 3. The last entry will be used if the patterns are of equal matching digits.

For each entry, the following can be specified: a set of patterns, the type of call, the service to use, and the number of digits to delete.

Characteristics and valid entries for the Call-by-Call Services Table are as follows:

- By default, the patterns are blank; Call Type is Both, Service is blank, and Delete Digits is 0.
- There can be up to 10 entries (0 through 9).
- Each entry can contain up to 10 patterns of up to 8 digits each.
- The number of digits to delete can be from 0 through 8 (default is 0).
- The user can use an entry as a default by selecting a Call Type and Service and not specifying any patterns.
- If Service is null (not selected), the entry is ignored. Null and “No Service” are *not* equivalent.

Call-by-Call Service Selection closely resembles ARS in reducing costs and maximizing the benefits derived from limited resources. While ARS selects the most cost-effective route, Call-by-Call Service Selection selects the optimal service for that particular call. Call-by-Call Service Selection is integrated with ARS by including the bearer capability of the calling party in its routing decisions. As such, ARS is the main gateway for accessing the Call-by-Call B-channel group. The basic call origination process for Call-by-Call Service Selection with ARS is as follows:

1. A user dials ARS.
2. ARS selects the route and, in this case, the route points to a Call-by-Call B-channel group.
3. ARS performs digit deletion/addition operations for the route that may indirectly specify the best service for the call.
4. With these ARS outgoing digits, the Call-by-Call B-channel group selects the service, possibly based on digits added by ARS, and performs digit deletion as required.
5. A call Setup message is sent to the network/central-office switch.

PRI Benefits

The following benefits are provided by PRI service:

- **Speed:** Data calls to outside destinations can be established on the same B-channels used for voice calls if the service allows. Modems and dedicated, conditioned lines/trunks are not needed.
- **AT&T's INFO2 station identification/automatic number identification (SID/ANI) service:** number identification service Customers who subscribe to this service can identify the caller on an incoming call on a PRI line/trunk by either telephone number or billing number.

NOTE:

The availability of the caller identification information may be limited by local-serving (caller's) jurisdiction, availability, or telephone company.

- **Dynamic B-channel assignment:** An individual B-channel can be removed from service without blocking calls to or from any other B-channels.
- **Improved toll restriction:** The ways that toll restriction can be bypassed are limited on PRI lines/trunks.

Specifically, three types of toll abuse are eliminated with PRI service:

- Since dialing is in the form of out-of-band messages that must be generated by the system, a user cannot use a touch-tone generating device, such as a pocket dialer, to bypass a loop-start or ground-start trunk and send dialed digits in-band directly through the system to the trunk.
 - Without PRI service, toll restriction can be deceived by dialing digits on a loop-start trunk before the far-end switch applies dial tone. These initial digits may indicate a local call to the system's toll restriction checking while the subsequent digits, those actually recognized by the far-end switch, may produce a toll call. This is not possible with PRI service because every digit screened and passed on by the system's toll restriction is guaranteed to be received by the far-end switch.
 - A PRI line's far-end disconnect signal provides a reliable indication when a call ends, and a new call cannot be initiated until the line has been released from the prior call on both ends. This prevents a user on a loop-start trunk, waiting off-hook for the restoration of dial tone after a previous call, from placing a second call before toll restriction is reapplied.
- **Reliable indication of far-end disconnect:** This prevents an incoming call from being blocked because a trunk has not been released when a call is over due to a falsely reported far-end disconnect signal or an electronic disturbance that simulates the signal.

Additionally, by supporting high-speed digital data transmission, PRI provides the capability for video conferencing and Group IV (G4) Fax.

PRI Features

Features offered by PRI are as follows:

- Connectivity to 5ESS Generic 6 (Release 2.0 and later)

The benefits of 5ESS connectivity include making local calls, operator access (local, common carrier, and operator-assisted calls), common carrier selection, and 5ESS PRI services.

A user-dialed (outgoing) number undergoes a parsing process, which is also called *digit analysis*, which enables the system to do the following:

- Route outgoing calls over the appropriate B-channel by matching entries in the Network Selection Table and the Special Services Selection Table (and, if applicable, the Call-by-Call Services Table)
- Route incoming calls to the proper endpoint by matching entries in the Dial Plan Routing Table

- Routing by Dial Plan (Release 2.0 and later)

Routing by Dial Plan supports call handling similar to Direct Inward Dialing (DID). It is especially suitable to supporting the Dialed Number Identification System (DNIS), a service attribute of the MEGACOM 800 service that routes incoming 800 or 900 calls according to customer-selected parameters, such as area code, state, or time of call. For example, a customer can specify that calls received from a particular area code should be routed to a specific individual or group responsible for accounts in the area.

Routing by Dial Plan performs digit analysis on incoming calls, matches to CdPNs, and delivers the calls to the destination endpoints based on the respective CdPNs. It also allows multiple calls to the same directory number, that is, multiple concurrent incoming calls with the same CdPNs are routed to any available line in the same B-channel group.

- Call-by-Call Service Selection (Release 2.0 and later)

This feature allows maximum utilization of communications lines, providing more services with fewer lines. Call-by-Call Service Selection provides more than one PRI service (such as MEGACOM WATS, ACCUNET Switched Digital 56/64, SDN, OUT WATS, and Virtual Private Network Access) per B-channel. Based on the number dialed and the bearer capability (voice, data, or both), the system chooses what service will be used. If a caller requests operator service, the system bypasses Call-by-Call Service Selection.

- Authorization code handling for FTS2000 network (Release 2.0 and later)

FTS2000 network users can have restriction codes applied to their telephones. A user who attempts to place a call that exceeds the set restriction level must first enter an authorization code. If no code is entered, the FTS2000 network prompts the user to enter the code from the telephone dial pad.

The system allows an authorization code to be entered with the Account Code Entry feature. This is especially useful for data calls.

- **SID-ANI as Calling Party Number (CPN) (Release 2.0 and later)**

The CPN in Release 1.0 is facility-based, whereas it can be station-based in Release 2.0 if system programmed. Station-based CPN is called SID-ANI and results in a more PBX-like performance from the system.

Considerations and Constraints

General

If a B-channel is not available when a call is placed, a fast busy tone is returned. While the tone is in progress, the line on which the call was placed is considered busy. If the originator goes on-hook while the tone is in progress, the call is ended and the line is idled. Otherwise, the call appearance is removed and the line is idled 15 seconds after the tone is applied.

A telephone is considered busy if no **SA** button (non-originate only) is available, Do Not Disturb is activated, or the telephone is in program, forced idle, or alarm clock mode. The caller hears a busy tone. The call will receive Coverage, if specified.

A PRI line can be in only one B-channel group.

If the internal Dial Plan uses extension numbers with different numbers of digits, for example, both 3-digit extension numbers and 4-digit extension numbers, SID-ANI might not work properly.

The PRI telephone number assigned to each channel must be different from the numbers assigned to other channels assigned to the same B-channel group and from that of the associated test number. Also, the number each channel must be the same number as that provided by the PRI service provider.

The Test Telephone Number assigned for each 100D (DS1) module in the control unit must be different from the numbers assigned to other channels in the same B-channel group and must be the same number as that provided by the PRI service provider.

An invalid timer value entered in system programming results in that number being truncated to the closest valid value. If, for example, 45 is entered for a counter that ranges from 0 to 30 seconds, 4 is recorded.

Incoming Calls

When an incoming call is given Routing by Dial Plan treatment, the green LED associated with appearances of the line lights steady; the LED does not flash to indicate that the trunk is ringing. The green LED associated with the Personal Line lights steadily, and ringing on an **SA** button occurs; the LED does not flash to indicate that the trunk is ringing.

Routing by Dial Plan requires programming of the Dial Plan Routing Table and the B-channel group to be routed by dial plan.

The Call Management System (CMS) does not support Routing by Dial Plan.

Display support for Routing by Dial Plan is on MLX telephones only.

If the end point number for an incoming call given Routing by Dial Plan treatment is not found, the call is sent to the invalid destination number for DID calls. This number can be a Dial Plan extension number or fast busy tone. However, if it is fast busy tone, the call is rejected and the network applies intercept tone.

A PRI line that has been programmed for Routing by Dial Plan should not be programmed for Remote Access or Shared System Access.

Outgoing Calls

The outgoing telephone number that matches the digit pattern in the Network Selection Table is deleted automatically. This is not programmable. The common carrier ID is sent to the Foreign Exchange.

To specify that no telephone number is sent to the network, choose the `Do not Copy Phone Number` programming option and be sure that no telephone number is assigned to each channel in the B-channel group by using the Telephone Number to Send procedure.

If ARS identifies a call as applying to a Call-by-Call B-channel group, but the Call-by-Call Services table does not show a matching digit pattern and bearer capability, the call is rejected.

Outgoing calls using Call-by-Call Selection Service can be made by pressing a line button, pressing a pool button, dialing a trunk pool number, or via ARS.

The Call-by-Call Services Table must be programmed for the Call-by-Call Service Selection feature to take effect. If a service is not specified in the table, the entry is ignored.

Feature Interactions

Account Code Entry

An account code can be entered at a telephone on a PRI line before the call is made or during the call. An account code entered before a call is made will be treated as an authorization code for all the outgoing calls placed over the PRI line.

If the SMDR feature is not enabled to record incoming calls, the system does not accept Account Code Entry information for these calls.

| | |
|----------------------------------|---|
| Automatic Route Selection | <p>An incoming call can access Automatic Route Selection (ARS) only through Remote Access, transferring, or Remote Call Forwarding through ARS. A PRI line can be a member of a pool that is accessed through ARS. Before ARS routes a call to a pool, it checks whether one or more member lines in that pool are available. If not, it selects an alternate pool so that the call will not be blocked. Even if a B-channel is available when ARS selects a pool with an available line, there may be none available when it is time to send a Setup message to the network. Or, after the Setup message is sent, the network may determine that the B-channel proposed by the system is not available. In either case, the call will fail and fast busy tone will be applied.</p> <p>If an incoming call matches the ARS access code, it is routed to the endpoint programmed for unassigned DID calls.</p> <p>A PRI line can be a member of a pool that is accessed through ARS. Before ARS routes a call to a pool, it checks to see that one or more member lines in that pool are available. If not, ARS selects an alternate pool so the call will not be blocked. An idle PRI line cannot be considered an available pool member unless a check determines that it is associated with an available B-channel. Even if a B-channel is available when ARS and pooling select a PRI line, there may be none available when the call is sent. In that case, the call fails and fast busy tone is applied.</p> |
| Barge-In | Barge-In can be used on a PRI line. |
| Call Waiting | Call Waiting is provided on PRI lines transferred to telephones so programmed. Call Waiting tone is not blocked from PRI data endpoints if turned on. Until the call is answered, answer supervision is not returned to the network, and the caller hears regular ringback as opposed to Call Waiting ringback. |
| Callback | An incoming call on a PRI line cannot be Callback queued for a busy line. A pool with PRI lines as members may be queued for. An idle PRI line is not considered an available pool member unless a check determines that it is associated with an available B-channel. Even if a B-channel is available when the pool selects a line for a queued call, there may be none available when it is time to send a Setup message to the network. Or, after the Setup message is sent, the network may determine that the B-channel proposed by the system is not available. In either case, the call will fail and a fast busy tone will be applied. |
| Group Calling | A PRI line that is a member of a B-channel group programmed for Routing by Dial Plan should not belong to a calling group. A line that is part of a B-channel group that is part of a calling group should not be programmed for Routing by Dial Plan. |

| | |
|----------------------------|--|
| HFAI | Incoming calls on a line that is a member of a B-channel group programmed for Routing by Dial Plan are not eligible for answer by Hands-Free Answer on Intercom (HFAI). |
| Paging | If the routing endpoint of an incoming call matches a Group Page access code, the call is routed to the endpoint programmed for unassigned DID calls. |
| Personal Lines | A Personal Line can be assigned to a telephone to represent a PRI line with Routing by Dial Plan. The green LED associated with the Personal Line lights steadily, and ringing on an SA button occurs; the LED does not flash to indicate that a trunk is ringing. Unlike DID, outside calls can be made on Personal Lines. |
| Remote Access | A PRI line that has been programmed for Routing by Dial Plan should not be programmed as Remote Access. |
| Remote Call Forward | A PRI line that has been programmed for Routing by Dial Plan cannot be programmed as belonging to a telephone with Remote Call Forwarding allowed. |
| SMDR | <p>The trunk number of a PRI line is shown in the <code>LINE</code> field of the SMDR. The authorization code for the FTS2000 network is shown in the <code>ACCOUNT</code> field.</p> <p>Call timing begins when the PRI line is selected. The Called Number field shows the number dialed by the user, before any digits are manipulated by ARS or PRI tables (Network Selection Table, Special Services Selection Table, or Call-by-Call Services Table).</p> <p>If the SMDR feature is not enabled to record incoming calls, the system does not accept Account Code Entry information for these calls.</p> |
| Transfer | For a trunk-to-trunk transfer, if no station/extension number is involved, the CPN for the outbound call is the programmed base number. |

Privacy

At a Glance

| | |
|-------------------|--------------------------------|
| Users Affected | Telephone users, DLC operators |
| Reports Affected | Extension Directory |
| Mode | All |
| Telephones | All except QCC |
| Programming Code | *31 |
| Feature Code | |
| On | 31 |
| Off | *31 |
| MLX Display Label | Privacy [Prvcy] |

Description

Privacy prevents other people from joining calls on shared Personal Lines or **Shared SA** buttons. Privacy also prevents Barge-In from being used to join a call.

A user can turn on Privacy before or during a call, and it remains on for all calls to and from that extension until the user turns it off.

When Privacy is turned on at an extension, anyone selecting a shared Personal Line or **Shared SA** button on which a call is active hears silence instead of joining the call. A person using Barge-In hears a busy signal when trying to join a call on a telephone with Privacy turned on.

If Privacy is turned on while a call is in progress, it does not affect anyone who has already joined the call, but prevents other users from joining the call.

Considerations and Constraints

Multiline telephone users should program Privacy on a button if they intend to use the feature, so that the green LED next to the button gives a visual reminder when Privacy is turned on.

Single-line telephone users receive no indication of whether Privacy is on or off.

Telephone Differences

Queued Call Consoles

A QCC operator cannot use Privacy.

Other Multiline Telephones

To turn on Privacy, the user presses a programmed **Privacy** button (the green LED goes on) or presses the **Feature** button and dials **31**.

To turn off Privacy, the user presses the programmed **Privacy** button (the green LED goes off) or presses the **Feature** button and dials ***31**.

When an MLX-10D, MLX-20L, or MLX-28D display telephone user turns on Privacy, the display briefly shows the message `Privacy On` before returning to the Home screen or call-handling display. When the user turns off Privacy, the display briefly shows the message `Privacy Off`.

When an MLX-10 non-display or analog multiline telephone user (with or without a display) turns Privacy on or off, there is no visual confirmation unless a Privacy button is programmed on the telephone and its green LED is on or off.

Single-Line Telephones

To turn on privacy before making or receiving a call, a single-line telephone user lifts the handset and (while listening to inside dial tone) dials **#31** and hangs up. To turn on Privacy while a call is in progress, the user presses and releases the **Recall** or **Flash** button or switchhook and dials **#31**. To return to the call, the user presses and releases the **Recall** or **Flash** button or switchhook again.

To turn off Privacy before making or receiving a call, the user lifts the handset and (while listening to inside dial tone) dials ****31** and hangs up. To turn off Privacy while a call is in progress, the user presses and releases the **Recall** or **Flash** button or switchhook and dials ****31**. To return to the call, the user presses and releases the **Recall** or **Flash** button or switchhook again.

A single-line telephone user has no visual or other indication of whether Privacy is on or off.

NOTE:

Some single-line telephones, such as AT&T models 2500YMGK and 2500MMGK, use a timed disconnect. On these telephones, pressing the switchhook disconnects the call. The user must use the **Recall** button instead of the switchhook when turning Privacy on or off.

Feature Interactions

| | |
|--|---|
| Barge-In | Barge-In does not override Privacy. |
| Display | When an MLX-10D, MLX-20L, or MLX-28D display telephone user turns on Privacy, the display briefly shows the message <code>Privacy On</code> before returning to the Home screen or call-handling display. When the user turns off Privacy, the display briefly shows the message <code>Privacy Off</code> . |
| Headset Options | Privacy should be turned on when headset users with Headset Auto Answer turned on have Shared SA buttons or share one or more Personal Lines. Privacy keeps the users from competing for the same call. When two or more users try to answer the same call on a Shared SA or Personal Line button, the red and green LEDs next to the button go on, but only one person can talk with the caller. |
| Multi-Function Module | The use of Privacy on an MFM is not recommended because the user does not have an LED to indicate whether Privacy is on or off. |
| Personal Lines | <p>If Privacy is turned on at an extension, a user with a shared Personal Line button for that extension cannot join a call on that button.</p> <p>If Privacy is turned on while a call is in progress, it does not affect anyone who has already joined the call, but prevents other users from joining the call.</p> |
| Recall | A single-line telephone user with a Recall button can use Recall to turn Privacy on or off during a call. |
| Signaling | Users can program and use a Signaling button to contact a co-worker who has turned on Privacy. |
| System Access/ Intercom Buttons | <p>If Privacy is turned on at an extension with a Shared SA button, other users, including the principal extension, cannot join a call on that button.</p> <p>If Privacy is turned on while a call is in progress, it does not affect anyone who has already joined the call, but prevents other users from joining the call.</p> |

Programming

At a Glance

| | |
|----------------|----------------|
| Users Affected | System Manager |
| Mode | All |
| Telephones | All |



CAUTION:

Remote System Programming

As a customer of a new telephone system, you should be aware that there exists an increasing problem of telephone toll fraud. Telephone toll fraud can occur in many forms, despite the numerous efforts of telephone companies and telephone equipment manufacturers to control it. Some individuals use electronic devices to prevent or falsify records of these calls. Others charge calls to someone else's number by illegally using lost or stolen calling cards, billing innocent parties, clipping on to someone else's line, and breaking into someone else's telephone equipment physically or electronically. In certain instances, unauthorized individuals make connections to the telephone network through the use of remote access features.

The Remote Access feature of your system, if you choose to use it, permits off-premises callers to access the system from a remote telephone by using an 800 number or a 7- or 10-digit telephone number. The system returns an acknowledgement signaling the user to key in his or her authorization code, which is selected and administered by the system manager. After the authorization code is accepted, the system returns dial tone to the user. If you do not program specific egress restrictions, the user will be able to place any call normally dialed from a telephone associated with the system. Such an off-premises network call is originated at, and will be billed from the system location.

The Remote Access feature, as designed, helps the customer, through proper administration, to minimize the ability of unauthorized persons to gain access to the network. Most commonly, phone numbers and codes are compromised when overheard in a public location, through theft of a wallet or purse containing access information, or through

carelessness (writing codes on a piece of paper and improperly discarding it). Additionally, hackers may use a computer to dial an access code and then publish the information to other hackers. Enormous charges can be run up quickly. It is the customer's responsibility to take the appropriate steps to properly implement the features, evaluate and administer the various restriction levels, protect access codes, and distribute access codes only to individuals who have been fully advised of the sensitive nature of the access information.

Common carriers are required by law to collect their tariffed charges. While these charges are fraudulent charges made by persons with criminal intent, applicable tariffs state that the customer of record is responsible for payment of all long-distance or other network charges. AT&T cannot be responsible for such charges and will not make any allowance or give any credit for charges that result from unauthorized access.

To minimize the risk of unauthorized access to your communications system:

- *Use a nonpublished Remote Access number.*
- *Assign authorization codes randomly to users on a need-to-have basis, keeping a log of ALL authorized users and assigning one code to one person.*
- *Use random sequence authorization codes, which are less likely to be easily broken.*
- *Deactivate all unassigned codes promptly.*
- *Ensure that Remote Access users are aware of their responsibility to keep the telephone number and any authorization codes secure.*
- *When possible, restrict the off-net work capability of off-premises callers, via use of Call Restrictions and Disallowed List capabilities.*
- *When possible, block out-of-hours calling.*
- *Frequently monitor system call detail reports for quicker detection of any unauthorized or abnormal calling patterns.*
- *Limit Remote Call Forward to persons on a need-to-have basis.*

Description

Programming allows you to customize and update your system and provides telephone users and operators with a wide range of features. There are three types of programming:

- system programming
- centralized telephone programming
- extension programming

The tables in Appendix C provide complete lists of system operator and telephone features, their programming codes, and the telephones on which the features can be programmed. The tables also show which features can be assigned only through centralized telephone programming.

System Programming

Initial system programming is done when the system is planned and installed. The system can be reprogrammed as the needs of the customer change.

Like centralized telephone programming, system programming can be done either on the system programming console or using SPM software.

Complete information on system programming can be found in *System Programming*.

Programming with the MLX-20L Telephone

The MLX-20L telephone is the only telephone that can be used as a system programming console (see Figure 29). The MLX-20L telephone must be connected to the first station jack on the first MLX module for initial programming of a new system.

For subsequent programming, the jack assignment can be changed. The system operator jack can be used, or a separate system programming jack can be designated to allow programming of the system without interfering with system operator call handling.

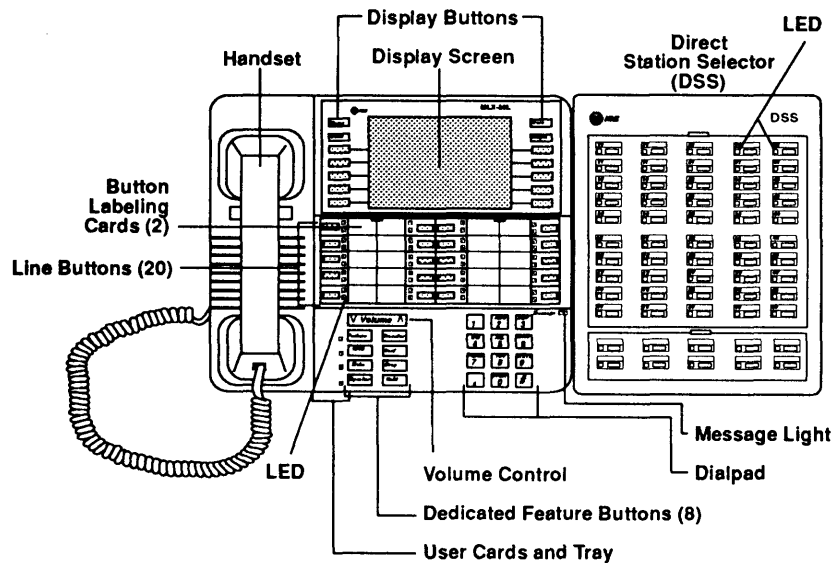


Figure 29. MLX-20L Telephone

The buttons next to the console's display are used to do most of the programming. The top two buttons on each side are labeled and have the same functions in every screen. They are **Home**, **Menu**, **More**, and **Inspct**.

The next five unlabeled buttons on each side are used to select options from a menu displayed on the screen.

Programming the system may also involve using the dial pad, some of the labeled function buttons on the lower portion of the console, or the 20 line and feature buttons in the center of the console. The overlay that “renames” buttons for use during programming is shown in Figure 30.

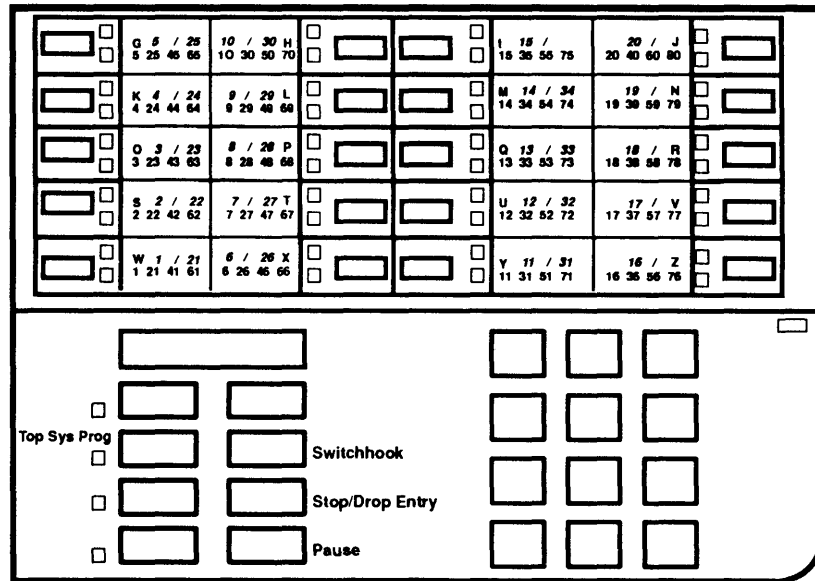


Figure 30. System Programming Console Overlay

The red and green LEDs next to the 20 line and feature buttons assist the system programmer. These buttons are on or off during programming, depending on whether they have been programmed.

Direct Station Selector. One or two Direct Station Selectors (DSSs) can be used with the MLX-20L telephone. Each DSS adds 50 buttons to the system programming console. For more information about the DSS, see “Direct Station Selector.”

The LEDs on the DSS indicate the status of telephone features during system programming, such as Calling Restrictions. Each LED on the DSS represents a telephone connected to the system. When certain features are selected from the System Programming menu, the LEDs on the DSS indicate the status of the feature for each telephone. For example, if Restriction is selected from the Extension menu, the red LED is on for each telephone that is toll-restricted.

Programming with SPM on a PC

The advantages of programming the system with a PC are the availability of surrogate mode and the security that comes from knowing that programming can be backed up on a floppy or hard disk. This makes recovery of system programming fast and efficient in the event of an inadvertent system shutdown or loss of power. To program with a PC, the SPM software is needed, along with

MS-DOS® or UNIX operating system software. SPM provides an interface to the programming and maintenance software in the control unit processor module.

The SPM software emulates the display screen and buttons of a system programming console (the MLX-20L telephone). As shown in Figure 31, the SPM display mirrors the following three areas of the console:

- Display and display buttons (at the top of the SPM screen)
- Function buttons (described on the right side of the screen)
- Line buttons (represented in the lower portion of the display)

To use SPM for system programming, the PC must be connected to the control unit. This can be done either directly through the system programming jack on the control unit or through a modem (modems can be used for either on-site or remote programming). See System Programming for details on SPM use.

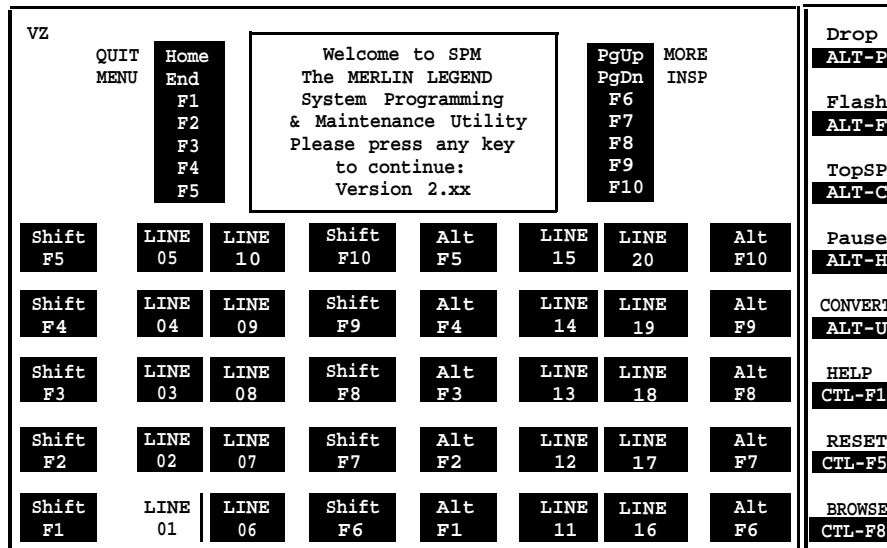


Figure 31. SPM Display

On-Site and Remote Programming. PC-based SPM programming via a modem can be done either on-site or from a remote location. In both cases, the built-in modem of the control unit is used. Accessing the modem for on-site programming is done by dialing the code for the control unit's modem (*10), which establishes connection to the system programming jack.

Accessing the built-in modem for remote programming can be done in any of the following ways:

- Calling the system on a remote-access line and entering a barrier code (if needed), and then dialing the code for the control unit's built-in modem.

- Calling the system on a regular line and asking the system operator to transfer the call to the control unit's built-in modem.
- Calling the remote PC with SPM from a telephone on the system, then transferring the call to the control unit's built-in modem.

Remote programming allows qualified technicians to run diagnostic tests and to display information needed to maintain the system. It is also used by technical support organizations for installation and maintenance support.

Remote system programming overrides on-site system programming unless an on-site backup or restore procedure is taking place. If on-site system programming is being performed when a remote connection is attempted, the system sends a message to the programmer that a remote connection has been established and the current on-site programming session is terminated.

System Programming Screens

The system programming console display and SPM screen present step-by-step prompts throughout programming. Three different types of screens appear on the console display and SPM screen:

- **Menu selection screens** allow selection of menu options. After making a selection, either a more detailed menu screen or a data entry screen is shown.
- **Informational screens** show currently programmed information. Changes cannot be made to these screens.
- **Data entry screens** allow identification information (such as an extension number or trunk number) or values (such as number of seconds or rings) to be entered.

The menu hierarchy—the sequence of menu screens that appear as different options are selected from menus during system programming—is shown in Appendix D, “System Programming Menu Hierarchy.”

System Programming Reports

System programming reports are available when `Print Opts` is selected from the System Programming menu. These reports can be directed to the SMDR printer or a printer connected to the PC used for system programming. In addition, `Print Opts` allows you direct reports to the PC, thereby enabling users to use the `Browse` option to read reports on the PC screen. See Appendix E, “Sample Reports,” for sample reports.

Centralized Telephone Programming

Centralized telephone programming allows the system manager to program from a single location any feature that can be programmed by individual telephone users or system operators. Centralized telephone programming can be done on the programming console (MLX-20L) or on a PC with SPM software.

The following features can be programmed *only* through centralized telephone Programming (not by individual users):

- Barge-in
- Headset Hang Up
- All **SA** buttons (Hybrid/PBX mode) and **ICOM** buttons (Key and Behind Switch modes)

Extension Programming

Extension Programming allows telephone users and system operators to customize their telephones to meet personal needs. Multiline telephone users can assign a wide range of features to buttons on the telephone. Many other features that do not require button assignment can be programmed on both multiline telephones and single-line telephones.

Users can program their telephones by dialing programming codes or, on MLX display telephones, selecting features from the display. When a telephone is in program mode, the system considers it busy; therefore, no incoming calls ring at the telephone until it is back in the call-handling mode. See Appendix C, “General Feature Use and Telephone Programming,” for instructions on how to program features on MLX, analog, multiline, and single-line telephones.

Queued Call Console

At a Glance

| | |
|--------------------|---|
| Users Affected | QCC operators |
| Reports Affected | Operator Information System Information |
| Mode | Hybrid/PBX |
| Telephones | MLX-20L telephones |
| System Programming | <p>Assign or remove a QCC position: <ul style="list-style-type: none"> ● Operator → Positions → Queued Call </p> <p>Change Operator Hold Timer for all QCC (and DLC) operators: <ul style="list-style-type: none"> ● Operator → Hold Timer </p> <p>Assign QCC Queue Priority to individual trunks: <ul style="list-style-type: none"> ● LinesTrunks → More → QCC Prior </p> <p>Assign QCC operator to receive calls on individual trunks: <ul style="list-style-type: none"> ● LinesTrunks → More → QCC Oper </p> <p>Specify treatment for calls on DID trunks to invalid (unassigned) extensions: <ul style="list-style-type: none"> ● LinesTrunks → DID → InvalDstn </p> <p>Specify destination for calls on DID trunks to invalid extensions, if sent to backup extension: <ul style="list-style-type: none"> ● Options → More → Unassigned </p> <p>Assign call types to ring in to QCC queue, QCC operator to.br receive calls, and priority level: <ul style="list-style-type: none"> ● Operator → Queued Call → Call Types </p> <p>Specify frequency for Elevate Priority (queue reprioritization): <ul style="list-style-type: none"> ● Operator → Queued Call → ElvatePrior </p> <p>Specify whether calls on hold return to QCC queue after Operator Hold Timer has expired twice: <ul style="list-style-type: none"> ● Operator → Queued Call → Hold Rtrn </p> <p>Select Automatic Hold or Automatic Release for all QCC operators: <ul style="list-style-type: none"> ● Operator → Queued Call → HoldRelease </p> <p>Enable or disable Calls-In-Queue alert: <ul style="list-style-type: none"> ● Operator → Queued Call → InQue Alert </p> <p>Specify threshold for Queue Over Threshold alert: <ul style="list-style-type: none"> ● Operator → Queued Call → Threshold </p> <p>Select Automatic or Manual Extended Call Completion for all QCC operators: <ul style="list-style-type: none"> ● Operator → Queued Call → ExtndComplt </p> |

Continued on next page

At a Glance *(continued)*

| | |
|---|--|
| System Programming (continued) | <p>Designate Calling Group as QCC Position Busy Backup: ● Operator → Queued Call → More → QCC Backup</p> <p>Specify Return Ring Interval for extended calls: ● Operator → Queued Call → Return Ring</p> <p>Assign QCC positions for Message Center operation: ● Operator → Queued Call → Msg Center</p> <p>Change Listed Directory Number: ● Extensions → More → Grp Calling → Overflow</p> <p>Change Listed Directory Number extension: ● SysRenumbr → Single → More → ListDirectNo</p> |
| Hardware | 008 MLX or 408 GS/LS-MLX module |
| Maximums | |
| QCC Positions | 4 (8 operators total, including DLCs) |
| QCCs per Module | 2 |
| Position Busy Backups | 1 |
| Factory Settings | |
| Operator Hold Timer | 60 sec (range 10-255 sec) |
| QCC Queue Priority for Trunks/Call Types | 4 (range 1-7) |
| Treatment of Calls to Invalid Extensions | Backup Extension |
| Destination for Calls to Invalid Extensions | QCC Queue |
| Call Types | |
| Dial 0 | Primary system operator |
| Unassigned DID | Primary system operator |
| Listed Directory Number | Primary system operator |
| Returning Calls | Originating operator position (Initiator) |
| Group Coverage | none |

Continued on next page

At a Glance *(continued)*

Factory Settings

(continued)

| | |
|--------------------------|---|
| Elevate Priority | 0 (no reprioritization) (range 5-30 sec, 0) |
| QCC Hold Return | Remain on Hold |
| QCC Hold Release | Automatic Release |
| Calls-in-Queue Alert | Disabled |
| Queue Over Threshold | 0 (no alert) (range 1-99 calls, 0) |
| Extended Call Completion | Automatic |
| Position Busy Backup | none |
| Return Ring Interval | 4 rings (range 1-15 rings) |
| Message Center position | none |
| Listed Directory No. | 800 |

Description

The Queued Call Console (QCC) is an answering position available only in Hybrid/PBX mode. The QCC is an MLX-20L telephone used by system operators to do the following:

- Answer outside calls that are directed to the QCC queue or to a specific QCC operator.
- Answer inside calls to the system operator or to a specific QCC operator's extension.
- Direct (or *extend*) inside and outside calls to an extension or to an outside telephone number.
- Serve as a message center.
- Make outside calls — for example, for users with telephones restricted from making outside calls.
- Set up conference calls.
- Monitor system operation.

The system can have a maximum of four QCCs. Two QCCs can be designated per 008 MLX or 408 GS/LS-MLX module, with QCCs assigned only to the first and fifth station jacks on each module. The first QCC must be assigned to the first station port in the system — that is, port 1 of the MLX module installed in the lowest slot.

The first jack on the first MLX module is factory-set as the *primary system operator position*. This cannot be changed. If a system has both DLC and QCC operator positions, the factory-set primary operator position must be a QCC.

QCC Operation

Call Delivery

Outside calls designated through system programming to ring at a QCC are sent by the system to a single common QCC *queue*, where they wait to be sent to a QCC operator console. When a QCC operator is available to receive a call, the system removes the call from the queue and sends it to an idle **Call** button on the QCC.

Calls are delivered to the QCC operator in first in-first out order, according to the *Queue Priority* level assigned to each type of call. If more than one QCC operator is available, the operator who has been idle the longest receives the call.

Both inside and outside calls ring on **Call** buttons on the QCC. Unlike the Direct-Line Console (DLC), on which multiple incoming calls can ring simultaneously, the QCC receives one call at a time, regardless of the number of calls in the QCC queue. When a call rings on a **Call** button, call origin information is shown on the display.

Operator Availability

A QCC operator is available to receive a call from the queue when there are no active calls (including ringing calls) at the console except calls on hold.

A QCC operator is unavailable to receive a call from the queue under the following conditions:

- A call is ringing at the console.
- The operator is on a call.
- The operator has a call in the split condition.
- The operator is setting up a conference.
- All **Call** buttons are busy.
- The console is being used for system programming.
- The console is in maintenance mode.
- The operator is programming a Personal Directory listing or the Alarm Clock.
- The console is not plugged in.

Extending Calls

To extend an active call, or direct it to another extension or outside number, the QCC operator presses either the **Start** button or a Direct Station Selector (**DSS**) button.

- The **Start** button *splits* the call, or divides it into two separate halves, each connected to the QCC.

The active call, or *source*, automatically goes on hold at the **Source** button (the green LED next to the **Source** button flashes). An outside caller hears Music-on-Hold, if programmed, or silence if Music-on-Hold is not programmed. An inside caller hears silence.

The QCC operator hears a dial tone on the same **Call** button where the call had been active. The operator can use the dialpad, a Directory feature, or a **DSS** button to dial another extension or an outside number. This second half of the call is the *destination*.

The QCC display shows that the call is split. Once the destination has answered, the operator can press the appropriate button (**Source** or **Destination**) to speak with the party on either half of the split call. The operator can go back and forth between the source and destination as many times as necessary. The operator connects the two halves of the split call by pressing one of the following buttons:

- **Join** connects all three parties — source, destination, and operator — in a three-way conference on the original **Call** button.
 - **Release** connects the source and destination and removes the call from the QCC. The operator is now available to receive another call from the queue. Only one split condition can be active at any given time on a QCC.
- A **DSS** button does one of two things, depending on how Extended Call Completion is programmed for the system:
 - With *Manual Completion*, the call is split automatically. When the operator presses a **DSS** button, the active call (the source) goes on hold at the **Source** button and the extension represented by the **DSS** button (the destination) is dialed. Once the destination user answers, the operator can press the **Source** or **Destination** button to talk to one party at a time (automatically putting the other on hold) or press the **Release** or **Join** button to connect the parties to each other.
 - With *Automatic Completion*, the extension is dialed automatically and the call is released from the console. The effect is the same as if the operator had split the call, dialed an extension, and then pressed **Release**, joining the source and destination, and removing the call from the console.

NOTE:

When the system is programmed for Automatic Completion, the operator can still split and complete the call manually by pressing the **Start** button, then using the dialpad or a Directory feature to dial the destination, and pressing the **Release** or **Join** button.. In this situation, the operator cannot use a **DSS** button to dial, because the Automatic Completion option takes over and releases the console.

QCC Features

The MLX-20L telephone is the only telephone that can be assigned as a QCC. A QCC operator cannot use feature codes to activate features, but can use only the features that can be selected from the display or assigned permanently as buttons on the console. To simplify call handling, the Home screen includes features used often by a QCC operator. The features available on the Home screen depend on the status of the call in progress as shown in Table 33.

Table 33. Features Available at Call Progress Stages

| Call Progress | Feature Displayed | Display Appearance |
|---------------------------------------|--------------------------|---------------------------|
| Inactive or inside dial tone | Group Pickup | Pickup Grp |
| | Pickup | Pickup |
| | Loudspeaker Page | Loudspkr Pg |
| | Account Code Entry | AccountCode |
| | Follow Me | Follow Me |
| | Cancel Follow Me | CancelFollow |
| Reached busy extension | Barge in | Barge In |
| | Leave Message | Leave Msg |
| | Camp On | Camp On |
| Ringing at, or connected to extension | Barge In | Leave Msg |
| | Leave Message | Barge In |
| | Camp On | Camp On |
| Connected to an outside line | Camp On | Camp On |
| | Account Code | AccountCode |
| | Follow Me | Follow Me |
| | Cancel Follow Me | CancelFollow |

The 7-line, 24-character display also provides the QCC operator with descriptive information about incoming and outgoing calls. This information includes extension numbers and any programmed labels (such as names), trunk identifiers, reasons for call return and redirection, and the number of unanswered calls waiting in the queue. See Display for details on call information displays.

The QCC is automatically assigned the buttons shown in Figure 32. These assignments cannot be changed or reprogrammed. Each of these buttons is described following Figure 32.

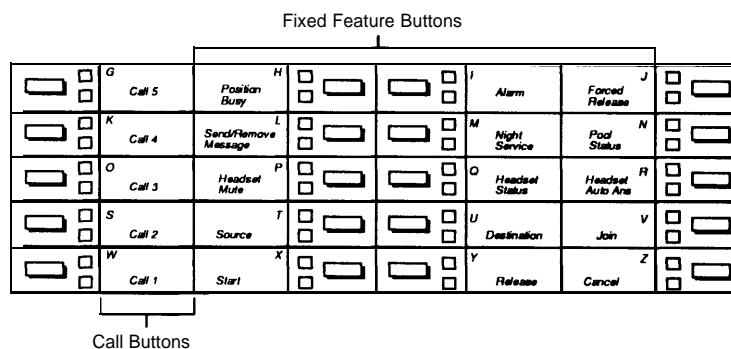


Figure 32. QCC Button Assignments

| Button | Description |
|--------------------|---|
| Call | Five call buttons are used for answering incoming calls and making inside and outside calls. Call buttons are set for Immediate Ring and cannot be reset. |
| Start | Initiates call extending by putting a caller on hold at the Source button and providing inside dial tone to the QCC operator. |
| Source | Reconnects the QCC operator to the source and puts the destination on hold while the call is split. |
| Destination | Reconnects the QCC operator to the destination and puts the source on hold while the call is split. |
| Release | Releases the QCC operator from a call and/or completes the call extending process, making the operator available for another call. |
| Cancel | Cancels call extending and reconnects the QCC operator with the caller (source). If the QCC operator is already connected to the source (destination is on hold), pressing this button has no effect. |

| Button | Description |
|-----------------------------|--|
| Join | Connects all three parties — source, destination, and QCC operator — in a three-way conference on one Call button. |
| Headset/Handset Mute | Turns the handset or headset microphone off or on. When the microphone is off, the QCC operator can speak with another person without being heard by the caller. The red LED next to the button is on when the headset or handset microphone is off, and off when the headset or handset microphone is on. |
| Headset Status | Turns headset operation on the console on and off. When headset operation is on, the green LED next to the button is on and the QCC operator must use a headset or the speakerphone. When headset operation is off, the green LED is off and the QCC operator must use the handset or the speakerphone. |
| Headset Auto Ans | <p>Turns the Headset Auto Answer feature on and off when headset operation is activated. The green LED next to the Headset Auto Answer button is on when the feature is on and off when the feature is off.</p> <p>When the feature is on and a call arrives at the QCC, the operator is connected to the call automatically. To protect the privacy of any conversation the operator may be having, the operator hears a tone in the headset and the microphone is turned off briefly before the call is connected.</p> <p>The feature can be turned on during a call without disconnecting the caller and is effective immediately.</p> |

| Button | Description |
|----------------------------|---|
| Send/Remove Message | Turns the Message LED on a telephone on or off. For telephones without a display, this button is the only way the message LED can be turned on, unless the telephone is programmed as a message-waiting receiver for a fax machine or Calling Group, or the system has a voice messaging system (VMS) connected. |
| Position Busy | <p>Temporarily takes the QCC out of service. When the console is in the Position Busy state, the green LED next to the button is on and the position does not receive calls from the QCC queue. However, the position does receive calls to the QCC operator's extension and Forward and Follow Me calls directed to that extension.</p> <p>When the QCC operator puts the console in the Position Busy state, incoming calls and any calls already in the queue are directed to other available QCCs (regardless of whether they normally receive such calls). When all QCC operators are in the Position Busy state, calls are directed to a Calling Group assigned as the Position Busy Backup.</p> <p>The QCC operator can still make calls when the console is in the Position Busy state.</p> |
| Night Service | Turns Night Service on and off. |
| Alarm | Provides visible indication of a system alarm. When there is a system alarm, the red LED next to the button is on and the QCC operator can use Inspect to determine the number of alarms present. |
| Pool Status | Provides the QCC operator with information on the status of all trunk pools. The QCC operator presses the Inspect button, then the Pool Status button, and busy or available status of trunk pools is shown on the display. The information includes the number of trunks and the number of busy trunks in each pool. |
| Forced Release | Disconnects the QCC from an active call and makes the operator available to receive another call. If the QCC has a split call, this button disconnects the operator and both halves of the call. |

Each QCC can have one or two DSSs attached. The QCC operator can use the buttons during call handling, for example, to extend a call, make an inside call, park a call, or to see the availability of an extension. See Direct Station Selector for detailed information on the use of the DSS.

QCC Options

The following options are assigned through system programming and are available only for QCCs:

Trunk Routing

The factory setting does not assign trunks to any QCC. Calls received on each trunk can be programmed to ring on one or more individual QCCs.

When a QCC receiving calls is in the Position Busy state, any incoming calls (except for calls directed to that console's extension and forwarded calls) are directed to other available QCCs that are programmed to receive calls on the trunk. If no QCC position is programmed to receive the call, the call is directed to any available QCC regardless of whether it normally receives such calls. When all QCC operators are in the Position Busy state, calls received on trunks (including calls currently waiting in the queue) are sent to the programmed backup Calling Group.

NOTE:

Individual Direct Inward Dialing (DID) trunks, dial-in tie trunks, and dedicated Remote Access trunks are handled as Call Types and treated differently as described later in this section.

In addition to specifying the trunks that ring on each QCC, a priority can be specified for each trunk. See QCC Queue Priority later in this section.

Personal Line and **Pool** buttons cannot be assigned to a QCC.

DID trunks, dial-in tie trunks, or dedicated Remote Access trunks cannot be programmed to ring into the QCC queue.

Trunks assigned to ring into the QCC queue can also be assigned as Personal Lines on one or more telephones.

Call Types

The Call Types option specifies other types of calls that ring in to the QCC queue. The following types of calls may be directed to a specific QCC position with a specified Queue Priority Level:

- Dial 0 calls (calls to the QCC operator)
- Calls to unassigned (invalid) extensions received on DID or dial-in tie trunks, or by Remote Access users

Calls to unassigned extensions can be programmed to receive a fast busy or to be directed to a backup position. The backup position can be any individual extension (including one that is not an operator position), the QCC queue, or a Calling Group.

NOTE:

Assigning a QCC operator to receive the calls does not cause the calls to ring in to the queue. The calls must be programmed to go to a backup position, and the QCC queue must be programmed as the backup position.

- Calls to the Listed Directory Number (the extension for the QCC queue)
- Returning calls—Unanswered extended, camped-on, held, and QCC operator-parked calls
- Group Coverage calls (the QCC can be designated to receive Group Coverage calls)

The following types of calls are assigned only a Queue Priority Level and cannot be directed to an individual QCC operator position because they are always made to a specific operator position by the caller:

- Calls signed in (Follow Me) or forwarded to the QCC operator
- Calls to a QCC operator extension (for example, calls received from an inside or Remote Access user) or calls received on DID or dial-in trunks programmed to reach the QCC operator's extension

The factory setting directs the following calls to the *primary QCC operator position*:

- Dial 0 calls
- Calls to the Listed Directory Number
- Calls to invalid destinations

Group Coverage calls are not programmed to ring at any specific QCC.

For returning calls, the factory setting returns calls to the originating operator position (the initiator).

The factory settings can be changed so that each type of call is directed to a different and/or additional QCC, or is not directed to any of the QCC operator positions. In addition, if the QCC queue is assigned to be a Group Coverage receiver, and if no QCC operator is assigned to receive calls for the Coverage Group, the Coverage calls go to the *primary QCC operator position*.

If the calls are not directed to a QCC operator position and a user dials 0 or the Listed Directory Number, the caller hears a fast busy if the call was made on a DID or dial-in tie trunk, or by a Remote Access user. On other types of lines, the caller hears an error tone. If returning calls are not directed to a QCC operator position, the caller hears normal ringback, Music-on-Hold, or silence, and is not made aware by any special audible feedback that the call is not returning to the queue for further handling.

Programming an operator to receive DID calls to invalid destinations (unassigned extension numbers) will not cause the calls to ring into the QCC queue unless the calls are also programmed to be sent to a backup extension instead of receiving a reorder tone.

QCC Queue Priority

The QCC Queue Priority determines the priority (within the QCC queue) of calls programmed to ring in to the QCC queue. A priority value of 1–7 is assigned, which determines the order in which calls are sent to QCCS. A value of 1 is the highest priority of calls and 7 is the lowest. The factory-set priority level is 4 for all call types and trunks.

The values can be changed for each trunk and each call type according to the order that calls should be answered.

Call types are as follows:

- Dial 0
- Forward/Follow Me
- Unassigned DID
- Listed Directory Number
- Returning
- Group Coverage
- QCC extension

For example, if important customer calls are received on particular trunks, a priority value of 1 should be programmed so that the calls are answered before any others. Values of 2 through 7 should be assigned to trunks or call types used for less important calls. Careful planning of QCC queue priority assures prompt answering of all important business calls.

Elevate Priority

During high-volume calling periods, it is possible that only high-priority calls will be delivered to a QCC within a reasonable amount of time. Low-priority calls can remain unanswered if there is a constant flow of higher priority calls.

Elevate Priority helps avoid this problem by allowing the system to raise the priority of a call that has been waiting too long in the QCC queue. The setting determines the length of time (5–30 seconds in increments of 10 seconds) before calls waiting in the QCC queue are automatically reprioritized to a higher level. The factory setting is 0, which means that calls are not reprioritized.

When the QCC queue is reprioritized, the priority of every call in the queue is increased to the next higher level. For example, a call that is currently at a priority level of 4 is changed to the next higher priority level of 3 when the timer expires. However, the priority of a call is never elevated to 1 because those calls must reach the QCC operator as quickly as possible.

Extended Call Completion

The setting for the Extended Call Completion option determines whether or not the process of transferring calls (also known as extending or directing calls) is completed automatically when a **QCC** operator with a **DSS** presses a **DSS** button. The following are the available settings for Extended Call Completion:

- **Automatic** (the factory setting): The QCC operator can initiate the call transfer, dial the extension, and complete the process by pressing the **DSS** button while on a call. The operator does not need to press the **Start** button to begin the transfer processor the **Release** button to complete the transfer process. If the QCC operator chooses, the **Start** button can be pressed before pressing the **DSS** button. However, call transfer is automatically completed when the QCC operator presses a **DSS** button.

With the automatic setting for Extended Call Completion, the QCC operator can announce transferred calls only by pressing the **Start** button and then manually dialing the destination extension number.

- **Manual**: The QCC operator can initiate the call transfer process and dial the extension by pressing a **DSS** button while on a call. However, the QCC operator must complete call transfers manually by pressing the **DSS** button and then pressing the **Release** button or hanging up. The QCC operator does not need to press the **Start** button to begin the transfer process. This allows the QCC operator to speak to the destination and/or announce the call before connecting the caller.

When Automatic Release is programmed and the QCC operator tries to transfer a call to an invalid extension (such as a Paging Group), the display shows `Denied: Cannot Release.`

NOTE:

- This message also appears immediately if the QCC operator presses the **DSS** button for the Automatic Route Selection (ARS) or a pool dial-out code. The QCC operator can, however, dial the outside telephone number and release the call manually, even though the `Denied: Cannot Release` message is shown on the display.
- Camp-On cannot be used when Automatic Release is programmed and the QCC operator presses a **DSS** button for a call transfer.

Message Center Operation

Message Center Operation is used to designate one or more QCC positions to function as a message center and receive the following types of calls:

- QCC operator returning calls—returning transferred, parked, held, and camped-on calls
- Group Coverage calls
- Calls to unassigned (invalid) extensions received on DID or dial-in tie trunks or made by Remote Access users

The factory setting is that no Message Center position is assigned and that returning calls are returned to the originating system operator position (the initiator), which, by definition, is a QCC queue when the system has any QCCs. Group Coverage calls are not programmed to ring at any specific QCC operator position. When a Message Center is programmed, these calls are directed to the Message Center position. The QCC queue can be programmed so that other QCC operator positions can receive Group Coverage calls, calls to unassigned extensions, and returning calls. If the factory setting remains unchanged (where returning calls are sent to the originating operator position), returning calls will be sent to the programmed Message Center instead of the originating operator. If, however, this factory setting is changed so that calls are sent to the QCC queue instead of the originating operator, returned calls will be sent to either destination—the QCC queue or the programmed Message Center.

The QCC operator position programmed as the Message Center position can also receive other call types by assigning the position as a QCC operator to receive the call type.

Position Busy Backup

Position Busy Backup designates a Calling Group to receive calls when all QCCs are in a Position Busy state. Only Calling Groups can be designated as QCC Position Busy Backup. If no Calling Group is assigned to provide Position Busy Backup, the system does not allow the last QCC operator to use Position Busy. Position Busy Backup is programmed for QCC queue rather than individual operator positions. Only one Position Busy Backup can be programmed.

Operator Hold Timer

Operator Hold Timer specifies the length of time that must lapse (10-255 seconds) before the operator is reminded (with an abbreviated ring) that a call is on hold. The factory setting for this interval is 60 seconds. Operator Hold Timer can be set for both DLCs and QCCs. It cannot be programmed for individual operator positions. If another call is received at the same time that the hold timer expires, 10 seconds are added to the programmed Operator Hold Timer interval.

Hold Return

Hold Return determines whether calls put on hold at a QCC remain on hold at the QCC operator's console indefinitely or are returned to the QCC queue after the Hold Timer has expired twice. The factory setting is that calls remain on hold.

When the QCC Hold Return Option is set for calls to remain on hold indefinitely, the QCC operator hears the abbreviated ring every time the interval expires. If the QCC Hold Return option is set for calls to return to the queue, each call on hold at the QCC operator console is timed individually (a queue return timer is used for each **Call** button).

Automatic Hold or Release

Automatic Hold or Automatic Release determines whether a call in progress on a **Call** button is automatically put on hold (Automatic Hold) or released (Automatic Release) when the QCC operator presses another **Call** button. The factory setting is Automatic Release.

Return Ring Interval

The Return Ring Interval determines the number of rings (1–15) before an unanswered extended call returns to the QCC queue or returns to a QCC Message Center position. The factory setting is 4 rings.

Calls-in-Queue Alert

When Calls-in-Queue Alert is enabled for an individual QCC operator, the operator is alerted by a single tone every time a new call enters the queue. By monitoring the Calls-in-Queue Alert, the QCC operator can determine if heavy call volumes warrant the need for additional answering positions. The factory setting for Calls-in-Queue Alert is disabled for each QCC operator.

Queue Over Threshold

The Queue Over Threshold setting is the maximum number of calls allowed in the QCC queue before all QCC operators are warned that too many unanswered calls are waiting in the queue. The factory setting is 0 (operators are not notified). The threshold can be changed to 1–99 calls.

In normal call handling, line 3 of each QCC operator's display shows the number of calls currently in the queue for that QCC position, and the total number of calls in the queue for all QCC operators. The information is updated each time a call enters or leaves the queue. When the number of calls is equal to or greater than the programmed threshold, the queue indicator is highlighted, and QCC operators who are on a call hear a tone.

NOTE:

When there are more than 99 calls in the queue, the display shows 99 until the number of calls drops below 99.

If two QCC operators are on the same call, only one QCC operator hears the Queue Over Threshold tone when the number of calls in the QCC queue is equal to or greater than the programmed threshold.

Considerations and Constraints

A system operating in the Hybrid/PBX mode can include both QCCs and DLCs (see Direct-Line Console). The system can have a total of eight system operators, which can include no more than four QCCs.

When a system includes QCCs, the first MLX module used to connect QCC(s) must be installed in the control unit to the left of any other type of module with station jacks. A QCC can be connected only on the first and fifth station jack on each MLX module.

Unless calls to unassigned extension numbers received on DID or dial-in tie trunks or from Remote Access users are programmed to go to a backup position, and the QCC queue is programmed as the backup position for these calls, assigning a QCC operator to receive the calls does not cause the calls to ring in to the queue.

Trunks cannot be programmed to ring both into the QCC queue and into a Calling Group.

Trunks assigned to ring into the QCC queue can also be assigned as Personal Lines on one or more telephones.

When a QCC operator wants to make an outgoing call, he or she should press the **Position Busy** button before pressing the **Hold** button for an existing call. This makes the console temporarily unavailable for calls from the queue. (The operator can receive calls forwarded or made to the operator's individual extension number.) If the operator presses only the **Hold** button, the position is still available for calls and a call can be delivered from the queue. Receipt of a call at this time can prevent the operator from making the outgoing call or cause the call ringing on the console to remain unanswered until the operator finishes the outgoing call.

Voice announcements do not come in over QCC speakerphones. QCCs cannot make voice-announced calls.

QCCs have no programmable buttons (all features are factory-set) and cannot use feature codes.

If a QCC operator receives a call and another user joins the call by using a shared Personal Line or **Shared SA** button, the QCC operator can press the **Start** button to begin the transfer process and press the **Join** button to connect all three parties in a conference call. However, the operator cannot release the call; the QCC operator sees the `Denied: Cannot Release` message on the screen.

When a QCC operator is assigned to receive calls on a tie trunk (excluding dial-in tie trunks), and the caller at the other system uses the trunk and dials 0, the call is treated as an unassigned DID call type. The QCC operator who receives the call sees `DID#` as the call type (along with the trunk label and trunk number) on the display, instead of seeing `Dial 0` as the call type.

Mode Differences

QCCs are only available in Hybrid/PBX mode.

Telephone Differences

Direct-Line Consoles

Both DLCs and QCCs can be assigned in the Hybrid/PBX mode. The maximum combined number of QCC operator positions is eight. No more than four can be QCCs.

In a system with both DLC and QCC positions, the *primary QCC operator position* must be a QCC.

All Dial 0 calls are directed to the QCC queue and do not ring at any DLC positions.

Feature Interactions

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| Account Code Entry | A QCC operator can use Account Code Entry only by selecting the feature from the display, not by using the feature code. Normally, account codes cannot be entered when a Group Coverage call is answered at a Coverage button programmed on a multiline telephone. However, when the QCC queue is programmed as the receiver for a Coverage Group, the QCC operator can enter account codes and the account code appears on the SMDR printout. This is because Coverage buttons are not required when the QCC queue is programmed as a receiver for a Coverage Group. |
| Alarm | An Alarm button is assigned as a fixed feature on the QCC. |
| Auto Answer All and Auto Answer Intercom | Auto Answer All and Auto Answer Intercom cannot be assigned to a QCC. |

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| Auto Dial | Auto Dial buttons cannot be programmed on a QCC. For one-touch dialing of extensions, the QCC operator can use the buttons on a DSS or the Extension Directory. In addition, the QCC operator can use the System Directory and Personal Directory for one-touch dialing of outside numbers. |
| Automatic Line Selection | Automatic Line Selection on a QCC is a fixed sequence that starts at the lowest Call button and moves upward. The sequence cannot be changed. |
| Barge-In | <p>Barge-In allows the QCC operator to contact a person who is busy on a call or using Do Not Disturb. Barge-In does not override Privacy. On a QCC, Barge-In can be used only by pressing the Feature button and selecting it from the display. Barge-In can be used to join only an inside call to a QCC. The caller's extension number must be dialed instead of the QCC operator's extension number.</p> <p>If a user tries to Barge-In after dialing a QCC operator's extension (while waiting in the QCC queue), the feature has no effect and the user hears an error tone. If the error tone times out while the call is still in the QCC queue, the call is disconnected. If the QCC operator becomes available before the error tone times out, the error tone is removed and the call is delivered to the QCC operator normally.</p> |
| Callback | Calls to QCCs are not eligible for Callback because the calls ring in to the QCC queue. Callback cannot be used on a QCC. |
| Calling Restrictions | Calling restrictions can be assigned to QCCs. |
| Camp-On | <p>A QCC operator can release a call to a busy extension by selecting <code>Camp-on</code> from the display or by pressing the Release button. If Camp-On is used, the call does not return to the QCC queue until the Camp-On return interval expires. If the operator presses the Release button, the extension being called receives the Call Waiting tone and the call returns to the QCC queue when the Transfer return interval expires.</p> <p>To use Camp-On when the system is programmed for automatic Extended Call Completion, the operator must press the Start button, dial the extension manually, then press the Camp-On button. If the QCC operator presses a DSS button, the transfer is completed automatically and Camp-On cannot be used.</p> |

Conference

When a QCC operator arranges a conference call on a QCC, all conference participants (a maximum of 5) are connected on one **Call** button. This allows the QCC operator to put the conference on hold and still have other **Call** buttons available to make or receive calls. However, since all participants are on one **Call** button, the operator can drop only the last person added to the conference by pressing the **Drop** button and the **Call** button for the conference.

When a QCC operator arranges a 3-participant conference (the QCC operator and two other participants) and then presses the **Release** button or hangs up, the QCC operator is released from the call and the other two participants remain connected.

If the QCC operator arranges a 4- or 5-participant conference, pressing the **Release** button is ignored and has no effect. If the QCC operator hangs up or presses the **Hold** button, the the QCC operator is released and the remaining conference participants remain connected. The **Forced Release** button can be used to disconnect all parties from the call.

Coverage

An individual QCC cannot be a sender or receiver for Individual or Group Coverage. However, the QCC queue can be a receiver for 1–30 Coverage groups by assigning one or more QCC operators to receive the calls. The QCC queue can be assigned as a receiver in addition to multiline telephones programmed with **Group Coverage** buttons; however, the QCC queue is not counted in the eight-receiver maximum for each Coverage Group. The QCC Queue Priority and the individual QCC operator to receive Group Coverage calls are set independently for each group.

When the QCC queue is programmed as a receiver for a Coverage Group and a Personal Line on a Coverage Group member's telephone is also programmed to ring in to the QCC queue, calls received on that Personal Line are not sent to the queue as Coverage calls. However, calls received on the Personal Line can be sent to multiline telephone Group Coverage receivers.

If **Group Coverage** buttons are programmed for a Coverage Group in addition to the QCC queue, and all QCC operators are in Position Busy mode, a Group Coverage call does not go to the backup Calling Group.

When the QCC queue is programmed as a receiver for a Coverage Group and a call transferred to a group member is not answered, the call is returned to the queue as a transfer return if the QCC Return Ring Interval is shorter than the Coverage Delay Interval. If the QCC Return Ring Interval is longer than the Coverage Delay Interval, the call returns to the QCC queue as a Group Coverage call.

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| Directories | <p>QCC operators use Directory features to dial extensions or telephone numbers with the touch of a button. The Extension Directory allows the operator to locate and dial system extension numbers. The System Directory and Personal Directory can be used to locate and dial outside numbers.</p> <p>Directory features can be used for extending calls. However, if a QCC operator releases the call immediately after pressing the button for the listing, the caller hears the dial tone plus the touch-tones for the dialed digits. If the operator waits until after dialing begins, the caller does not hear the dial tone and dialed digits.</p> |
| Disallowed Lists | <p>Disallowed Lists can be assigned to QCCs.</p> |
| Display | <p>Features not assigned to buttons on the QCC can be activated only by selecting them from the display. The QCC operator also uses the display for call information such as the person or extension calling, trunk identifiers, reasons for call return and redirection, and the number of calls waiting in the queue.</p> <p>In a split condition, the QCC operator sees information about both the source and destination. If the operator presses the Home button while in the split condition, the information is replaced with information about the source only. The operator can restore the information by pressing the Source and Destination buttons or by pressing the Inspect button followed by the Source or Destination button.</p> |
| Do Not Disturb | <p>Do Not Disturb cannot be used on a QCC; the operator must use Position Busy instead.</p> <p>The red LED next to a DSS button goes on when a user turns on Do Not Disturb.</p> |
| Extension Status | <p>Extension Status cannot be used on a QCC and a QCC cannot be a Calling Group or CMS supervisor, or a Calling Group member.</p> |
| Forced Account Code Entry | <p>Forced Account Code Entry can be assigned to a QCC. However, a QCC operator can use Account Code Entry only by selecting the feature from the display, not by using the feature code.</p> |
| Forward and Follow Me | <p>A QCC operator cannot forward calls to extensions or telephone numbers. The operator instead uses Position Busy to send calls to a backup Calling Group.</p> <p>Calls that are forwarded to an individual QCC operator or Follow Me calls that are signed in to a QCC can be assigned a Queue Priority Level. When the QCC operator uses Position Busy, forwarded calls and Follow Me calls signed in to the QCC position continue to ring at the QCC.</p> |

- Group Calling** Only a Calling Group can be programmed to provide Position Busy Backup when all QCC operators activate Position Busy. If no Calling Group is designated to provide backup, the system does not allow the last QCC operator to activate Position Busy. A QCC cannot be a member of a Calling Group. A Calling Group can be a backup for calls in the QCC queue when all QCC operators are in the Position Busy state. The QCC queue can be designated to provide Overflow Coverage for calls from one or more Calling Groups. When an overflow call is sent to the QCC queue, it cannot be distinguished as a call to a Calling Group.
- When the QCC queue is providing Overflow Coverage for a Calling Group and all QCC operators are in Position Busy state, overflow calls do not receive Position Busy Backup (are not redirected to a second Calling Group providing Position Busy Backup for the QCC queue) and continue to wait in the original Calling Group queue.
- If all QCC operators activate Position Busy while an overflow call is in the QCC queue, the call is rerouted to the original Calling Group, not to the Calling Group providing Position Busy Backup.
- If a QCC operator switches out of Position Busy while a backup call is in the Calling Group queue or has already been delivered to a Calling Group member, the call does not go back into the QCC queue.
- HFAI** The **HFAI** (Hands Free Answer on Intercom) button does not work on a QCC.
- Headset Options** Headset Auto Answer, Headset/Handset Mute, and Headset Status are assigned as fixed features on buttons on a QCC. Headset Hang Up cannot be programmed on a QCC.
- The function of disconnecting calls served by the Headset Hang Up feature is replaced with Release, Forced Release, Camp-On, and Automatic Release via **DSS** buttons on the QCC.
- Hold** Pressing the **Hold** button to put a caller on hold makes the QCC operator available for incoming calls from the QCC queue. The DLC Operator Automatic Hold feature is not used for QCCs.

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| Inspect | <p>When a conference participant joins a conference call by using a shared outside line or a Shared SA button, the QCC display reflects the correct number of participants. However, if the QCC operator uses the Inspect feature to verify the number of participants, the number shown on the display does not include participants joining the conference call on Shared SA buttons.</p> <p>Pressing any of the buttons programmed with fixed QCC features (for example, a Call, Start, or Source button) while in the Inspect mode does not remove the console from the Inspect mode. However, pressing the Feature, Transfer, HFAI, Conference, Drop, Speaker, or Hold button does remove the console from the Inspect mode.</p> |
| Last Number Dial | <p>Last Number Dial cannot be used on a QCC.</p> |
| Line Request | <p>Line Request cannot be used on a QCC.</p> |
| Messaging | <p>A QCC operator can use Leave Message only by selecting the feature from the display. A Send/Remove Message button is programmed as a fixed feature on a QCC.</p> |
| Microphone Disable | <p>The microphone on a QCC is automatically disabled and cannot be enabled.</p> |
| Multi-Function Module | <p>An MFM cannot be connected to an MLX-20L telephone assigned as a QCC. As a result, adjuncts such as answering machines and fax machines cannot be used with the console.</p> |
| Night Service | <p>A Night Service button is assigned as a fixed feature on a QCC.</p> <p>If more than one QCC operator is assigned to receive calls on an individual trunk, Night Service must be turned on at all assigned positions before calls coming in on the trunk can ring on telephones programmed as members of the Night Service group. If Night Service is not turned on at all of the QCC positions programmed to receive the calls, after-hours calls ring at that position and do not receive Night Service treatment.</p> <p>When Night Service is on, unassigned DID extension and Listed Directory Number call types cannot be removed via system programming from ringing in to the QCC queue. If these call types are programmed not to go to the queue, when Night Service is off, callers hear an error tone.</p> |

When multiple Night Service calls are received in the QCC queue at the same time and none of the calls are answered by a Night Service member (all group member **ICOM** or **SA** buttons are busy), new calls are sent to the QCC queue and can be answered only by the QCC operator. To avoid this situation, it is recommended that all outside lines assigned to ring in to the QCC queue be assigned as Personal Lines on at least one group member's telephone.

Paging

A QCC cannot make or receive voice-announced inside calls (speakerphone calls to an individual extension). A QCC cannot be a member of a Speakerphone Paging Group. A QCC operator can use a Loudspeaker Paging system only by selecting the feature from the display and can use the Group Page feature by selecting a **Call** button and pressing the **DSS** button or dialing the extension for the Paging Group.

Park

Eight park dial codes are automatically reserved for parking calls from a QCC. The factory-set extension numbers are 881–888. To assign the Park Zones to a DSS connected to a QCC, the extension numbers must be in the range programmed for the **Page** buttons.

A QCC operator with a DSS parks a call by pressing the **DSS** button for the Park Zone or by pressing the **Start** button and then the DSS button. The call is automatically parked. (The operator does not need to press the **Release** button.) A QCC operator without a DSS cannot park calls.

To pick up a parked call, the QCC operator presses the **Feature** button and selects `PickUp` from the display, then dials the extension number for the telephone or Park Zone where the call is parked.

Calls parked by QCC operators can be programmed to return to the QCC operator who parked the calls and/or to another QCC operator. Returning parked calls are also assigned a QCC Queue Priority Level (the factory setting is 4). With Message Center Operation, a call parked by a QCC operator can be returned to the Message Center position.

Personal Lines

Personal Lines cannot be assigned to a QCC.

Pickup

A QCC can be a member of a Pickup Group. QCC operators can only use Individual Pickup and Group Pickup by selecting them from the display. Individual Pickup and Group Pickup are included on the Home screen on QCCs.

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| Pools | <p>Pool buttons cannot be assigned to a QCC, but a QCC operator can select pools to make outgoing calls by pressing a Call button and dialing the ARS or pool dial-out code. A QCC operator can be assigned to receive calls on trunks assigned to pools.</p> <p>A Pool Status button is assigned as a fixed feature button on a QCC and provides the QCC operator with the status of all the trunk pools (a maximum of 11). The QCC operator presses the Inspect button, followed by the Pool Status button, and the busy or available status of trunk pools is shown on the display.</p> |
| Privacy | A QCC operator cannot use Privacy. |
| Recall | A Recall button cannot be programmed on a QCC. |
| Reminder Service | Reminder Service cannot be used on a QCC. |
| Remote Access | <p>If a Remote Access user does not enter the required digits within the timeout period or dials an invalid extension number, the call can be directed to one or more QCC operators and/or to the Message Center if so programmed.</p> <p>One or more QCC operators can be assigned to receive calls on trunks assigned with Shared Remote Access. Calls received on trunks that are assigned Shared Remote Access receive Remote Access treatment only when all QCC operators who are assigned to receive calls on Shared Remote Access trunks turn on Night Service. If Night Service is turned off by one or more QCC operators assigned to receive the calls, calls ring in to the QCC queue normally and do not receive the Remote Access treatment.</p> |
| Ringling/Idle Line Preference | Ringling/Idle Line Preference is turned on and cannot be turned off on a QCC. |
| Ringling Options | <p>Personalized Ringling cannot be programmed on a QCC, nor can Ringling Options be adjusted on a QCC. The Call buttons are fixed to Immediate Ring. A QCC only receives two types of Distinctive Ringling—one ring for an inside call and two rings for an outside call. A QCC does not receive the three rings that indicate a returning transferred call.</p> |
| Saved Number Dial | Saved Number Dial cannot be used on a QCC. |

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| Signaling | <p>Notify and Signaling buttons cannot be used on a QCC. However, pressing a DSS button sends a manual signal to the extension associated with the DSS button in the following instances:</p> <ul style="list-style-type: none"> ■ The QCC operator is timed out from dial tone on a Call button or has pressed the Forced Release button while listening to dial tone on a Call button. ■ The QCC operator, in a split condition, pressed the Source button after contacting the destination but did not connect both parties by using the Join button. If the operator presses a DSS button, a manual signal is sent to the destination extension. |
| Speed Dial | <p>Personal Speed Dial and System Speed Dial cannot be used to dial numbers on a QCC. The Directory features can be used instead.</p> |
| SMDR | <p>When a QCC operator arranges a 3-party conference (the operator and two other participants) and presses the Release button, the operator is released from the call and the other two participants remain connected. Although this process is similar to transferring a call, the QCC operator's extension remains on the SMDR record.</p> |
| System Access/ Intercom Buttons | <p>SA buttons are not assigned on a QCC. The QCC operator uses Call buttons to make and receive inside and outside calls.</p> |
| System Renumbering | <p>The Listed Directory Number (the extension number for the QCC queue) can be renumbered. The factory-set extension is 800.</p> |
| Transfer | <p>The QCC operator uses the Start and Release buttons or a DSS button to transfer calls. However, pressing the Transfer button on a QCC is the same as pressing the Start button. A QCC operator cannot make or receive voice-announced transfers. When the operator uses the Start and Release buttons to transfer a call, the Return Ring Interval applies for transfer return timing instead of the Transfer Return Interval.</p> |
| Voice Announce to Busy | <p>Voice announcements cannot be received on a QCC. Voice Announce to Busy cannot be turned on at a QCC.</p> |

Recall/Timed Flash

At a Glance

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| Users Affected | Telephone users, DLC operators |
| Reports Affected | Extension Information System Information |
| Mode | All |
| Telephones | All except QCC |
| Programming Code | |
| Recall | *775 |
| Conference | *772 (Behind Switch mode only) |
| Drop | *773 (Behind Switch mode only) |
| Transfer | *774 (Behind Switch mode only) |
| Feature Code | 775 |
| MLX Display Label | Recall [Rec11] |
| System Programming | Change timed flash duration (Recall Timer): ● Options → More → RecallTimer Program fixed Conference , Drop , and Transfer buttons to access host features in Behind Switch mode: ● Options → More → BehndSwitch → Conference/Drop/Transfer |
| Factory Settings | |
| Recall Timer | 450 ms (range 350 ms, 450 ms, 650 ms, 1 sec) |

Description

Recall sends a momentary on-hook signal called a *timed flash*, or *switchhook flash*. A timed flash is used as a control signal, as follows:

- On an inside call, the signal is intercepted by the control unit.
 - A multiline telephone user can use Recall to disconnect a call and get a new dial tone without hanging up. The user can be on an active call or listening to ringback or dial tone. When the user is listening to a busy signal, Recall has no effect.
 - A single-line telephone user can use Recall to put an active call on hold and access system features such as Conference and Transfer.

- On an outside call, when the system is using host switch services such as Centrex, the signal may be sent to the host, depending on the type of telephone and system operating mode.
 - A multiline telephone user can use Recall to access host features. The user can be connected to another party or can be listening to outside dial tone, ringback, or a busy signal.
 - A single-line telephone user can use Recall to access host services only if the system is programmed for the Behind Switch mode of operation,

Recall is used by pressing a fixed or programmed **Recall** button or dialing the Recall feature code. The Recall Timer, which specifies the duration of the switchhook flash, is set through system programming. The duration required by the host switch is specified by the local telephone company.

The Recall Timer should be reset if multiline telephone users experience either of the following problems:

- When the user presses the **Recall** button on an outside call, nothing happens. This indicates that the interval is too short and should be increased to 650 milliseconds or 1 second.
- In a system operating in Behind Switch mode, when the user presses the **Recall** button on an outside call, the call is disconnected. This indicates that the interval is too long and should be decreased to 350 ms.

Release Differences

Release 1.0 or Release 1.1

Recall can be used on an outside call only if the call has been made or received on a Personal Line or **Pool** button. Recall cannot be used on an outside call made or received on an **SA** or **ICOM** button.

Release 2.0 (or Later)

In addition to calls made or received on a Personal Line button or a **Pool** button, Recall can be used on an outside call made or received on an **SA** (including **Shared SA**) or **ICOM** button. This includes the following kinds of calls:

- Transferred calls, Group Calling, and forwarded calls received on an **SA** or **ICOM** button.
- Automatic Route Selection (ARS) calls and calls made using a pool dial-out code (on **SA** buttons) or using the Idle Line Access code (on **ICOM** buttons).

When used after dialing is completed on an outside trunk, Recall sends a timed flash to the host switch, the trunk is kept, the user hears a new outside dial tone, and calling restrictions are reapplied. On an ARS call or a call on a rotary-dial trunk, Recall cannot be used until dialing is completed. On a call made using the pool dial-out code, Recall can be used during, as well as after, dialing.

Considerations and Constraints

Recall can be used to send a timed flash to the host switch only on a loop-start trunk.

The **Recall** button sends a switchhook flash. It is not a “redial” button.

Mode Differences

Hybrid/PBX Mode

In a Release 1.0 or Release 1.1 system, Recall cannot be used on any outside call made or received on an **SA** button. In a Release 2.0 (or later) system, this restriction is removed.

A Recall signal from a single-line telephone accesses the communications system's Hold, Conference, and Transfer features.

Key Mode

In a Release 1.0 or Release 1.1 system, Recall cannot be used on any outside call made or received on an **ICOM** button. In a Release 2.0 (or later) system, this restriction is removed.

A Recall signal from a single-line telephone accesses the communications system's Hold, Conference, and Transfer features.

Behind Switch Mode

If Recall is used on a call made or answered on the Prime Line, the timed flash is sent to the host switch.

The fixed **Conference**, **Drop**, and **Transfer** buttons on an MLX or analog multiline telephone must be programmed through system programming to send a timed flash plus the code expected by the host to activate those features on the host. Once this programming is done, these fixed buttons have no effect when pressed during an internal call.

if use of the communications system Conference, Drop, and Transfer features is also desired, they must be programmed on available line buttons on each multiline telephone through extension programming or centralized telephone programming. (These three options are not available in Hybrid/PBX or Key mode.)

In a Release 1.0 or Release 1.1 system, Recall cannot be used on any outside call made or received on an **ICOM** button. In a Release 2.0 (or later) system, this restriction is removed.

A Recall signal from a single-line telephone is ordinarily sent to the host switch, since the factory setting for the Automatic Line Selection (ALS) sequence selects the Prime Line. However, if the ALS sequence has been changed to select an **ICOM** button and the user has used the Idle Line Access code to initiate a call, the Recall signal accesses the communications system's Hold, Conference, and Transfer features, not those of the host switch.

Telephone Differences

Queued Call Consoles

A Queued Call Console (QCC) cannot use Recall — a **Recall** button cannot be programmed on the QCC, nor can the QCC use the Recall feature code.

Other Multiline Telephones

Analog multiline BIS telephones have a fixed Recall button which can be pressed to use the Recall feature.

MLX telephone users and MLC-5 cordless telephone users can use Recall by pressing the **Feature** button and dialing **775**, but it is recommended that a **Recall** button be programmed on the telephone instead.

The fixed **Conference**, **Drop**, and **Transfer** buttons on an MLX or analog multiline telephone must be programmed through system programming to send a timed flash plus the code expected by the host to activate those features on the host. Once this programming is done, these fixed buttons have no effect when pressed during an internal call.

If use of the communications system Conference, Drop, and Transfer features is also desired, they must be programmed on available line buttons on each multiline telephone through extension programming or centralized telephone programming. (These three options are not available in Hybrid/PBX or Key mode.)

Single-Line Telephones

Single-line telephone users without a **Recall** button must use the switchhook to send a timed flash. The communications system intercepts the signal; if it is to be sent on to a host switch, the system sends a signal of the duration programmed for the Recall Timer.

In Hybrid/PBX or Key mode, a Recall signal from a single-line telephone accesses the communications system's Hold, Conference, and Transfer features.

In Behind Switch mode, a Recall signal from a single-line telephone is ordinarily sent to the host switch, since the factory setting for the Automatic Line Selection (ALS) sequence selects the Prime Line. However, if the ALS sequence has been changed to select an **ICOM** button and the user has used the Idle Line Access code to initiate a call, the Recall signal accesses the communications system's Hold, Conference, and Transfer features, not those of the host switch.

NOTE:

- If a single-line telephone with a timed disconnect is used, pressing the switchhook disconnects the call. With this type of telephone, the **Recall** button must be used instead of the switchhook for features that require a switchhook flash.
- Some single-line telephones have factory-imprinted **Recall**, **Hold**, or **Flash** buttons that activate telephone features different from features of the system. A single-line telephone user without a **Recall** button, or with buttons that activate telephone-only features, must press and release the switchhook to send a timed flash.

Feature Interactions

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|--|--|
| Allowed Lists, Disallowed Lists, and Calling Restrictions | If Recall is used on a Personal Line or Pool button, or, in a Release 2.0 (or later) system, on an SA or ICOM button used to access an outside loop-start trunk, the accessed trunk is kept, the user hears outside dial tone, and calling restrictions are reapplied. |
| Auto Dial | The Conf button is used to enter the Flash special character, which simulates pressing the Recall button, in a telephone number programmed on an Auto Dial button. If Recall is used during an internal call made on an Auto Dial button, the call is disconnected and the user hears internal dial tone. |
| Automatic Route Selection | In a Release 2.0 (or later) system, Recall can be used on an ARS call. Recall cannot be used during dialing. When dialing is completed, pressing the Recall button sends a timed flash to the host, the accessed trunk is kept, the user hears outside dial tone, and calling restrictions are reapplied. In a Release 1.0 or Release 1.1 system, Recall cannot be used on an ARS call, since the call is made on an SA button. |

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| Barge-In | <p>In a Release 2.0 (or later) system, Recall can be used by the user who has joined a call by using Barge-In, as well as by the user who was barged into.</p> <p>In a Release 1.0 or Release 1.1 system, Recall cannot be used with Barge-In, since Barge-In is used on an SA or ICOM button.</p> |
| Callback | <p>If Recall is used while the user is off-hook with a queued Callback request, the call is disconnected and the user hears dial tone.</p> |
| Call Waiting | <p>If Recall is used while the user is hearing special ringback, the call is disconnected and the user hears internal dial tone.</p> |
| Conference | <p>The Conf button is used to enter the Flash special character, which simulates pressing the Recall button, in telephone numbers programmed for Directories, Auto Dial buttons, or Speed Dial codes.</p> <p>In Hybrid/PBX and Key modes, a single-line telephone user with a Recall button can add a participant to a conference call and connect all participants by using the Recall button. In addition, the Recall button can be used to drop the most recently added participant or to drop a busy number.</p> <p>In Behind Switch mode, the fixed Conference button on an MLX or analog multiline telephone must be programmed through system programming to send a timed flash plus the code expected by the host switch to activate Conference on the host. If use of the communications system Conference feature is also desired, it must be programmed on an available line button on each multiline telephone through extension programming or centralized telephone programming.</p> <p>Recall has no effect on a completed conference call.</p> |
| Coverage | <p>Recall has no effect on a call answered on a Primary Cover, Secondary Cover, or Group Cover button.</p> <p>In a Release 2.0 (or later) system, Recall can be used on a Group Coverage call answered by a member of a Calling Group. In a Release 1.0 or Release 1.1 system, Recall cannot be used on a call of this type, since it is answered on an SA or ICOM button.</p> |
| Directory | <p>The Conf button is used to enter the Flash special character, which simulates pressing the Recall button, in a directory listing telephone number.</p> |
| Forward/ Follow Me | <p>A multiline telephone user who has received a Forward or Follow Me call can use Recall if the call is an inside call. In a Release 2.0 (or later) system, Recall can also be used on an outside call received on a loop-start trunk.</p> |

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| Group Calling | A user who has received a Group Calling call can use Recall if the call is an inside call. In a Release 2.0 (or later) system, Recall can also be used on an outside call received on a loop-start trunk. |
| Hold | A single-line telephone user with a Recall button can press Recall to put a call on hold. |
| Multi-Function Module | An MFM cannot send a timed flash. As a result, a single-line telephone or other device connected to an MFM cannot use Recall. |
| Last Number Dial | Recall can be used on a call made using Last Number Dial on a Personal Line or Pool button (loop-start only), an inside call, or, in a Release 2.0 (or later) system, an outside call made on a loop-start trunk using an SA or ICOM button. |
| Night Service | A user (except a QCC operator) who has received a Night Service call can use Recall if the call is an inside call. In a Release 2.0 (or later) system, Recall can also be used on an outside call received on a loop-start trunk. |
| Park | A single-line telephone user can use Park if the telephone has a Recall button. |
| Personal Lines | Recall can be used by either inside party when two users have joined an outside call on a shared Personal Line (loop-start only). |
| Pools | If a user presses the Recall button during or after dialing, a timed flash is sent to the host switch, the accessed trunk is kept, the user hears outside dial tone, and calling restrictions are reapplied. |
| Privacy | A single-line telephone user with a Recall button can use the button to turn Privacy on or off during a call. |
| Reminder Service | Recall can be used to disconnect an answered Reminder Service call and return the user to internal dial tone. |
| Saved Number Dial | Recall can be used on a call made using Saved Number Dial on a Personal Line or Pool button (loop-start only), an inside call, or, in a Release 2.0 (or later) system, an outside call made on a loop-start trunk using an SA or ICOM button. |
| SMDR | Each time Recall is used on a call, a new SMDR record is generated. For example, if a user is active on a call and uses Recall to initiate a conference call, SMDR timing is stopped for the original call and a new record is begun. If the user then calls a second party and uses Recall again to join the conference parties, a third SMDR record is generated with an empty CALLED NUMBER field. |

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| Speed Dial | The Conf button is used to enter the Flash special character, which simulates pressing the Recall button, in a Personal Speed Dial or System Speed Dial telephone number. |
| System Access/ Intercom Buttons | <p>Recall can be used on a ringing or answered inside call made on an SA or ICOM button. The call is disconnected and the user hears internal dial tone. When the user is listening to a busy signal, Recall has no effect.</p> <p>Recall can be used by either the user with the principal SA button or by the user with a Shared SA button who has joined the call. In a Release 2.0 (or later) system, this includes an outside call on a loop-start trunk that was made or received on the SA or Shared SA button.</p> |
| Transfer | <p>A single-line telephone user with a Recall button can use it to transfer a call.</p> <p>In a Release 2.0 (or later) system, Recall can be used on a transferred outside call on a loop-start trunk, since the transfer is received on an SA or ICOM button.</p> <p>In Behind Switch mode, the fixed Transfer button on an MLX or analog multiline telephone must be programmed through system programming to send a timed flash plus the code expected by the host switch to activate Transfer on the host. If use of the communications system Transfer feature is also desired, it must be programmed on an available line button on each multiline telephone through extension programming or centralized telephone programming.</p> |

Reminder Service

At a Glance

| | |
|--------------------|--|
| Users Affected | Telephone users, DLC operators |
| Reports Affected | Extension Information System Information |
| Mode | All |
| Telephones | All except QCC |
| Programming Code | |
| Set | *81 |
| Cancel | **81 |
| Missed Reminder | *752 (operators only) |
| Feature Code | |
| Set (users) | 81 + <i>time</i> + a or p (see NOTE) |
| Set (operators) | 81 + Auto Dial or DSS + <i>time</i> + a or p (see NOTE) |
| Cancel (users) | *81 |
| Cancel (operators) | *81 + Auto Dial or DSS |
| MLX Display Label | |
| Set | Reminder,Set [Rmind,Set] |
| Cancel | Reminder,Cancel [Rmind,Cancel] |
| Missed Reminder | Reminder,Missed [Rmind,Missd] |
| System Programming | Set time of day when all reminders are automatically canceled: ● Options → ReminderSrv |

NOTE:

In Releases 1.1 and 2.0 and later, do not use the **a** or **p** on telephones programmed for French or Spanish; on these telephones, time is entered in 24-hour format. In Release 1.0, time *must* be entered in the 12-hour format, using the **a** or **p**, for telephones programmed in English, French, or Spanish.

NOTE:

This feature must be used with **Auto Dial** buttons on a Direct Station Selector (DSS). Operators cannot enter Reminder Service extensions from the dialpad.

Description

With Reminder Service, users can arrange for the system to make Reminder calls at preset times. Users can set and cancel Reminder Service for their own telephones. Direct-Line Console (DLC) system operators can set and cancel Reminder Service for any telephone in the system (for example, to alert several telephones as a reminder for a meeting or, in a hotel or motel, for wake-up call service).

When Reminder Service is set for a telephone, the system makes an inside call to the telephone at or close to the preset time (reminder calls may arrive up to three minutes before or after the set time). The call rings for 30 seconds or until the telephone is answered. When the call is answered, Reminder Service is canceled for that telephone.

If a reminder call is not answered or the telephone is busy, it is considered a Missed Reminder. If Reminder Service has been set and the call is not answered, the green LED flashes next to the **Missed Reminder** button on the operator's console.

The system operator with a display console can press the **Missed Reminder** button to display any Missed Reminder Call messages. This message identifies the name and extension of the missed reminder call, along with the set time for the reminder. The green LED next to the **Missed Reminder** button lights steadily while Missed Reminder Call messages are being read. After the messages have been read, the system operator can use Reminder Service to resend a reminder call to an extension. The system operator can then clear the missed reminder by pressing the **Missed Reminder** button and the **Reminder Cancel** button.

Through system programming, all outstanding reminders can be canceled by the system at a preset time every day—for example, after business hours when all users are not available to answer reminder calls.

Considerations and Constraints

The system time must be set to use Reminder Service.

Missed Reminder buttons can be programmed only on system operator display consoles because the display is needed to show which reminder was missed. The system operator's console must have a Direct Station Selector (DSS) adjunct button to activate this feature, or must have an inside **Auto Dial** button to access extensions. This feature cannot be used by dialing the extension from the dialpad.

Reminder Set cannot be used to set a reminder time when the green LED next to the **Missed Reminder** button is steadily on. (This indicates that the system operator can read missed reminder messages.)

Only one reminder can be set for a telephone at a time.

Reminders do not carry over to the next day; they are sent only once and are either received or missed.

Missed reminders can be canceled only by a system operator. A missed reminder stays on the system until canceled.

Reminder Service uses system time, which can differ from the time set by the user with an analog multiline display telephone.

If a time for a reminder was previously set, it is shown on display telephones when the **Reminder Service** button is pressed.

Telephone Differences

Direct-Line Consoles

DLC operators can use Reminder Service to set or cancel reminders for other users. A system operator with a DLC sets Reminder Service for another telephone by:

1. Pressing a programmed **Reminder Set** button or pressing the **Feature** button and dialing **81**,
2. Pressing an **Auto Dial** or **DSS** button
3. Dialing a 4-digit time, **0100** to **1259** and either **2** for a.m. or **7** for p.m. on telephones programmed for English, or (in Releases 1.1 and 2.0 and later) **0000** to **2359** on telephones programmed for French or Spanish.

NOTE:

In Release 1.0, on telephones programmed for English, French, or Spanish, time must be programmed in 12-hour format only.

To cancel a reminder for another telephone, the system operator presses a programmed **Reminder Cancel** button or presses the **Feature** button and dials ***81**, and then uses an **Auto Dial** or **DSS** button.

The system operator can also see when a reminder was missed and cancel missed reminders. The **Missed Reminder** button can be programmed on DLC operator consoles only.

Queued Call Consoles

Reminder Service cannot be used on a Queued Call Console (QCC).

Other Multiline Telephones

Reminder Service cannot be used on MLC-5 cordless telephones.

Multiline telephone users set Reminder Service for their telephones by pressing a programmed **Reminder Set** button or pressing the **Feature** button and dialing **81**, and then entering a 4-digit time. Time is entered as follows:

- In Release 1.0, on telephones programmed for English, Spanish, or French, the user enters the time in 12-hour format in the range from **0100** to **1259** and either **2** for a.m. or **7** for p.m.
- In Releases 1,1 and 2.0 and later:
 - On telephones programmed for English, the user enters the time in 12-hour format in the range from **0100** to **1259** and either **2** for a.m. or **7** for p.m.
 - On telephones programmed for French or Spanish, the user enters the time in 24-hour format in the range from **0000** to **2359**.

To cancel a reminder, the user presses a programmed **Reminder Cancel** button or presses the **Feature** button and dials ***81**.

Single-Line Telephones

Single-line telephone users set the Reminder Service for their telephones by lifting the handset and (while listening to inside dial tone) dialing **#81** and a 4-digit time (0100-1259) and either **2** for a.m. or **7** for p.m. To cancel a reminder, the user lifts the handset and (while listening to inside dial tone) dials **#*81**.

Feature Interactions

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|--|---|
| Callback | Reminder Service calls cannot be queued by using Callback. |
| Call Waiting | Reminder Service calls are not eligible for Call Waiting. |
| Coverage | Reminder Service calls are not eligible for Individual or Group Coverage. |
| Do Not Disturb | Reminder calls ring at telephones with Do Not Disturb activated. |
| Ringling Options | A Reminder Service call overrides programmed Ring Timing Options (Delay Ring and No Ring) and rings with a priority ring at an SA or ICOM button. |
| System Access/ Intercom Buttons | A Reminder Service call overrides programmed Ring Timing Options (Delay Ring and No Ring) and rings at the principal extension; Reminder Service calls do not ring at Shared SA buttons. |

Remote Access

At a Glance

| | |
|--------------------|---|
| Users Affected | Telephone users, operators |
| Reports Affected | Remote Access (DISA) Information |
| Mode | All |
| Telephones | Touch-tone only |
| System Programming | <p>Assign Dedicated or Shared Remote Access to trunks:</p> <ul style="list-style-type: none"> ● LinesTrunks → RemoteAccss → LinesTrunks <p>If barrier codes are not used, assign class of restrictions to trunks:</p> <ul style="list-style-type: none"> ● LinesTrunks → RemoteAccss → Non-Tie/ Tie Lines → Restriction/ARS Restrct/ AllowList/DisallowList <p>Assign barrier codes and change class of restriction for each barrier code:</p> <ul style="list-style-type: none"> ● LinesTrunks → RemoteAccss → BarrierCode → Restriction/ARS Restrct/AllowList/ DisallowList <p>Specify that barrier codes are required for Remote Access:</p> <ul style="list-style-type: none"> ● LinesTrunks → RemoteAccss → Non-Tie/ Tie Lines → BarrierCode <p>Add, change, or remove individual barrier codes:</p> <ul style="list-style-type: none"> ● LinesTrunks → RemoteAccss → BarrierCode → Codes <p>Assign barrier codes to Remote Access system programming trunks:*</p> <ul style="list-style-type: none"> ● LinesTrunks → RemoteAccss → BarrierCode → SProgMaint <p>Enable or disable Callback for busy pools:</p> <ul style="list-style-type: none"> ● LinesTrunks → RemoteAccss → AutoQueuing <p>Specify destination of Remote Access calls to unassigned numbers:</p> <ul style="list-style-type: none"> ● Options → More → Unassigned <p>Change Remote Access code:</p> <ul style="list-style-type: none"> ● SysRenumber → Single → RemoteAccs |
| Maximums | 16 barrier codes, 4 digits each |

Continued on next page

* This program selection is not currently functional.

At a Glance *(continued)*

| | |
|--|--------------------|
| Factory Settings | |
| ARS Facility Level for Barrier Codes or Trunks | 0 |
| Autoqueuing | Disabled |
| Call Restriction for Barrier Codes or Trunks | Outward Restricted |
| Maintenance/Programming Barrier Code | 1 6 |
| Redirect Destination for Calls to Unassigned Numbers | Primary Operator |
| Remote Access Code | 889 |

**CAUTION:****Security of Your System**

As a customer of a new telephone system, you should be aware that there exists an increasing problem of telephone toll fraud. Telephone toll fraud can occur in many forms, despite the numerous efforts of telephone companies and telephone equipment manufacturers to control it. Some individuals use electronic devices to prevent or falsify records of these calls. Others charge calls to someone else's number by illegally using lost or stolen calling cards, billing innocent parties, clipping on to someone else's line, and breaking into someone else's telephone equipment physically or electronically. In certain instances, unauthorized individuals make connections to the telephone network through the use of remote access features.

The Remote Access feature of your system, if you choose to use it, permits off-premises callers to access the system from a remote telephone by using an 800 number or a 7-or 10-digit telephone number. The system returns an acknowledgement signaling the user to key in his or her authorization code, which is selected and administered by the system manager. After the authorization code is accepted, the system returns dial tone to the user. If you do not program specific egress restrictions, the user will be able to place any call normally dialed from a telephone associated with the system. Such an off-premises network call is originated at, and will be billed from the system location.

The Remote Access feature, as designed, helps the customer, through proper administration, to minimize the ability of unauthorized persons to gain access to the network. Most commonly, phone numbers and codes are compromised when overheard in a public location, through theft of a wallet or purse containing access information, or through carelessness (writing codes on a piece of paper and improperly discarding it). Additionally, hackers may use a computer to dial an access code and then publish the information to other hackers. Enormous charges can be run up quickly. It is the customer's responsibility to take the appropriate steps to properly implement the features, evaluate and administer the various restriction levels, protect access codes, and distribute access codes only to individuals who have been fully advised of the sensitive nature of the access information.

Common carriers are required by law to collect their tariffed charges. While these charges are fraudulent charges made by persons with criminal intent, applicable tariffs state that the customer of record is responsible for payment of all long-distance or other network charges. AT&T cannot be responsible for such charges and will not make any allowance or give any credit for charges that result from unauthorized access.

To minimize the risk of unauthorized access to your communications system:

- *Use a nonpublished Remote Access number.*
- *Assign authorization codes randomly to users on a need-to-have basis, keeping a log of ALL authorized users and assigning one code to one person.*
- *Use random sequence authorization codes, which are less likely to be easily broken.*
- *Deactivate all unassigned codes promptly.*
- *Ensure that Remote Access users are aware of their responsibility to keep the telephone number and any authorization codes secure.*
- *When possible, restrict the off-network capability of off-premises callers, via use of Call Restrictions and Disallowed List capabilities.*
- *When possible, block out-of-hours calling.*
- *Frequently monitor system call detail reports for quicker detection of any unauthorized or abnormal calling patterns.*
- *Limit Remote Call Forward to persons on a need-to-have basis.*

Description

The Remote Access feature allows employees to dial into the system by dialing the number of a trunk designated for Remote Access. The remote user should be required to dial a barrier code (password) after reaching the system. After gaining access to the system, the remote user can do any of the following:

- Dial extension numbers directly without going through the system operator. Remote callers can call internal telephones, data terminals, or calling groups just as if they were calling from an extension within the system.
- Select a regular or special-purpose outside line (for example, a WATS line) or a pool or Automatic Route Selection (ARS) line to make outgoing calls. If the pool is busy, the system can be programmed to allow the remote user to use Callback to put a call in queue for the busy pool.
- Arrange to have calls forwarded, change the forwarding destination, or cancel call forwarding to a telephone inside or outside the system.

NOTE:

Calls made via Remote Access to locations outside the system may vary in transmission quality.

Remote Access also allows remote system programming and maintenance by qualified technicians.

Specific outside trunks are programmed for either Dedicated or Shared Remote Access. When Dedicated Remote Access is programmed for a trunk, all incoming calls on that trunk are treated as Remote Access calls. When Shared Remote Access is programmed for a trunk, incoming calls on that trunk are treated as Remote Access calls only when Night Service is activated on the system. Remote Access can be programmed for any outside line connected to the system, except for Direct Inward Dialing (DID) or dial-in tie trunks. For DID and dial-in tie trunks, Remote Access is possible when the remote user dials the Remote Access code (the factory-set code is 889).

When calling into the system on a trunk that is programmed for Remote Access, the system answers the call and the caller receives a special dial tone. If a barrier code is not required, the caller can dial an extension, pool dial-out code, ARS code, telephone number, or feature code. If a barrier code is required, the caller dials the required 4-digit barrier code and receives a second dial tone.

When a call is received on a DID trunk, a dial-in tie trunk, or a trunk programmed for Shared Remote Access, and Night Service is not activated, the call is redirected to the QCC queue, a calling group, or an extension, depending on how the destination of calls to unassigned numbers is programmed. The factory setting specifies the primary operator as the destination.

Class of Restrictions

Barrier codes should be used for all trunks. A maximum of 16 barrier codes are allowed, each with a different class of restrictions. The class of restrictions allows or denies the use of system features to individuals or groups of users.

Class of restrictions are assigned whether barrier codes are used for Remote Access or not. If barrier codes are used, the class of restriction is assigned to each barrier code. If barrier codes are not used, the class of restriction can be assigned to all non-tie trunks, or all tie trunks and DID trunks with Remote Access.

The restriction classes are as follows:

- **Calling Restriction.** Determines whether Remote Access users can make local and/or toll calls. The factory setting is outward-restricted, meaning the user can make inside calls only. The setting can be changed to unrestricted (meaning the user can make local and toll or outside calls) or toll restricted (meaning the user can make only local outside calls). When barrier codes are not used, restrictions are assigned to all trunks and cannot be assigned to individual tie trunk or non-tie trunks. When barrier codes are used, restrictions are assigned to individual barrier codes.
- **Automatic Route Selection (ARS) Facility Restriction Level.** If the system uses the Automatic Route Selection (ARS) feature, the use of outgoing trunks by Remote Access users can be restricted by assigning a restriction level from 0 to 6. The factory setting, 0, is the most restrictive, and 6 is the least restrictive. The value assigned corresponds inversely to the Facility Restriction Level (FRL) assigned to the ARS route. To restrict remote users from using selected trunks, a value should be assigned that is less than the FRL assigned to the route. When barrier codes are not used, the FRL is assigned to all Remote Access trunks and cannot be assigned to individual trunks. When barrier codes are used, FRLs are assigned to individual barrier codes.
- **Allowed List Assignment.** Assigns Allowed Lists and is used when Remote Access users are restricted from making local and/or toll calls. When an Allowed List is assigned, Remote Access users can call specific numbers included on the list (local or long-distance). Allowed Lists are set up for all system users (see Allowed List feature). When barrier codes are used, Allowed Lists are assigned to individual barrier codes.
- **Disallowed List Assignment.** Assigns Disallowed Lists and is used when Remote Access users are not restricted from making local and/or toll calls. When a Disallowed List is assigned, remote users cannot dial the specific numbers included on the list. Disallowed Lists are set up for all system users (see Disallowed List feature). When barrier codes are not used, Disallowed Lists can be assigned to all Remote Access trunks and cannot be assigned to individual trunks. When barrier codes are used, Disallowed Lists are assigned to individual barrier codes.

- **Autoqueuing (Automatic Callback).** The factory setting prevents a remote caller who reaches a busy trunk pool (Hybrid/PBX only) or extension from using the Automatic Callback feature to request a trunk pool or extension. The factory setting can be changed to allow remote users to use Automatic Callback to request busy trunk pools or extensions. Automatic Callback assignment applies to all Remote Access users and cannot be assigned to trunks or barrier codes on an individual basis.

Considerations and Constraints

Under applicable tariffs, the customer is responsible for any charges incurred through the remote use of system facilities. To prevent unauthorized use of the system's outside lines by remote callers, also called *toll fraud*, the following precautions should be taken:

- Barrier codes should be used and changed frequently.
- The trunks programmed for remote access should be changed frequently.

Only touch-tone telephone users can access the system remotely. Rotary dial telephone users are routed through the system operator.

Remote Access calls ring on **SA** or **ICOM** buttons; however, the telephone rings like an outside incoming call.

Systems with DID trunks can designate a DID extension that off-site users can dial to use Remote Access.

If a remote caller does not dial a number or feature code before the timeout period expires, the call is sent to the redirect destination programmed for Remote Access.

Trunks used for dedicated Remote Access must not be assigned to ring into a Calling Group.

The sixteenth barrier code is automatically assigned for Remote Access by an AT&T-authorized dealer for system programming and maintenance.

Mode Differences

Hybrid/PBX Mode

Remote Access Autoqueuing (Automatic Callback) is available only in Hybrid/PBX mode for calls made to busy pools.

Feature Interactions

| | |
|----------------------------------|---|
| Account Code Entry | Account codes cannot be entered on calls made via Remote Access. |
| Allowed Lists | An Allowed List is one of the class of restriction (COR) items for Remote Access. When barrier codes are not used, Allowed Lists can be assigned to trunks system-wide (tie trunks and non-tie trunks are grouped separately.) When barrier codes are used, Allowed Lists can be assigned to individual barrier codes. |
| Automatic Route Selection | Remote Access users can make calls by using ARS. The user dials into the system, enters a barrier code if one is required, and dials the ARS code while listening to system dial tone. Facility Restriction Levels (FRLs) can be assigned to restrict the routes that remote callers can use. When barrier codes are not used, an FRL is assigned to all trunks (tie trunks and non-tie trunks are grouped separately) and cannot be assigned to individual trunks. When barrier codes are used, FRLs are assigned to individual barrier codes. |
| Callback | If the system is programmed for Remote Access, Remote Access users can use Callback. The user cannot hang up but must wait on the line until the extension or trunk pool is available. |
| Disallowed Lists | Disallowed Lists can be assigned as one of the items of the COR for Remote Access. When barrier codes are not used, Disallowed Lists can be assigned to trunks system-wide (tie trunks and non-tie trunks are grouped separately). When barrier codes are used, Disallowed Lists can be assigned to individual barrier codes. |
| Display | Calls received via Remote Access show standard call information for outside calls, including the caller's number if automatic number identification (ANI) is available. If a Remote Access call is sent to Coverage because an invalid number was dialed, an MLX display telephone user who receives the call sees the <code>Cover DISA#?</code> message. |
| Forced Account Code Entry | Forced Account Code Entry cannot be assigned to Remote Access users. |

| | |
|------------------------------|---|
| Forward and Follow Me | Users can set up forwarding of calls to extensions or outside telephone numbers via Remote Access. To do so, the user calls into the system on a trunk that is programmed for Remote Access. If a barrier code is required, the user hears the Remote Access dial tone (stutter tone) and enters the barrier code. Once the barrier code is correctly entered, or if barrier codes are not required, the user hears system dial tone and can then forward calls the same as when at an inside extension. |
| Group Calling | Remote Access users cannot log into a calling group, but a Remote Access user can call into a calling group regardless of the restrictions applied. When the call rings at a calling group member's telephone, it rings as an outside call. A calling group can be programmed to receive calls from Remote Access users to invalid extensions. If a trunk is programmed for both Remote Access and Group Calling, Remote Access overrides Group Calling. |
| Music-on-Hold | Remote Access users waiting for a busy trunk pool or extension do not hear Music-on-Hold, even if it is programmed on the system. They hear the queueing tone, then silence. |
| Night Service | When incoming calls are received on a trunk programmed for Shared Remote Access, they are treated as Remote Access calls only when Night Service is activated on all of the system operator positions that receive calls on that trunk. When a call is received on a trunk that is programmed for Shared Remote Access and Night Service is not activated, the call rings at the number programmed as the redirect destination for calls to invalid numbers. |
| Paging | Loudspeaker paging cannot be accessed from outside the system via DID lines or Remote Access. |
| SMDR | <p>Remote Access calls are recorded only if SMDR is programmed to track incoming calls. If a barrier code is entered, the barrier code number (01–16) appears in the <code>Account Code</code> field of the report, preceded by 999999. If the caller uses Remote Access to dial an extension and the call is answered, the extension number is shown in the <code>Station</code> field. If the call is not answered at the extension, the <code>Station</code> field is blank.</p> <p>If the caller uses Remote Access to dial out on a line or trunk, the <code>Station</code> field is blank on the first SMDR record and a second record is generated for the outgoing call.</p> <p>A Remote Access user cannot enter account codes. However, if a Remote Access user calls an inside extension and the person at that extension enters an account code, the code overwrites the barrier code number (01–16) in the <code>Account Code</code> column.</p> |

**System
Numbering**

If the system includes DID or dial-in tie trunks, the number assigned to the trunk can be programmed for Remote Access. This allows Remote Access users to call in on the DID or dial-in trunk.

The Remote Access code can be renumbered. The factory-set Remote Access code is 889.

Ringling Line Preference

See Automatic Line Selection and Ringing/Idle Line Preference.

Ringling Options

At a Glance

| | |
|---|--|
| Users Affected | Telephone users, DLC operators |
| Reports Affected | Extension Information System Information |
| Mode | All |
| Telephones | All except QCC |
| Programming Code | |
| Ring Timing Options (centralized telephone programming only for single-line telephones and MFM) | |
| All Personal Line and Pool buttons on extension | |
| Immediate Ring | *347 |
| Delay Ring | *346 |
| No Ring | *345 |
| Individual Personal Line, Pool , SA , ICOM , and Cover buttons | |
| Immediate Ring | *37 |
| Delay Ring | *36 |
| No Ring | *35 |
| Send Ring (on principal extension, for Shared SA buttons with Delay Ring) | |
| On | *15 |
| Off | **15 |
| Abbreviated Ring (multiline telephones only) | |
| On | *341 |
| Off | *342 |
| Personalized Ringing (multiline telephones only) | *32 + <i>ringing pattern number (1-8)</i> |
| MLX Display Label | RingOptions,All Lines,Immed Ring/Delay Ring /No Ring [RngOp,AllLn,Immed/Delay/No] RingOptions,One Line,Immed Ring/Delay Ring /No Ring [RngOp,1Line,Immed/Delay/No] SharedSARng,On/Off [ShRng,On/Off] RingOptions,Abbreviated,On/Off [RngOp,Abbrv, On/Off] PersonalRng,Pattern #n [PRing,Pat #n] |
| System Programming | To specify delay timing for Cover buttons programmed for Delay Ring: ● Options → Delay Ring |

Continued on next page

At a Glance (*continued*)

| | |
|----------------------------------|---------------------------|
| Factory Settings | |
| Ring Timing Option (all buttons) | Immediate Ring |
| Delay Ring Interval | 2 rings (range 1-6 rings) |
| Send Ring | On |
| Abbreviated Ring | Enabled |
| Personalized Ringing Pattern | 1 (pattern numbers 1-8) |

Description

Ring Timing Options refers collectively to three options that determine how users' telephones ring when they receive a call: Ring Timing Options, Abbreviated Ring Options, and Personalized Ringing Options. These options are programmed for each extension through extension programming or centralized telephone programming, using the display or programming codes. In addition, the system uses distinctive ringing patterns to identify various call types to the telephone user.

Ring Timing Options

Ring Timing Options control how soon the telephone rings, or whether it rings at all, when a call arrives. Line buttons on each extension can be programmed so that calls ring as follows:

- **Immediate Ring** is the factory setting. The telephone rings as soon as a call arrives.
- **Delay Ring** provides a delay before the telephone rings. The length of the delay depends on the type of button and the Coverage arrangement:
 - For outside line, **SA** (including **Shared SA**), and **ICOM** buttons programmed for Delay Ring, the delay is fixed at 2 rings and cannot be changed.
 - For **Cover** buttons programmed for Delay Ring, the Delay Ring Interval, set through system programming, provides a delay of 1 to 6 rings. (The factory setting is 2 rings.)
 - When a sender has both Individual and Group Coverage and an Individual Coverage receiver is available, the programmed Delay Ring Interval of 1 to 6 rings provides a delay (in addition to the Coverage Delay Interval) before calls go to Group Coverage.
- **No Ring** prevents the telephone from ringing at all. (However, the distinctive returning Transfer and Callback rings, described later in this section under "Distinctive Ringing," do ring.)

Ring Timing Options can be programmed *individually* for each Personal Line, Prime Line, **Pool**, **SA** (including **Shared SA**) or **ICOM**, and **Cover** button on an extension. The extension can also be programmed so that *all outside calls* on

Personal Line, Prime Line, and **Pool** buttons ring uniformly with one of these options. (**SA**, **ICOM**, and **Cover** buttons must always be programmed individually.)

Regardless of the Ring Timing Option selected, the green LED next to the line button with a call flashes immediately when the call arrives.

NOTE:

Ring Timing options cannot be programmed for **SA Originate Only** or **ICOM Originate Only** buttons, since they do not ordinarily receive calls.

- **Send Ring**, an additional Ring Timing Option, is used at the principal extension to override Delay Ring programming for any **Shared SA** buttons. With Send Ring on (the factory setting), when a call arrives at a busy **SA** button at the principal extension, the call rings immediately at the **Shared SA** buttons programmed for Delay Ring.

Abbreviated Ring Options

Abbreviated Ring specifies how a telephone rings if a call arrives when the user is already on another call. Each extension can be programmed to ring in one of the following ways:

- **Abbreviated Ring** is the factory setting. When the user is already on a call, a new call arriving on a line button programmed for Immediate Ring or Delay Ring rings only once. The ring is at a lower volume (called *attenuated ring*) than the normal ring.
- **Repeated Ring** makes the telephone ring normally. When the user is already on a call, an incoming call continues to ring until it is answered.

Personalized Ringing Options

Personalized Ringing Options allow the user to select one of eight different ringing patterns for his or her telephone, making it easier to distinguish its ring from other telephones. (Pattern #1 is the factory setting.) The user hears the Personalized Ringing pattern as the long part of the distinctive ring for an inside, outside, returning transfer, or Callback call, described in the next section.

Distinctive Ringing

Distinctive ringing allows users to identify the type or origin of an incoming call. The system identifies calls with the distinctive ringing patterns listed in Table 34. These patterns cannot be changed.

Table 34. Distinctive Ringing

| Call Type | Telephone Type | | | |
|---|--------------------------------|--------------------------------|---------------|---------|
| | MLX* | Analog Multiline* | Single-Line | QCC |
| Inside | 1 long ring | 1 long ring | 1 ring | 1 ring |
| Outside | 1 long ring + 1 short ring | 1 short ring + 1 long ring | 2 rings | 2 rings |
| Transferred outside call or returning Transfer | 1 long ring + 2 short rings | 2 short rings + 1 long ring | 3 short rings | 1 ring |
| Returning Callback call (priority ring) | 1 long ring + 3 short rings | 2 short rings + 1 long ring | 3 short rings | |

* Including Direct-Line Consoles.

NOTE:

The long ring is the Personalized Ringing pattern selected for the telephone.

Considerations and Constraints

Transfer Returns ring repeatedly until answered, regardless of the Abbreviated Ring setting for the telephone.

When one of the eight Personalized Ringing patterns is selected either through extension programming or through centralized telephone programming, the person programming the option hears the ring selected. In a Release 1.1 or Release 2.0 (or later) system, an MLX display telephone user *must* select `Enter` from the display to confirm and store the selection. The user again hears the ring selected after selecting `Enter`.

The Personalized Ringing pattern selected for each extension is not shown on system programming reports.

Delay Ring is especially useful on a **Cover** button, because it gives the sender a chance to answer before the call rings at the receiver's telephone.

No Ring is appropriate for users who do not usually answer outside calls. To answer a call when a telephone is programmed not to ring, the user simply presses the line button with the flashing green LED.

While using the programming codes or display selections to program Ring Timing Options for one line, the user must press a line to which these options apply — any line button with an outside line or any **SA** or **ICOM** button. If any other type of button is pressed, the user hears an error tone; the display telephone user also sees an error message. While programming Ring Timing Options for all outside lines, the user can press any line button, not just an outside line button.

Telephone Differences

Queued Call Consoles

Ringing Options, Abbreviated Ring, and Personalized Ringing cannot be programmed on a QCC. The **Call** buttons are fixed to Immediate Ring. A QCC receives only two types of distinctive ringing — one ring for an inside call and two rings for an outside call.

Other Multiline Telephones

Personalized Ringing can be programmed for an MLC-5 cordless telephone only through centralized telephone programming.

Ring Timing Options can be programmed for a Multi-Function Module (MFM) only through centralized telephone programming.

Single-Line Telephones

Neither Abbreviated Ring nor Personalized Ringing can be programmed for single-line telephones, and Ring Timing Options can be programmed only through centralized telephone programming.

Single-line telephones connected to an 008 OPT module do not receive distinctive ringing for the various call types listed in Table 34.

Feature Interactions

| | |
|---------------------------------|--|
| Auto Answer All | An analog multiline telephone user selects the lines to be answered by the device connected to a General Purpose Adapter (GPA) by programming each line for Immediate or Delay Ring. The lines not to be answered are programmed for No Ring. If the user wants the device to answer only inside calls, all Personal Lines must be programmed for No Ring. |
| Automatic Line Selection | The system does not automatically select outside line, SA , ICOM , or Cover buttons programmed for No Ring, even when Ringing/Idle Line Preference is turned on. The user must select the button manually to answer a call. (The green LED flashes when the call arrives; when the user presses the button, the red LED goes on.) |
| Coverage | Primary Cover , Secondary Cover , and Group Cover buttons can be programmed for Immediate Ring, Delay Ring, or No Ring. Calls received on line buttons programmed for No Ring are not sent to Coverage. |

If an Individual or Group Coverage receiver is on a call when a Coverage call is received, the receiver hears an abbreviated ring (if Abbreviated Ring is enabled).

Calls received on a **Primary Cover**, **Secondary Cover**, or **Group Cover** button ring with the receiver's (not the sender's) Personalized Ringing pattern.

In addition to its primary function, the Delay Ring Interval provides a delay before calls go to Group Coverage (in addition to the Coverage Delay Interval), when the sender also has Individual Coverage and a receiver is available.

Forward and Follow Me

On multiline telephones, calls forwarded to an extension ring with an abbreviated ring at the forwarding telephone and also ring at the destination telephone. On single-line telephones, calls forwarded to an extension ring at both the forwarding telephone and the destination telephone. On both multiline and single-line telephones, calls forwarded to a telephone number do not ring at the forwarding telephone.

Outside calls received at the forwarding extension ring as an internal call at the destination extension (one ring) and do not receive the normal distinctive ring for an outside call.

Group Calling

Abbreviated Ring is not operable for calls to the calling group extension because a calling group member active on a call is considered unavailable for incoming calls. In Hybrid/PBX mode, it is recommended that calling group members program **SA** buttons for Immediate Ring.

Headset Options

Headset Auto Answer does not automatically answer calls ringing on buttons programmed for No Ring on an MLX telephone; the user must select the button manually to answer the call. When Abbreviated Ring is enabled, the user hears the abbreviated ring if another call rings while the user is on a call.

Multi-Function Module

The ringing patterns for tip/ring devices connected to an MFM are those of an MLX telephone rather than a single-line telephone — one ring for inside calls, two rings for outside calls, and three rings for priority ring or transfer return. Personalized Ringing patterns cannot be programmed for an MFM. Centralized telephone programming must be used to program Ring Timing Options (Immediate Ring, Delay Ring, or No Ring).

Night Service

When Night Service is turned on, calls received at a Night Service group member's telephone ring immediately even if the line buttons are programmed for Delay Ring or No Ring. When Night Service is turned off, telephones return to their programmed Ring Timing Options.

- Reminder Service** A Reminder Service call overrides programmed Ring Timing Options (Delay Ring and No Ring) and rings with a priority ring at an **SA** or **ICOM** button.
- Transfer** Transfer Returns ring until answered and do not receive Abbreviated Ring.

Saved Number Dial

At a Glance

| | |
|-------------------|---|
| Users Affected | Telephone users, DLC operators |
| Reports Affected | Extension Directory |
| Mode | All |
| Telephones | All except QCC and single-line telephones |
| Programming Code | *85 |
| MLX Display Label | SaveNumDial [Save#] |
| Maximums | 16 digits |

Description

Saved Number Dial allows a user to save the last number dialed from a multiline telephone and call the number again without manually redialing. The user can save the number even if the person being called answers. The number saved is any extension or telephone number dialed using one of the following methods:

- dialing the complete number on the dialpad
- dialing the number using a Personal Speed Dial code
- dialing the number using a programmed outside **Auto Dial** button

Saved Number Dial does not store numbers dialed with an Extension, Personal, or System Directory, an inside **Auto Dial** button, a System Speed Dial code, or a **DSS** (Direct Station Selector) button.

Unlike Last Number Dial, Saved Number Dial does not replace the number saved each time the user dials a new number, unless the user presses the programmed **Saved Number Dial** button before hanging up.

Considerations and Constraints

Saved Number Dial cannot be used on a Multi-Function Module (MFM).

The number of **Saved Number Dial** buttons that can be programmed on each multiline telephone is limited only by the number of available programmable buttons.

Since the type of line button (**Personal Line, SA, or ICOM**) used to make the call is not stored, the user must select the appropriate line button before using Saved Number Dial to redial a number.

The green LED next to the programmed **Saved Number Dial** button does not go on when the feature is used.

Saved Number Dial saves whatever you dial, whether the number is valid or not.

NOTE:

- If a user dials a telephone number and, after the call is connected, dials additional digits such as an account number or password, Saved Number Dial saves all the digits, including those dialed after the call is connected (up to a total of 16).
- If someone other than the owner of a display telephone presses the **Saved Number Dial** button, all dialed digits are shown on the display, including confidential information such as passwords or account codes.

If the number dialed with an outside **Auto Dial** button or **Personal Speed Dial** code includes a special character such as Pause or Stop, the special character does not work when the number is redialed by Saved Number Dial.

Mode Differences

Behind Switch

When a user manually dials an outside number that includes a dial-out code—for example, an Automatic Route Selection (ARS) or pool dial-out code—required by the host system, the pauses required to wait for dial tone from some host systems are not automatically stored when Saved Number Dial is used. As a result, the user may either hear a fast busy signal or reach a wrong number when redialing the stored number using Saved Number Dial.

Telephone Differences

Queued Call Consoles

Saved Number Dial cannot be used on a QCC.

Other Multiline Telephones

To save a number using Saved Number Dial, a multiline telephone user presses the programmed **Saved Number Dial** button before hanging up. The green LED next to the programmed **Saved Number Dial** button does not go on when the feature is used.

To redial a number using Saved Number Dial, the user selects the appropriate line for the call and presses the programmed **Saved Number Dial** button. The number saved by the feature is dialed automatically. MLX display telephones users cannot use the feature by selecting it from the display, but can use the display to program the feature onto a button.

Single-Line Telephones

Saved Number Dial cannot be used on a single-line telephone.

Feature Interactions

| | |
|----------------------------------|--|
| Auto Dial | A number dialed by pressing a programmed outside Auto Dial button is stored for Saved Number Dial as if it were dialed with the dialpad, but special characters do not work. An extension dialed by pressing a programmed inside Auto Dial button is not stored for Saved Number Dial. |
| Automatic Route Selection | The ARS dial-out code is saved with the telephone number dialed. |
| Directory | Saved Number Dial does not store numbers dialed using a Personal, Extension, or System Directory listing. |
| Direct Station Selector | An extension number dialed by pressing a DSS button is not stored for Saved Number Dial. |
| Display | When a user presses a programmed Saved Number Dial button, the digits appear on the display as if the user were dialing them from the dialpad. |
| Inspect | In Release 1.0 and 1.1, when a user presses Inspct and then a programmed Saved Number Dial button, <i>Saved Number Dial</i> appears on the display. In Release 2.0, when a user presses Inspct and then a programmed Saved Number Dial button, the saved number appears on the display. |
| Microphone Disable | When an MLX telephone user's microphone is disabled, pressing a Saved Number Dial button before lifting the handset turns on the speakerphone so the user can hear the number being dialed. However, the user must lift the handset to talk once the call is answered. |

- Speed Dial** Telephone numbers dialed using Personal Speed Dial are stored by Saved Number Dial. If the number includes special characters, such as Pause or Stop, the special characters do not work when the number is redialed using Saved Number Dial. Telephone numbers dialed using System Speed Dial are not stored by Saved Number Dial.
- SMDR** All outside numbers dialed using Saved Number Dial are recorded on the SMDR report.
- System Access/
Intercom Button** When Saved Number Dial is used on a call made with a **Shared SA** button, the number is stored on the telephone where Saved Number Dial was used, not on the principal extension.
- Transfer** The Saved Number Dial feature can be used to dial the outside number of the telephone to which the call is being transferred.

Signal/Notify

At a Glance

| | |
|-------------------|---|
| Users Affected | Telephone users, operators |
| Reports Affected | Extension Information |
| Mode | All |
| Telephones | All except QCC and single-line telephones |
| Programming Code | |
| Signal | *23 + ext. no. |
| Notify, Send | *757 + ext. no. |
| Notify, Receive | *758 + ext. no. |
| MLX Display Label | |
| Signal | Signal [Signl] |
| Notify, Send | Notify,Send [Ntfy,Send] |
| Notify, Receive | Notify,Receive [Ntfy,Recv] |

Description

A user can signal another telephone user without making a call to that extension, using either the Signal feature, which beeps the destination telephone, or using the Notify feature, which lights an LED on the destination telephone. The meaning of the signal can be prearranged between the sending and receiving users.

Signal

Using the Signal feature, a multiline telephone user can beep another telephone. To use the feature, the user presses a programmed **Signal** button without lifting the handset. A beep is heard at the destination telephone for as long as the sender holds the button down.

In addition to sending a beep, the **Signal** button can be used to see the status of the destination telephone. When the destination telephone user lifts the handset or uses Do Not Disturb, the green LED next to the **Signal** button goes on.

The user can also use the **Signal** button to dial the destination telephone extension automatically. However, the user must select an **SA** or **ICOM** button and either lift the handset or press the **Speaker** button before using the **Signal** button; this is different from Auto Dial, which automatically selects a line and activates the speakerphone.

Notify

With Notify, a multiline telephone user can light an LED on another telephone. To use this feature, a **Send** button must be programmed at the sender's telephone and a **Receive** button must be programmed at the receiver's telephone.

When the sender presses the **Send** button, a green LED goes on next to the **Receive** button (at the receiver's telephone) and the **Send** button (at the sender's telephone). Both LEDs remain on until the sender presses the **Send** button again or the receiver presses the **Receive** button.

The visual notification (lighting the destination telephone's LED) is sent only one way (sender to receiver). If both users want to send and receive the visual notification, both telephones must be programmed with a Send and a Receive button. Unlike the Signal feature, Notify cannot be used to see the status of a destination telephone, nor can it be used to automatically dial the extension.

Considerations and Constraints

Signal and Notify can be used even when both users are on the telephone.

Telephone Differences

Queued Call Consoles

Notify and **Signal** buttons cannot be used on QCCs; however, pressing a **DSS** button sends a signal to the extension associated with the **DSS** button in the following instances:

- The QCC operator is timed out from dial tone on a **Call** button or has pressed the **Forced Release** button while listening to dial tone on a **Call** button.
- The QCC operator, in a split condition, pressed the **Source** button after contacting the destination but did not connect both parties by using the **Join** button. If the operator presses a **DSS** button, a signal is sent to the destination extension.

Other Multiline Telephones

Both Signal and Notify require a programmed button. MLX display telephone users cannot select either of these features from the display.

Single-Line Telephones

Neither Signal nor Notify can be used on single-line telephones.

Feature Interactions

| | |
|--------------------------------|---|
| Auto Dial | A Signal button and an Auto Dial button cannot be programmed for the same extension. If a user tries to program one of these buttons while the other is already programmed, the feature being programmed erases the previously programmed feature. |
| Conference | Signal and Notify can be used during a conference call. |
| Direct Station Selector | If a user presses a Signal button programmed with the system operator's extension while making a call to the system operator, the LED next to the operator's DSS (Direct Station Selector) button changes from flashing to on steady while the Signal button is held down. |
| Do Not Disturb | Signal and Notify cannot be used when the destination telephone user activates Do Not Disturb. |
| Group Calling | A Signal button cannot be programmed for a calling group. |
| Messaging | If a display telephone user presses a Signal button only to send an audible signal with a posted message to a telephone, the posted message is not shown on the display at the destination. However, if a display telephone user selects an SA or ICOM button, lifts the handset, and uses the Signal button to dial the extension, the posted message is shown at the destination telephone. |
| Multi-Function Module | When set for Supplemental Alert Adapter (SAA) operation, a Multi-Function Module (MFM) can receive a signal but cannot send one. An MFM cannot receive a signal when set for tip/ring operation. |
| Privacy | Users can program and use the Signal and Notify features to signal co-workers who have activated Privacy. |
| Transfer | A Signal button can be used to dial the extension during a transfer after the Transfer button and either an SA or ICOM button is pressed. Signal buttons cannot be used to initiate One-Touch Transfer. |

Speed Dial

At a Glance

| | |
|------------------------------|---|
| Users Affected | Telephone users, operators |
| Reports Affected | Extension Information System Directory |
| Mode | All |
| Telephones | |
| System Speed Dial | All except QCC |
| Personal Speed Dial | Multiline telephones with 10 or fewer buttons, single-line telephones |
| Programming Code | |
| System Speed Dial | <i>*24 + System Speed Dial code</i> |
| Personal Speed Dial | <i># + Personal Speed Dial code (01-24) + *21 + dial-out code + tel. no. + ##</i> |
| MLX Display Label | SysSpeedD1 [SpdD1] |
| System Programming | Create, change, or delete System Speed Dial entries: ● More → Labeling → Directory → System |
| Maximums | |
| System Speed Dial | 130 numbers 40 characters per number 11 characters per label |
| Personal Speed Dial | 1200 numbers in the system 24 numbers per user 28 characters per number |
| Factory Settings | |
| System Speed Dial Codes | 600–729 |
| Personal Speed Dial Codes | 01–24 |

Description

Speed Dial allows users to dial outside numbers quickly, using a two-or three-digit code. There are two types of Speed Dial: System Speed Dial and Personal Speed Dial.

System Speed Dial

System Speed Dial allows the system manager to program frequently used numbers that can be dialed by any user using a three-digit code.

In the Hybrid/PBX mode, numbers can include pool dial-out codes or the ARS code.

System Speed Dial numbers are programmed by using Labeling. The programmed labels include the name of the business or person being called and the number dialed. When a user with a display telephone uses a Speed Dial code to dial the number, the number being dialed appears on the display, unless it is a marked Speed Dial number.

For numbers that include confidential information, such as passwords or account billing numbers, the listing can be specifically designated in system programming to suppress the number dialed so that users with display telephones see only the code that was dialed (600-729) and not the number dialed. This is called a marked System Speed Dial code. When a number is dialed with a marked System Speed Dial code, any calling restrictions (such as toll or outward restrictions) assigned to the telephone are overridden. In addition, the System Speed Dial code is printed on Station Message Detail Recording (SMDR) reports instead of the number.

The range of numbers available for System Speed Dial codes includes numbers 600-729; this cannot be changed.

The codes are available to all users except Queued Call Console (QCC) system operators. On multiline telephones, line buttons can be programmed with individual 3-digit System Speed Dial codes. Each System Speed Dial code must be programmed on a separate button.

Programmed System Speed Dial numbers are stored in the System Directory. MLX display telephone users can search the directory and select a listing by pressing a display button to dial a System Speed Dial number. Users with analog multiline display telephones or non-display telephones dial the same numbers by using the 3-digit System Speed Dial codes or by programming individual System Speed Dial codes onto a button.

Personal Speed Dial

Personal Speed Dial is used only by single-line telephone users and users with multiline telephones with 10 or fewer buttons (for example, MLX-10 and MLX-10D telephones). Personal Speed Dial allows the user to program up to 24 numbers that can be dialed using a two-digit code.

This allows the user to dial a two-digit code for long numbers that require, for example, account codes, long-distance company access codes, and area codes. In the Hybrid/PBX mode, the Personal Speed Dial can also include pool dial-out codes or the Automatic Route Selection (ARS) code. When dial-out codes are included, Pause characters may be required immediately following the dial-out code to allow time to receive the telephone company dial tone.

The Personal Speed Dial codes used to select the specific programmed number are 01 to 24. Since each user has the same codes to choose from, the telephone numbers associated with the codes only apply to the telephone on which they were programmed.

NOTE:

This feature should be used with MLX-10 or MLX-10D phones *only*. MLX-20L telephone users should program a Personal Directory instead of Personal Speed Dial codes. MLX-28D telephone users should program **Auto Dial** buttons instead of Personal Speed Dial codes. Programming Personal Speed Dial codes on phones with more than ten buttons may delete features already programmed onto those buttons.

Considerations and Constraints

Personal Speed Dial numbers can be used only with single-line telephones and multiline telephones with 10 buttons or fewer.

Beginning with Release 1.1, when programming Personal Speed Dial on MLX-10D telephones, the user *must* select `Enter` from the display after dialing the telephone number or the feature will not be programmed.

When a number is dialed using a marked System Speed Dial code, any calling restrictions (such as toll or outward restrictions) assigned to the telephone are overridden.

The following special characters can be used in numbers programmed on Speed Dial codes: Pause (**Hold**), Stop (**Drop**), Flash (**Conf**), and End of Dialing (**#**). See Appendix G for additional information.

When a pool dial-out or ARS code is included in the dialing sequence associated with a Personal Speed Dial or System Speed Dial code, pauses may need to be programmed immediately after the dial-out code. This allows enough time to receive outside dial tone.

Personal Speed Dial and System Speed Dial cannot be used from rotary dial telephones.

On multiline telephones, line buttons can be programmed with individual System Speed Dial codes. Each System Speed Dial code must be programmed on a separate button.

Personal Speed Dial should not be confused with Personal Directories. See Directories for more information.

Mode Differences

Hybrid/PBX Mode

A pool dial-out code or an Idle Line Preference access code can be included with the telephone number in a Personal Speed Dial or System Speed Dial code. To allow time to receive a local telephone company dial tone, pause characters may be required immediately following a pool dial-out code or an access code for a long-distance carrier (pauses are not needed following the ARS code).

When ARS is used, the pound sign (**#**) should be pressed twice after the dialed digits when programming a Personal Speed Dial or System Speed Dial code for a 7-digit toll number. This signals the end of the dialing sequence. See Appendix G for information about special characters.

Behind Switch Mode

The user can program any dial-out codes required by the host system Personal Speed Dial or System Speed Dial codes.

To allow time to receive a local telephone company dial tone, pause characters may be programmed after a pool dial-out code. Pause characters may also be required by the host system, or after entering an access code for a long-distance carrier.

Telephone Differences

Direct-Line Consoles

System Speed Dial numbers can be programmed from the first Direct-Line Console (DLC) connected to the first analog station jack. In extension programming, the user presses the **Feature** button or pound sign (**#**), the 3-digit System Speed Dial Code, the outside telephone number, and the pound sign (**#**).

Queued Call Consoles

Personal Speed Dial and System Speed Dial cannot be used to dial numbers on a QCC. The Directory features can be used instead.

Other Multiline Telephones

System Speed Dial

To dial a System Speed Dial number, users press a **System Speed** Dial button programmed with the code. The user can also lift the handset, press the

Feature button, and dial the System Speed Dial Code associated with the number. For analog multiline telephones without a programmed **Feature** button, the user selects an **SA** or **ICOM** button, lifts the handset, and dials # and the System Speed Dial code.

Personal Speed Dial

Users of multiline telephones with more than ten buttons should not use Personal Speed Dial; doing so may delete features already programmed onto buttons. To dial a Personal Speed Dial number, the multiline user presses the **Feature** button and dials the Personal Speed Dial code (01-24) associated with the number. For analog multiline telephones without a programmed **Feature** button, the user dials #, while off-hook on an **SA** or **ICOM** button, and the Personal Speed Dial code.

Starting with Release 1.1, MLX-10D telephone users, when programming Personal Speed Dial numbers, must select `Enter` from the display after dialing the telephone number.

Single-Line Telephones

To dial a Personal Speed Dial or System Speed Dial number, the single-line telephone user lifts the handset and (while listening to inside dial tone) dials # and the Speed Dial code.

Feature Interactions

| | |
|----------------------------------|--|
| Account Code Entry | A System Speed Dial number or a Personal Speed Dial number can be programmed to replace a long account number, but it cannot be programmed to contain both an account number and a telephone number. Single-line telephones cannot use Personal Speed Dial or System Speed Dial to dial account codes because the # required to use Speed Dial is also used to terminate Account Code Entry. |
| Allowed Lists | A user with an outward-restricted or toll-restricted telephone cannot dial an outside number by using a Personal Speed Dial or System Speed Dial code (excluding a marked System Speed Dial code) unless the number is on an Allowed List assigned to the telephone. |
| Automatic Route Selection | Personal Speed Dial and System Speed Dial numbers can include the ARS code. |
| Callback | When a Stop character is programmed as part of a Speed Dial number, the user must stay on the line and wait for the Callback call and then reactivate Speed Dial. This signals the system to continue dialing the digits following the Stop character. |

| | |
|----------------------------------|--|
| Calling Restrictions | When a marked System Speed Dial code is used to dial a number, any calling restrictions (such as toll or outward restrictions) assigned to the telephone are overridden. |
| Conference | Press the Conf button to enter the Flash special character in a Personal Speed Dial or System Speed Dial telephone number. |
| Directories | System Speed Dial numbers are stored in the System Directory. MLX display telephone users can dial the numbers by selecting the name from the display. If the number is on a marked System Directory listing, the user can select the listing and dial the number regardless of any calling restrictions (toll and outward) assigned to the telephone. |
| Disallowed Lists | A user with an unrestricted telephone cannot dial an outside number by using Personal Speed Dial or System Speed Dial if the number is on a Disallowed List assigned to the telephone, unless the number is dialed using a marked System Speed Dial code. |
| Drop | Press the Drop button to enter the Stop special character in a Personal Speed Dial or System Speed Dial telephone number. |
| Forced Account Code Entry | Multiline telephone users who use a programmed Account Code button or display telephone users who select the feature from the display can use Personal Speed Dial and System Speed Dial to store account codes. Single-line telephone and multiline telephone users who complete the entry by dialing a # cannot use Personal Speed Dial or System Speed Dial to dial account codes because the # required to use Speed Dial is also used to activate Account Code Entry. |
| Hold | Press the Hold button to enter the Pause special character in Personal Speed Dial or System Speed Dial telephone numbers. |
| Labeling | The telephone numbers associated with System Speed Dial codes are entered using the programming screens to program labels for System Directory listings. |
| Last Number Dial | <p>Telephone numbers that are dialed by using Personal Speed Dial are stored by Last Number Dial. If the stored number includes a special character, such as Pause or Stop, the special characters do not work when the number is redialed by using Last Number Dial.</p> <p>Telephone numbers that are dialed by using a System Speed Dial code are not stored by Last Number Dial.</p> |

| | |
|--------------------------|--|
| Pools | A pool dial-out code can be programmed on Personal Speed Dial and System Speed Dial numbers. When a pool dial-out code is included in the number dialed, pause characters may need to be programmed immediately following the dial-out code to allow time to receive a local telephone company dial tone. |
| Recall | Press the Conf button to enter the Flash special character, which simulates pressing the Recall button, in a Personal Speed Dial or System Speed Dial telephone number. |
| Saved Number Dial | Telephone numbers that are dialed by using a Personal Speed Dial code are stored by Saved Number Dial. If the number includes a special character, such as Pause or Stop, the special characters do not work when the number is redialed by using Last Number Dial. Telephone numbers that are dialed by using a System Speed Dial code are not stored by Saved Number Dial. |
| SMDR | When Personal Speed Dial or System Speed Dial is used to dial an outgoing call, the actual digits dialed by the system appear on the report. However, when a marked System Speed Dial number is used, the Speed Dial code prints on the report rather than the digits dialed. |
| Transfer | Both Personal and System Speed Dial can be used to dial the extension to which a call is being transferred. |

Station Message Detail Recording (SMDR)

At a Glance

| | |
|---------------------|---|
| Users Affected | Telephone users, operators, system manager |
| Reports Affected | System Information |
| Mode | All |
| System Programming | Select types of calls recorded: <ul style="list-style-type: none"> ● Options → SMDR → Call Report Select minimum duration of calls recorded: <ul style="list-style-type: none"> ● Options → SMDR → Call Length Select report format: <ul style="list-style-type: none"> ● Options → SMDR → Format |
| Hardware | Printer needed for reports |
| Maximums | |
| Queue | 100 records |
| Called Number Field | 15 digits |
| Factory Settings | |
| Calls Recorded | Incoming and outgoing calls |
| Call Length | 40 sec (range 0-255) |
| Format | Basic |

Description

The Station Message Detail Recording (SMDR) feature is used to capture detailed usage information on incoming and outgoing voice and data calls. The information is sent to an optional output device such as a printer or an optional call accounting system.

SMDR records are gathered sequentially and sent to the RS-232 SMDR jack on the processor module of the control unit. They can be printed on a serial printer connected to the SMDR jack. To assist further with cost allocation and unauthorized call detection, an AT&T Call Accounting System (CAS/B, CAS/H, CAT/B, or CAT/H) can be connected to the SMDR jack on the control unit.

Two SMDR report formats are available: the factory-set Basic format or the ISDN format. The ISDN format is used when the business subscribes to the AT&T INFO2 automatic number identification service (ANI). When the ISDN format is selected during system programming, the actual number dialed by the caller appears in the CALLED NUMBER field of the call report. The rest of the fields are identical to the Basic format,

Call information can be recorded for the factory setting of incoming and outgoing calls or for outgoing calls only. In addition, the system is factory-set to record only calls that last at least 40 seconds. The setting can be changed to 0–255 seconds.

For outgoing calls, the timing starts when dialing is completed (the system detects end-of-dialing). If incoming calls are included on call reports, the timing begins when a user answers the call. The timing is stopped for both incoming and outgoing calls when the call is disconnected. Figure 33 shows a sample SMDR report.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------|----------|---------------|------------------|----------|------|---------|------------------|
| DATE | TIME | CALLED NUMBER | DUR. | LINE | STN. | ACCOUNT | |
| C | 06/27/92 | 20:33 | 5553643 | 00:01:33 | 801 | 15 | 1234567890123456 |
| C | 06/27/92 | 21:01 | 12125555436 | 00:02:44 | 804 | 14 | 9345 |
| C | 06/27/92 | 21:02 | IN | 00:01:55 | 809 | 17 | |
| I | 06/27/92 | 21:12 | 5553633 | 00:00:55 | 802 | 16 | 99999905 |
| C | 06/27/92 | 21:33 | 5553463* | 00:11:33 | 801 | 15 | 9345 |
| D | 06/27/92 | 21:53 | 355536431234555? | 00:01:33 | 801 | 15 | 9345 |

Figure 33. Sample SMDR Report in ISDN Format

A page heading indicates the name of each field in an SMDR record, as follows:

- **CALL TYPE** (column 1): In the Basic format, C indicates a voice call and D indicates a data call. In the ISDN format I indicates incoming voice calls on a PRI facility, C indicates all outgoing and incoming voice calls on non-PRI facilities, and D indicates all outgoing data calls.
- **DATE** (column 2): The date of the connection is shown in the *mm/dd/yy* format. Leading zeros are not suppressed.
- **TIME** (column 3): The time of the connection is shown in the *hh:mm* format. The system time is used and is shown in 24-hour (military) time.
- **CALLED NUMBER** (column 4): For an outgoing call, this is the dialed number or, if the number has been suppressed for reasons of privacy or security, the marked Speed Dial code associated with that number. In the Basic format, an incoming call has only the word IN in this field. In the ISDN format, an incoming call on a PRI facility with number identification has the calling telephone number. However, any call on a line without number identification also has the word IN in this field. The maximum number of digits for the field is 15. An asterisk (*) indicates far-end disconnect if the call is on a supervised facility. A question mark (?) indicates that the number overflowed (was more than 15 digits).

- **DUR.** (column 5): The duration of the call is shown in the *hh:mm:ss* format.
- **LINE** (column 6): This is the facility number, or outside trunk, used to make or receive the recorded call.
- **STN.** (column 7): This is the station extension that first answered or made the recorded call. The exception is an incoming call that is transferred to another extension, or is parked and picked up by another extension; the destination extension or the extension that picked up is then recorded.
- **ACCOUNT** (column 8): The account code associated with incoming and outgoing calls is attributed to a specific project, department, or employee for billback purposes. For a Remote Access call, this field contains the barrier code number (00-16) preceded by six consecutive 9s. If an account number is also entered, the barrier code number is overwritten. For a PRI call, the authorization code for the FTS 2000 Network is shown in the `ACCOUNT` field.

Considerations and Constraints

Printing system programming reports has a higher priority than printing SMDR reports. SMDR records are queued until programming report printing is completed. Records are also queued if the printer is turned off, disconnected, or runs out of paper, or if a paper jam occurs. Up to 100 SMDR records can be queued. SMDR records generated after maximum capacity is exceeded may be lost, since only the newest 100 records are retained.

System time and date must be set correctly to print accurate SMDR reports.

The maximum digits recorded in the `CALLED NUMBER` field is 15.

When the number included in the `CALLED NUMBER` field contains both an equal access code and a country code for an overseas call, the maximum digits recorded may not provide enough information for call accounting software to process the call and supply cost data.

Call information can be recorded for incoming and outgoing calls (factory setting) or for outgoing calls only. If SMDR is set to record outgoing calls only, an account code cannot be entered for incoming calls.

Inside calls are not recorded on SMDR reports.

When a user joins a call on a shared line and continues on the call after the originator drops off, SMDR records the total duration of the call, up through the time the last person hangs up.

If a person selects a line and cannot complete the call (for example, due to restrictions), yet is on the line for more than the programmed call duration, an SMDR record is created even though a call was never made on that trunk.

In the event of a power failure, any calls in progress and the SMDR records for those calls are lost.

Telephone Differences

Queued Call Consoles

When a QCC system operator arranges a three-participant conference call (the system operator and two other participants) and presses the **Release** button, the QCC system operator is released from the call but the other two participants remain connected. However, the QCC operator's extension remains on the SMDR record.

Feature Interactions

| | |
|----------------------------------|---|
| Account Code Entry | The account code is printed in the <code>ACCOUNT</code> field of the SMDR record. If SMDR is set to record outgoing calls only, an Account Code cannot be entered on incoming calls. |
| Auto Dial | All calls made to an outside number using Auto Dial are recorded on the SMDR report. |
| Automatic Route Selection | SMDR reports for systems with Automatic Route Selection (ARS) show all the digits dialed by the user in the <code>CALLED NUMBER</code> field, including any digits absorbed by digit absorption and the facility used to make the call. The records do not include the ARS dial-out code or any digits added by ARS. |
| Callback and Call Waiting | SMDR begins measuring the duration of Callback calls when the trunk is seized and the system begins dialing the call. Call Waiting calls are measured as soon as the call is answered. |
| Camp-On | If an incoming call is camped-on but is not picked up by the other extension, the extension of the user that activated Camp-On is shown in the <code>STN</code> field of the SMDR report. If an incoming call is camped-on and picked up by the destination extension, the destination extension is shown in the <code>STN</code> field of the SMDR report. |
| Conference | When a conference call includes inside and outside participants, records are generated only for outside participants. When a call is dropped from a conference call, it is considered a completed call and is sent to the SMDR print queue. |
| Coverage | The extension of the telephone on which an Individual or Group Coverage call is answered is shown on the SMDR report. |
| Forced Account Code Entry | The account code is printed in the <code>ACCOUNT</code> field of the SMDR record. |

| | |
|-------------------------------|--|
| Forward and Follow Me | If the system is programmed to track both incoming and outgoing calls, two SMDR records are generated when an outside call is forwarded to an outside telephone number. One record shows the incoming call, and the other record shows the call made to the destination telephone number with the forwarding telephone as the originator. |
| Group Calling | Calls to calling groups are associated with the first extension to handle the call. If the call is answered by the calling group delay announcement, the extension for the delay announcement device is recorded on the SMDR record even if the call is answered by a calling group member or overflow group member. The timing begins as soon as the calling group member or delay announcement answers the call. If the caller hangs up while listening to a delay announcement, the call is associated with the extension of the delay announcement device. |
| Last Number Dial | All calls made to outside numbers using Last Number Dial are recorded on the SMDR report. |
| Multi-Function Module | A Multi-Function Module (MFM) is treated as an MLX telephone on SMDR reports. The system waits until the end of dialing before sending a connect message to the MFM. Any digits dialed after the connect message is received are not recorded on SMDR reports. |
| Paging | Paging calls are not reported to SMDR. |
| Park | If an incoming call is parked but is not picked up by the other extension, the extension of the user who activated Park is shown in the <i>STN</i> field of the SMDR record for the call. If an incoming call is parked and picked up by the destination extension, the destination extension is shown in the <i>STN</i> field of the SMDR report. |
| Pickup | The extension of the user picking up the call using Pickup is shown on the SMDR report. |
| Pools | For outgoing calls made by using a pool, the trunk selected by the system is reported on the SMDR report. |
| Power Failure Transfer | During a commercial power failure, all calls are disconnected and no SMDR records are generated for calls made using a Power Failure Transfer telephone. |
| Recall | If a multiline telephone user presses the Recall button to get a new dial tone, the SMDR timing is stopped for the previous call and timing begins for a new call. |

| | |
|--|---|
| Remote Access | <p>Remote Access calls are recorded only if SMDR is programmed to track incoming calls. If a barrier code is entered, the barrier code number (00-16) appears in the <code>ACCOUNT</code> field of the report.</p> <p>If the caller uses Remote Access to dial an extension and the call is answered, the extension number is shown in the <code>STN</code> field. If the call is not answered at the extension, the <code>STN</code> field is blank. If the caller uses Remote Access to dial out on a line or trunk, the <code>STN</code> field is blank on the first SMDR record and a second record is generated for the outgoing call.</p> <p>A Remote Access user cannot enter account codes. However, if a Remote Access user calls an inside extension and the person at that extension enters an account code, the account code number overwrites the barrier code number (00-16) printed in the <code>ACCOUNT</code> field.</p> |
| Saved Number Dial | <p>All calls made to outside numbers using Saved Number Dial are recorded on the SMDR report.</p> |
| Speed Dial | <p>When Personal Speed Dial or System Speed Dial is used to dial an outgoing call, the actual digits dialed by the system appear on the report. However, when a marked System Speed Dial number is used, the Speed Dial code prints rather than the digits dialed.</p> |
| System Access/ Intercom Buttons | <p>When a call is made on a Shared SA button, the SMDR report records the extension number that the call was made from, not the principal extension number.</p> |
| Transfer | <p>The number of the extension that hangs up on an incoming outside call is shown in the <code>STN</code> field of the SMDR report regardless of how many times the call is transferred. For outgoing outside calls, the number of the extension that dialed the call is shown on the SMDR report even if the call is later transferred to another extension.</p> |

System Access/Intercom Buttons

At a Glance

| | |
|--|--|
| Users Affected | Telephone users, DLC operators |
| Reports Affected | Extension Information |
| Mode | |
| SA buttons | Hybrid/PBX |
| ICOM buttons | Key and Behind Switch |
| Telephones | All except QCC |
| Programming Code | |
| Assign Buttons (centralized telephone programming only)-Default Ring | |
| SA or ICOM | *16 |
| SA or ICOM Originate | *18 |
| Only | |
| Shared SA | *17 + primary extension |
| Change Button Type (centralized telephone or extension programming) | |
| Ring | **19 |
| Voice | *19 |
| Send Ring (on principal extension for Shared SA) | |
| On | *15 |
| Off | **15 |
| MLX Display Label | |
| Assign Buttons (centralized telephone programming only, multiline telephones only) | |
| SA or ICOM | SYSACC (same for SA or ICOM) |
| SA or ICOM Originate | SYSACC-oo (same for SA or ICOM) |
| Only | |
| Shared SA | ShareSysAcc |
| Change Button Type (centralized telephone or extension programming, multiline telephones only) | |
| Ring | Voice Annce,Place,Ring [Voice,Place,Ring] |
| Voice | Voice Annce,Place,Voice [Voice,Place,Voice] |
| Maximums | 10 buttons per extension |
| | 9 Shared SA buttons per multiline telephone |
| | 16 Shared SA buttons per principal extension |
| | 3 system users per call on Shared SA |

Continued on next page

At a Glance *(continued)*

| Factory Settings | | |
|---|---|---|
| Button Assignments by Mode | Hybrid/PBX | Key and Behind Switch |
| Direct-Line Consoles | 1 SA Ring 1 SA Voice | 1 ICOM Ring 1 ICOM Voice |
| Other Multiline Telephones and MFM | 1 SA Ring 1 SA Voice 1 SA Originate Only | 1 ICOM Ring 1 ICOM Voice |
| Single-Line Telephones | 2 SA Ring 1 SA Originate Only | 2 ICOM Ring |
| Additional buttons assigned (including Shared SA) | Ring | |
| Ring Timing Option | Immediate Ring | |
| Send Ring (on principal extension) | On | |

Description

Users access the system by pressing buttons on their telephones. These buttons are called System Access (**SA**) or Intercom (**ICOM**) buttons, depending on the system operating mode. How **SA** and **ICOM** buttons operate also depends on the operating mode.

SA Buttons — Hybrid/PBX Mode

In Hybrid/PBX mode, telephones have **SA** buttons, which are used as follows:

- To make an outside call by dialing an Automatic Route Selection (ARS) code (usually 9) and a telephone number
- To make an outside call using a trunk pool by dialing the pool dial-out code and a telephone number
- To make an inside call
- To activate a feature by using a feature code
- To receive inside and outside calls, including voice-announced inside calls and transferred calls

An SA button can have one of three attributes:

- Ring** Button is used to make and receive inside and outside ringing calls.
- Voice** Button is used to make and receive inside and outside calls. An inside call made on this button is a voice-announced call. If the person receiving the call has a speakerphone and it is not already in use or disabled by having Voice Announce to Busy turned off, the call arrives on the

speakerphone. Both parties hear a beep and the called person hears the caller's voice over the speakerphone. Since voice-announced calls cannot be made to single-line telephones, a call made on this button to a single-line telephone is a ringing call even if the single-line telephone has a speakerphone.

Originate Only Button is used only to make inside and outside calls. Calls are not ordinarily received on this button. Its purpose is to ensure that the user always has a button available to make or transfer calls, establish conference calls, answer Call Waiting calls, or pickup parked calls. The button can be programmed for either Ring or Voice operation for inside calls.

The default attribute for all **SA** buttons (including **Shared SA** buttons) after the factory settings by telephone type is Ring. The factory setting for Automatic Line Selection (ALS) is a sequence of **SA** buttons. Ringing for all types of **SA** buttons is set by default to Immediate Ring and can be changed to Delay Ring or No Ring. (See Ringing Options.)

Shared SA Buttons — Hybrid/PBX Mode

Each **SA button** (whether Ring, Voice, or Originate Only) assigned as a factory setting or through centralized telephone programming is identified with a specific extension. To allow two or more telephone users to join in each others' conversations and answer each others' calls, **Shared SA** buttons can be assigned. In a shared arrangement, the **SA** button identified with the extension is the *principal* (or primary) button. Up to 16 other multiline telephones can have **Shared SA** buttons corresponding to the principal extension. A telephone can have up to nine **Shared SA** buttons for other extensions, but can have only one **Shared SA** button for a given principal extension.

The green LED next to a **Shared SA** button behaves in the same way as on the principal extension. When the principal extension or any **Shared SA** button corresponding to it is busy on a call, the LED is on at the principal extension and at all **Shared SA** buttons for that extension. When a call arrives at the principal extension, that extension rings and the LED at its **SA** button flashes. All telephones with corresponding **Shared SA** buttons also ring, and the LED at the **Shared SA** button flashes.

The telephone user at the principal extension can use Send Ring. This feature overrides Delay Ring programmed for any telephones with **Shared SA buttons** for the principal extension. When a call arrives for the principal extension while it is busy, the telephones with the **Shared SA** buttons for that extension ring immediately.

When Do Not Disturb is turned on at the principal extension, calls do not ring at that extension or at other telephones with **Shared SA buttons** for that extension.

The principal extension or a **Shared SA** button can be used to join a conversation in progress. A maximum of three parties can participate in one call.

NOTE:

Shared SA buttons cannot be assigned to single-line telephones or other tip/ring equipment connected to an 012 or 008 OPT module. **Shared SA** buttons can be assigned to a tip/ring or external alert device connected to an MFM in an MLX telephone.

ICOM Buttons — Key and Behind Switch Modes

In Key mode and Behind Switch mode, telephones have **ICOM** buttons, which are used as follows:

- To dial the Idle Line Access code (usually 9) to select the first idle Personal Line assigned to the telephone (Key mode only)
- To make an inside call
- To activate a feature by using a feature code
- To receive inside calls, including voice-announced calls, and transferred outside calls

An **ICOM** button can have one of three attributes:

| | |
|-----------------------|---|
| Ring | Button is used to make inside ringing calls, to receive inside and transferred outside calls, and to dial the Idle Line Access code to select a Personal Line. |
| Voice | Button is used to make inside voice-announced calls, to receive inside ringing calls, and to dial the Idle Line Access code to select a Personal Line. If the person receiving an inside call made from this button has a speakerphone and it is not already in use or disabled by having Voice Announce to Busy turned off, the call arrives on the speakerphone. Both parties hear a beep and the called person hears the caller's voice over the speakerphone. Since voice-announced calls cannot be made to single-line telephones, a call made on this button to a single-line telephone is a ringing call even if the single-line telephone has a speakerphone. |
| Originate Only | Button is used only to make inside calls. Calls are not ordinarily received on this button. Its purpose is to ensure that the user always has a button available to make or transfer calls, establish conference calls, answer Call Waiting calls, or pick up parked calls. The button can be programmed for either Ring or Voice operation. |

The default attribute for all **ICOM** buttons after the factory settings by telephone type is Ring.

In Key mode, the factory setting for ALS for multiline telephones is a sequence of outside line buttons. The factory setting for ALS for single-line telephones selects an **ICOM** button.

In Behind Switch mode, the factory setting for ALS for both multiline and single-line telephones selects the Prime Line.

Ringling for all types of **ICOM** buttons is set by default to Immediate Ring and can be changed to Delay Ring or No Ring.

NOTE:

ICOM buttons are not shared.

Considerations and Constraints

At least one **SA** or **ICOM** button must be assigned to each station in the system.

SA or **ICOM** buttons can be assigned or removed only through centralized telephone programming.

On a multiline telephone, **SA** or **ICOM** buttons can be assigned only on buttons 1 through 10.

Any **SA** button can be the principal extension for up to 16 **Shared SA** buttons on other telephones, Any multiline telephone can have up to 9 **Shared SA** buttons, but can have only one **Shared SA** button for a given principal extension.

The maximum number of system users that can join a call on **Shared SA** buttons (including the principal extension) is three.

When a call is received at the principal extension, it rings on the principal extension's **SA** button as well as on all corresponding **Shared SA** buttons.

Shared SA buttons cannot be assigned to a single-line telephone, A single-line telephone cannot be the principal extension for a **Shared SA** button, unless the telephone is connected to an MFM.

Calls received on DID trunks ring on an **SA** button and on all **Shared SA** buttons for the receiving button.

Mode Differences

Hybrid/PBX Mode

SA buttons, including **Shared SA** buttons, are available only in Hybrid/PBX mode.

Key and Behind Switch Modes

ICOM buttons are available only in Key and Behind Switch modes.

Telephone Differences

Direct-Line Consoles

Each DLC is assigned one **SA Ring** or **ICOM Ring** and one **SA Voice** or **ICOM Voice** button. Additional **SA** or **ICOM** buttons cannot be assigned to a DLC. This includes **Shared SA** buttons corresponding to **SA** buttons on other telephones. In addition, the DLC cannot be the principal extension for **Shared SA** buttons on other telephones.

Queued Call Consoles

A Queued Call Console (QCC), which uses **Call** buttons, cannot be assigned **SA** buttons, including **Shared SA** buttons. (Neither can it be assigned **ICOM** buttons, since the QCC is available only in Hybrid/PBX mode.)

Other Multiline Telephones

In Hybrid/PBX mode, each multiline telephone (except for DLCs) and Multi-Function Module (MFM) is automatically assigned one **SA Ring**, one **SA Voice**, and one **SA Originate Only** button.

In Key and Behind Switch modes, each multiline telephone (including DLCs) and Multi-Function Module (MFM) is automatically assigned one **ICOM Ring** and one **ICOM Voice** button.

Single-Line Telephones

In Hybrid/PBX mode, each single-line telephone (or other device connected to an 012 or 008 OPT module) is automatically assigned two **SA Ring** buttons and one **SA Originate Only** button.

In Key and Behind Switch modes, each single-line telephone (or other device connected to an 012 or 008 OPT module) is automatically assigned two **ICOM Ring** buttons.

The default assignment of **SA** or **ICOM** buttons to single-line telephones is fixed and cannot be changed — no **SA** or **ICOM** buttons can be removed or added. A single-line telephone cannot be the principal extension for a **Shared SA** button, unless the telephone is connected to an MFM.

Feature Interactions

| | |
|----------------------------------|---|
| Auto Answer All | <p>When Auto Answer All is activated, all calls received at an SA Ring, ICOM Ring, SA Voice, or ICOM Voice, button can be answered automatically by the device connected to a GPA. If Shared SA buttons are assigned, they should be programmed for either Delay Ring or No Ring and the corresponding SA button at the principal extension should be programmed for Immediate Ring. This prevents calls to the principal extension from being answered simultaneously at the principal extension and at another telephone with a corresponding Shared SA button.</p> <p>Voice-announced calls received at an analog multiline telephone are not answered by a device connected via a GPA because ringing current is not sent to the device.</p> |
| Auto Answer Intercom | <p>When the Auto Answer Intercom feature is activated, a Hands Free Unit (HFU) cannot be used to answer calls on a Shared SA button.</p> |
| Automatic Line Selection | <p>SA buttons (including Shared SA buttons) or ICOM buttons can be programmed as part of an ALS sequence. Interleaving different button types (Personal Line, Pool, SA, or ICOM) is not recommended — for example, the sequence should include all SA or ICOM buttons first, then Pool, then line buttons.</p> |
| Automatic Route Selection | <p>When a call is made on a Shared SA button, the ARS Facility Restriction Level (FRL) that applies is the level programmed for the telephone with the button, not the level for the principal extension.</p> |
| Callback | <p>Callback can be used on an SA or ICOM button. When Callback is used on a Shared SA button, the Callback from the system rings and the LED next to the button flashes only at the telephone that originated Callback.</p> <p>If a user other than the person originating the Callback selects a Shared SA button with a queued Callback request and lifts the handset, the user hears the queuing tone and the green LED on the originator's telephone goes from flashing to on. If the user hangs up, the green LED on the originator's telephone goes back to flashing and the system directs the Callback call to the originator. If the user does not hang up, the system directs the Callback call to the user and not to the Callback originator.</p> |
| Calling Restrictions | <p>When a call is made on a Shared SA button, the calling restrictions that apply are those programmed for the telephone with the button, not those for the principal extension.</p> |

| | |
|------------------------------|--|
| Call Waiting | A telephone is considered busy when all SA or ICOM buttons (except for SA Originate Only or ICOM Originate Only) are in use. The user can dial the Call Waiting feature code to pick up a waiting call only when an SA Originate Only , Shared SA , or ICOM Originate Only button is available. |
| Conference | Calls on SA , Shared SA , or ICOM buttons can be included in a conference call. If a user involved in a conference call on an SA button also has a Shared SA button for one of the conference participants, the call is active at the SA button, not at the Shared SA button. |
| Coverage | <p>When a Primary Cover, Secondary Cover, or Group Cover button is programmed, a call received on an SA or ICOM button that is eligible for Individual or Group Coverage remains on the sender's SA or ICOM button until it is answered at the receiver's telephone. Once answered by a receiver, the call is removed from the sender's SA (including all Shared SA) or ICOM button. However, when a Calling Group is programmed as a Group Coverage receiver, the call is removed from the sender's telephone as soon as it is sent from the Calling Group queue to an available member.</p> <p>Calls received on Shared SA buttons are not eligible for Individual or Group Coverage.</p> <p>If a receiver has a Primary Cover, Secondary Cover, or Group Cover button for a sender and also has a Shared SA button associated with the sender, the green LEDs next to both the Cover button and the Shared SA button flash when a call arrives for the sender. In addition, the red LED stays on at the Shared SA button.</p> |
| Display | If a user with a display telephone calls an extension and the call is answered at a Shared SA button, the caller's display shows the principal extension, not the answering extension. |
| Do Not Disturb | When Do Not Disturb is turned on at the principal extension, calls do not ring at that extension or at other telephones with Shared SA buttons for that extension. |
| Forward and Follow Me | When a telephone user with Shared SA buttons forwards his or her calls, only calls to his or her extension are affected. Calls ringing on a Shared SA button are not forwarded. |
| Group Calling | <p>If a Calling Group member is busy on a Shared SA button, the principal extension is still considered available.</p> <p>If a delay announcement for a Calling Group is a principal extension that has Shared SA buttons on other telephones, and if a user uses a corresponding Shared SA button to join the announcement while a caller is listening to it, the call is removed from the Calling Group queue and both parties are connected. (The delay announcement is not disconnected until it finishes playing.)</p> |

If a user at a principal extension that has **Shared SA** buttons is waiting in the Calling Group queue, other users cannot use the corresponding **Shared SA** buttons to join the call.

- Hold** A call put on hold on an **SA** or **Shared SA** button can be picked up at the principal extension or at any telephone with a **Shared SA** button for that extension unless Privacy is turned on at the telephone that put the call on hold. Hold Reminder is heard only at the telephone that put the call on hold.
- Last Number Dial** If Last Number Dial is used on a **Shared SA** button, the number is stored on the telephone that used the feature, not on the principal extension.
- Line Request** Line Request cannot be used for an **SA** or **ICOM** button.
- Messaging** If a **Shared SA** button is used to leave a message for a display telephone user, the extension of the telephone with the **Shared SA** button is shown in the message, not that of the principal extension.
When a principal extension user with an MLX display telephone posts a message and a call is answered at the **Shared SA** button, the calling information is cleared from the principal extension. However, the Home screen on which the posted message is shown is not restored. If the principal extension user presses the **Home** button or makes or receives a call, the Home screen is restored.
- Multi-Function Module** It is recommended that one **SA Ring** or **ICOM Ring** button and one **SA Originate Only** or **ICOM Originate Only** button be assigned to the MFM. At least one **SA** or **ICOM** button must be assigned to the MFM.
Assigning a **Shared SA** button to an MFM creates a situation in which the principal extension can join a call that has already been answered by an answering machine connected to the MFM.
- Night Service** Night Service calls override any Ring Timing options (Delay Ring or No Ring) programmed for an **SA** button and ring immediately. On a **Shared SA** button, Night Service calls follow the programmed option (Immediate Ring, Delay Ring, or No Ring).
- Paging** Announcements using Speakerphone Paging can be made from a **Shared SA** button. However, users cannot join a page (as they can other calls) on a **Shared SA** button.
- Park** When a user parks a call made or received on an **SA** button, **Shared SA** buttons do not ring when the parked call returns.

| | |
|--------------------------|---|
| Privacy | If Privacy is turned on at a telephone with a Shared SA button, other users, including the principal extension and other corresponding Shared SA buttons, cannot join a conversation on the Shared SA button. If Privacy is turned on after another user joins the conversation, it does not affect that person, but no other users can join the conversation. |
| Recall | <p>Recall can be used on a ringing or answered inside call made on an SA or ICOM button. When the user is listening to a busy signal, Recall has no effect.</p> <p>Recall can be used by either the user with the principal SA button or by the user with a corresponding Shared SA button who has joined the call. In a Release 2.0 (or later) system, this includes an outside call on a loop-start trunk that was made or received on the SA or Shared SA button.</p> |
| Reminder Service | Reminder Service calls do not ring at Shared SA buttons. |
| Ringling Options | <p>Ring Timing options (Immediate Ring, Delay Ring, No Ring) cannot be programmed for SA Originate Only or ICOM Originate Only buttons, since they do not ordinarily receive calls.</p> <p>Incoming calls on a Shared SA button ring with the Personalized Ringing pattern programmed for the telephone with the button (not the principal extension).</p> <p>The principal extension of a Shared SA button can use Send Ring. This feature overrides Delay Ring programmed for any telephones with Shared SA buttons for the principal extension. When a call arrives for the principal extension when it is busy, the Shared SA buttons ring immediately.</p> |
| Saved Number Dial | If Saved Number Dial is used on a Shared SA button, the number is stored on the telephone that used the feature, not on the principal extension. |
| SMDR | When a call is made from a Shared SA button, the SMDR report records the extension from which the call was made, not the principal extension. |
| Transfer | <p>A transferred call returns only to the telephone that originated the transfer, whether from an SA or a Shared SA button.</p> <p>If a transfer originator has a Shared SA button for the person receiving the transfer, the LED next to the Shared SA button flashes to indicate a ringing call. However, if the transfer originator answers the call, it is disconnected.</p> |

System Renumbering

At a Glance

| | |
|---------------------------|--|
| Users Affected | Telephone users, operators |
| Reports Affected | Automatic Route Selection Dial Plan Extension Directory Extension Information Group Paging Operator Information Remote Access (DISA) Information |
| Mode | All |
| Telephones | All |
| System Programming | Change the 2-digit numbering plan to 3-digit or Set Up Space: <ul style="list-style-type: none"> ● SysRenumber → Default Numbering → 2-Digit/3-Digit/Set-up Space Renumber individual stations or groups of stations, Calling Group extensions, Group Page extension, pool dial-out codes, system operator Park Zones, the Listed Directory Number extension, the Remote Access code, the ARS access code, or assign the range of extensions on a DSS: <ul style="list-style-type: none"> ● SysRenumber → Single ● Sys Renumber → Block |
| Maximums | Numbering Range: 0-9950 |
| Factory Settings | |
| Numbering Plan | 2-digit |
| ARS/Idle Line Access Code | 9 (all numbering plans) |
| Calling Groups | 770-791 and 7920-7929 (all numbering plans) |
| DSS Page 1 button | starts with extension 0 |
| DSS Page 2 button | starts with extension 50 |
| DSS Page 3 button | starts with extension 100 |

Continued on next page

At a Glance *(continued)*

| | |
|------------------------------|--|
| Factory Settings (continued) | |
| Extra Adjuncts | 6900-6985 (2-digit plan) |
| Extra Stations | 6800-6885 (2-digit plan) |
| Listed Directory Number | 800 (all numbering plans) |
| MFMs | 710-767 (2-digit plan) 300-443 (3-digit plan) |
| Operator | 0 (not programmable) |
| Paging Groups | 793-799 (all numbering plans) |
| Park Zones | 881-888 (system operator only) |
| Pool | |
| Main Pool | 70 (all numbering plans) |
| Dial-In Tie Trunk | 891 (all numbering plans) |
| Automatic-In Tie Trunk | 892 (all numbering plans) |
| Remote Access Code | 889 (all numbering plans) |
| Stations | 10-67 (2-digit plan) 100-243 (3-digit plan) |
| Trunks | 801-880 (all numbering plans) |

Description

Overview

System Renumbering (Flexible Numbering in the MERLIN II Communications System) is the process of renumbering (reassigning) extension numbers to stations, adjuncts, trunks, telephones, range of extensions on a DSS, Automatic Route Selection, Calling Groups, Idle Line Access, Listed Directory Number, Paging Groups, Park Zones, Pools, and Remote Access.

When the system is turned on, it identifies the type of module installed in each slot in the control unit and automatically assigns extension numbers. When assigning extension numbers, the system begins with the lowest-numbered slot (with station jacks) and assigns numbers starting with the bottom (lowest) jack and moving consecutively up to the top jack. The system then moves to the next higher-numbered slot (with station jacks) and repeats the assigning process.

The factory default extensions are assigned 2-digit extension numbers starting with extension 10. If a user needs a specific extension number, it is simpler to connect the user's telephone to the station jack that is already assigned the requested extension number than it is to renumber the jack where the telephone is connected.

Both the number of digits and the extension numbers assigned by the system can be changed to individually address a company's needs. For example, extension numbers can match room numbers.

Whenever extension numbers are renumbered, the following must be considered:

- Extension numbers can contain digits 0 through 9 in any combination, except that no extension can begin with 0. Zero is a fixed extension representing the primary system operator. The system can also be programmed to associate 0 with a QCC operator position.
- Extension numbers can contain one to four digits and must be unique. If you renumber an extension number with one or two digits, you cannot use those digits as the leading digits for a longer extension number. For example, if extension numbers 1, 2, 30, and 40 are assigned to telephones, those numbers cannot be used as the first number in longer extension numbers such as 10, 200, 302, or 4052.
- Whenever an extension number is renumbered, the original extension number is available for use.
- The reserved system-assigned extension numbers (shown in Figure 34, Figure 35, and Figure 36) must be assigned a new extension number before the original extension number can be used for anything else.

The system offers three default numbering plans:

- 2-Digit
- 3-Digit
- Set Up Space

Each of the plans allows renumbering of all or selected extensions (single or block). The default numbering plans are shown in Figures 34-36 and are described in the following three sections.

NOTE:

The numbers in the unshaded blocks of Figures 34-36 are unused numbers that have been reserved for future expansion. These numbers can be assigned with System Renumbering.

2-Digit Numbering Plan

The 2-Digit numbering plan is the factory setting. This plan is designed for companies with less than 50 extensions that do not anticipate a need for more than 50 extensions in the next one or two years.

Figure 34 shows the numbers automatically assigned by the system.

| | | | | | |
|---|--|-------------------------------|-------------------|---|--------------------|
| 0 | Operator Console (not flexible) 0 | | | | |
| 1 | Stations 10---19 | | | | |
| 2 | Stations 20---29 | | | | |
| 3 | Stations 30---39 | | | | |
| 4 | Stations 40---49 | | | | |
| 5 | Stations 50---59 | | | | |
| 6 | Stations 60---67 | Extra Stations 6800---6885 | 6886- 6889 | Extra Adjuncts 6900---6985 | 6986- 6999 |
| 7 | Main Pool 70 | MFM's 710---767 | 768, 769 | Calling Group 770---791, 7920---7929 | Page 793---799 |
| 8 | 800* | Trunks 801---880 | Park 881---888 | 889** | Pools 890---899 |
| 9 | ARS Access (Hybrid/PBX Mode)/Idle Line Access 9 | | | | |

* Listed Directory Number (QCC Queue)
** Remote Access

Figure 34. 2-Digit Numbering Plan

The numbers in Figure 34 are arranged in rows according to the first digit. The type of equipment, jack, or feature to which they are assigned is indicated in each block within the row.

Each of the first 58 station jacks defaults to a 2-digit extension number beginning with 10 and ending with 67. The rest of the extensions (station jacks 68-144) are assigned the 4-digit extension numbers 6800-6885.

The extension numbers shown for Multi-Function Modules (MFM) (710-767) are reserved for digital station jacks. These numbers are automatically assigned by the system to MFM adjuncts (such as a data terminal, answering machine, or fax) connected to an MLX telephone using an MFM. For the first 58 digital station jacks (numbered 10 through 57), the extension number assigned to the MFM adjunct is the extension number assigned to the MLX telephone preceded by a 7. For example, if the extension assigned to an MLX telephone is 25, the extension for the MFM adjunct on that telephone is 725. In this example, a call can be made to the telephone by dialing 25 or to the adjunct by dialing 725.

Additional station jacks are shown in Figure 34 as Extra Stations (6800-6885) and additional MFMs are shown as Extra Adjuncts (6900-6985). If Extra Stations (station jacks) are assigned, the extension numbers for Extra Adjuncts are assigned by the system to MFM adjuncts. The extension number assigned to the MFM adjunct is the extension number assigned to the MLX telephone increased by 100. For example, if the extension assigned to an MLX telephone is 6800, the extension for the MFM adjunct on that telephone is 6900. In this example, a call can be made to the telephone by dialing 6800 or to the adjunct by dialing 6900.

NOTE:

- The extension numbers are reserved whether or not an MFM adjunct is connected to an MLX telephone.
- If you renumber the extension number of the telephone, the system does not automatically change the extension number of the MFM.

3-Digit Numbering Plan

The 3-digit numbering plan is designed for companies with more than 50 extensions. Figure 35 shows the numbers automatically assigned by the system when you renumber the system using the 3-Digit numbering plan.

| | | | | |
|---|--|---------------------|---|--------------------------|
| 0 | Operator Console (not flexible) 0 | | | |
| 1 | Stations 100---199 | | | |
| 2 | Stations 200---243 | 244-299 | | |
| 3 | MFMs 300---399 | | | |
| 4 | MFMs 400---443 | 444-499 | | |
| 5 | 500-599 | | | |
| 6 | 600-699 | | | |
| 7 | Main Pool 70 | 71-76 | Calling Group 770---791, 7920---7929 | Page 793---799 |
| 8 | 800* | Trunks 801---880 | Park 881---888 | 889** Pools 890---899 |
| 9 | ARS Access (Hybrid/PBX Mode)/Idle Line Access 9 | | | |

* Listed Directory Number (QCC Queue)
** Remote Access

Figure 35. 3-Digit Numbering Plan

Extensions default to a 3-digit extension number beginning with 100 and ending with 243.

The extension numbers shown for MFM (300-443) are reserved for digital station jacks. These numbers are automatically assigned by the system to adjuncts (such as a data terminal, answering machine, or fax) connected to an MLX telephone using an MFM or 7500B Data Module. The extension number assigned to the MFM adjunct is the extension number assigned to the MLX telephone increased by 200. For example, if the extension assigned for an MLX telephone is 125, the extension for the adjunct on that telephone is 325. In this example, a call can be made to the telephone by dialing 125 or to the adjunct by dialing 325.

NOTE:

- The extension numbers are reserved whether or not an MFM adjunct is connected to an MLX telephone.
- If you renumber the extension number of the telephone, the system does not automatically change the extension number of the MFM.

Set Up Space Numbering Plan

The Set Up Space numbering plan is designed for businesses that want to customize their system numbering plan and assign extension numbers that vary in length (1- to 4-digits). Variable length extension numbers may be more meaningful for the business or more convenient for users. 1-, 2-, 3-, and 4-digit numbers can be used in the same system. As an example, hotels and motels may want to renumber extensions to match room numbers, and to renumber extensions for services (such as Housekeeping or Room Service) to more convenient 1-digit extension numbers.

Figure 36 shows the numbers automatically assigned by the system when you renumber the system using the Set Up Space numbering plan. As shown in Figure 36, the system reassigns extension numbers beginning with 7100 and ending with 7243. This makes all numbers beginning with 1 through 6 available for use in renumbering extension numbers. These new extensions can be from one to four digits long.

| | | | | | | | |
|---|--|-------------------------|---------------|---------------------|-------------------|---|--------------------|
| 0 | Operator Console (not flexible) 0 | | | | | | |
| 1 | 100-199 | | | | | | |
| 2 | 200-299 | | | | | | |
| 3 | 300-399 | | | | | | |
| 4 | 400-499 | | | | | | |
| 5 | 500-599 | | | | | | |
| 6 | 600-699 | | | | | | |
| 7 | Main Pool 70 | Stations 7100---7243 | 7243- 7299 | MFMs 7300---7443 | 7444- 7699 | Calling Group 770---791, 7920---7929 | Page 793---799 |
| 8 | 800* | Trunks 801-880 | | | Park 881---888 | 889** | Pools 890---899 |
| 9 | ARS Access (Hybrid/PBX Mode)/Idle Line Access 9 | | | | | | |

* Listed Directory Number (QCC Queue)
** Remote Access

Figure 36. Set Up Space Numbering Plan

The extension numbers shown for MFMs (7300-7443) are reserved for digital station jacks. These numbers are automatically assigned by the system to adjuncts (such as a data terminal, answering machine, or fax) connected to an MLX telephone using an MFM. The actual extension number assigned to the

adjunct is the extension number assigned to the MLX telephone increased by 200. For example, if the extension for an MLX telephone is 7125, the extension for the MFM adjunct on that telephone is 7325. In this example, a call can be made to the telephone by dialing 7125 or to the adjunct by dialing 7325.

NOTE:

- The extension numbers are reserved whether or not an MFM adjunct is connected to an MLX telephone.
- If you renumber the extension number of the telephone, the system does not automatically change the extension number of the MFM.

Renumbering Extensions

The following table gives a brief overview of the extensions that can/cannot be renumbered and lists their factory settings.

Table 35. Renumbering Extensions

| Extensions | Renumbering Yes or No | Factory Settings |
|--|--------------------------|--|
| ARS Access Code or Idle Line Access Code | Yes | 9 |
| Calling Groups | Yes | 770-791 and 7920-7929 |
| DSS Page 1 button | Yes | starts with extension 0 |
| DSS Page 2 button | Yes | starts with extension 50 |
| DSS Page 3 button | Yes | starts with extension 100 |
| Extra Adjuncts | Yes | 6900-6985 (2-digit plan) |
| Extra Stations | Yes | 6800-6885 (2-digit plan) |
| Listed Directory Number* | Yes | 800 |
| MFM's | Yes | 710-767 (2-digit plan) 300-443 (3-digit plan) |

Continued on next page

* In the Hybrid/PBX mode, an extension is assigned to the Listed Directory Number (the published main number) for the QCC queue.

Table 35- Continued

| Extensions | Renumbering Yes or No | Factory Settings |
|----------------------------------|----------------------------------|--|
| Operator (Primary System or QCC) | No | 0 |
| Paging Groups | Yes | 793-799 |
| Park Zones | Yes | 881-888 (system operator only) |
| Pool | Yes | Main Pool: 70 Dial-in Tie Trunk: 891 Automatic-in Tie Trunk: 892 |
| Remote Access Code | Yes | 889 |
| Stations | Yes | 10-67 (2-digit plan) 100-243 (3-digit plan) |
| Trunks | Yes | 801-880 |

Single Renumbering

Single Renumbering should be used any time the extension numbers you are changing *to* or *from* are not sequential.

Single Renumbering can be used to assign a specified extension number to the following: stations, adjuncts, trunks, telephones, Automatic Route Selection Access Code, Calling Groups, Idle Line Access Code, Listed Directory Number, Paging Groups, Park Zones, Pools, and Remote Access Code.

In Release 1.0, when you used Single Renumbering to assign a specified extension number, the system was forced idle during the renumbering process. In Release 1.1 and later, the system is not forced idle when you renumber telephones, Automatic Route Selection Access Code, Calling Groups, Idle Line Access Code, Listed Directory Number, Paging Groups, Park Zones, Pools, and Remote Access Code. However, in Release 1.1 and later, when you renumber a station, an adjunct, or a trunk, the individual facility you are renumbering is forced idle during the renumbering process.

Block Renumbering

Block Renumbering can be used only when the extension numbers you are changing *from* and *to* are sequential. Block Renumbering can be used to assign extension numbers to a group of extensions, adjuncts, or lines.

When you renumber extensions using Block Renumbering the system is forced idle during the renumbering process.

DSS Renumbering

System Renumbering is used to assign the beginning extension number in a page. A page is the range of extension numbers that is assigned to a DSS. A single DSS can have three pages of extension numbers, with 50 extension numbers per page, for a total of 150 extension numbers. When two DSS are connected, each page's capacity is increased to 100 extension numbers. The two connected DSS can have three pages of extension numbers for a total of 300 extension numbers.

When the operator presses a **Page** button, the page of the DSS corresponds to a range of 50 (for a single DSS) or 100 (for two connected DSSs) extension numbers. The factory settings for **Page** buttons are as follows: the **Page 1** button begins with extension 0, the **Page 2** button begins with 50, and the **Page 3** button begins with 100.

If 2 DSSs are attached, the factory setting **must** be changed so that the difference between extensions assigned to the range is at least 100. For example, assign **Page 1** button to begin with extension 10, **Page 2** button to begin with extension 110, and **Page 3** button to begin with extension 210. **Page** button assignments should be sequential.

The beginning extension number associated with each **Page** button is the same for all system operator positions and cannot be programmed differently for individual system operator positions.

Each **Page** button can be programmed to begin with any extension number that is a multiple of 50 in the range of 0-9950. However, to speed call handling, it is recommended that the assignments be sequential—the range starting with the lowest extension number should be assigned to Page 1, the range starting with the next higher extension number should be assigned to Page 2, and the range starting with the highest extension number should be assigned to Page 3.

You cannot program individual buttons on a DSS.

Operator Park Zones must be included in the extension number range specified for one of the **Page** buttons.

Each of the 50 **DSS** buttons corresponds to one of three extension numbers. The specific extension number is determined by the **Page** button that the system operator presses. For example, if the first extension number for the **Page 1** button is programmed to be extension 100, the **DSS** buttons and associated LEDs on a single DSS correspond to extensions 100 to 149.

Remote Access Renumbering

The number assigned to the trunk can be programmed to allow use of the Remote Access Code. This programming allows users to call in on a trunk, using the Remote Access Code, and reach a system dial tone. From the system dial tone, users can call an extension, call a Calling Group, call a trunk number (if permitted), or make an outside call (if permitted).

Considerations and Constraints

Extensions do not need to be renumbered in the following cases:

- The default 2-digit extensions are acceptable.
- No special extension numbers are needed.
- There are less than 50 stations in the system.

Any extension number except 0 (system operator) can be renumbered. Trunk numbers (801–880) can be renumbered.

After an extension is renumbered, the original extension number is available for use. For example, after extension 32 is renumbered to 40, extension 32 is available for use.

System Renumbering should not be confused with Board Renumbering (on SPM), which is used when modules in the control unit are changed. For additional information on Board Renumbering, see *System Programming*.

Feature Interactions

| | |
|--------------------------------------|---|
| Automatic Route Selection | In the Hybrid/PBX mode, the Automatic Route Selection (ARS) access code (factory setting is 9) can be renumbered. |
| Ringling/Idle Line Preference | In Key and Behind Switch modes, the Idle Line Access code can be renumbered (the factory setting is 9). |

Timed Flash

See Recall/Timed Flash.

Toll Type

At a Glance

| | |
|--------------------|--|
| Users Affected | Telephone users, operators |
| Reports Affected | General Trunk Information |
| Mode | All |
| Telephones | All |
| System Programming | Designate whether or not a toll prefix is required: ● LinesTrunks → Toll Type |
| Factory Setting | Toll prefix required |

Description

Toll Type allows the system to classify calls as either local or toll, based on the number a user dials. The factory setting for Toll Type requires the user to dial a toll prefix (1 or 0) before dialing the area code and telephone number for a toll call. In some areas, a toll prefix is not necessary. The factory setting for Toll Type can be changed to specify that no toll prefix is required for these types of trunks.

Dialing a prefix depends on local telephone company requirements and the type of trunk being used.

Considerations and Constraints

Toll Type does not apply to tie trunks or Direct Inward Dialing (DID) trunks.

The local telephone company must be consulted to determine which of the system's trunks require a toll prefix.

Mode Differences

Hybrid/PBX

Systems that operate in the Hybrid/PBX mode and have Automatic Route Selection (ARS) always require the user to dial **1** before dialing a 10-digit toll call. Some 7-digit numbers may require dialing **1** as well.

Feature Interactions

- | | |
|----------------------------------|---|
| Automatic Route Selection | In certain areas, the local telephone company requires dialing the prefix 1 for certain exchanges. In these cases, the exchanges can be assigned to a 1+7 ARS table, and the 1+7 Dial setting must be set to "within area code." This dialing requirement is not related to Toll Type. |
| Disallowed Lists | When trunks with different toll types are connected to the system (for example, basic trunks and PRI facilities), a toll prefix (0 or 1) maybe required for toll calls on some trunks but not on other trunks. In this case, two Disallowed List entries are required to restrict users from dialing specific area codes and/or telephone numbers. For example, to restrict users from dialing calls in the 505 area code on both toll types, one entry must be 1505 and the other entry must be 505. When the Disallowed List is assigned to an extension, the 505 entry restricts users from making calls to the 505 area code on trunks that do not require a toll prefix and the 1505 entry restricts users from making calls (including local calls) to the 505 area code on trunks that do require a toll prefix. |

Touch-Tone or Rotary Signaling

At a Glance

| | |
|-----------------------------|---|
| Users Affected | Telephone users, operators |
| Reports Affected | DID Trunk Information GS/LS Trunk Information System Information Tie Trunk Information |
| Mode | All |
| Telephones | All |
| System Programming | Change individual trunk to rotary or touch-tone service: ● LinesTrunks → TT/LS Disc → Outmode Change individual tie trunk to rotary or touch-tone service: ● LinesTrunks → TIE Lines → Inmode Change individual tie trunk to rotary or touch-tone service: ● Lines Trunks → TIE Lines → Outmode Change DID trunk block to rotary or touch-tone signaling: ● LinesTrunks → DID → Signaling Change rotary signaling: ● Options → More → Rotary → Delay/No Delay |
| Factory Settings | |
| DID | Rotary |
| Loop-Start/ Ground-Start | Touch-tone |
| Tie | Rotary |
| Rotary Signaling | Delay |

Description

Touch-tone tip/ring equipment, such as single-line telephones or fax machines, are equipped with a dialpad that generates dual-tone multifrequency (DTMF) signals when a dial button is pressed. Analog multiline and MLX telephones are equipped with dialpads that generate digitally coded signals when a dial button is pressed. The duration of the signal sent is 50 milliseconds (50 ms) and is not adjustable.

A touch-tone receiver (TTR) is required to make calls from tip/ring equipment or to use the Remote Access feature. TTRs are provided on 400, 400 GS/LS/TTR, 800 DID, 008 OPT, and 012 modules. Normally, these TTRs are sufficient to handle the calls originated from these modules. However, additional TTRs may be needed to support the following services:

- Tie trunks and DS1 emulated tie trunks set for DTMF signaling
- Remote Access
- Account Code Entry
- IS-II/III AUDIX Voice Power
- IS-II/III Integrated Voice Power Automated Attendant
- IS-III Fax Attendant
- MERLIN MAIL
- MERLIN Attendant

If more TTRs are needed to support these services, 400 GS/LS/TTR modules can be added (each module provides four TTRs). Table 36 shows the estimated number of TTRs needed, depending on the call volume and the type of service. Table 36 is based on the assumption that the system already has basic telephones, Remote Access, and tie trunks.

Table 36. Number of TTRs Required

| Calls per Hour | No Acct Codes or VMS/AA | Acct Codes or VMS/AA | Acct Codes and VMS/AA |
|-----------------------|--|---------------------------------|----------------------------------|
| 110 | 2 | 4 | 6 |
| 180 | 4 | 6 | 8 |
| 350 | 4 | 8 | 10 |
| 420 | 6 | 8 | 10 |
| 610 | 6 | 10 | 12 |
| 710 | 8 | 10 | 14 |

The TTR is allocated for 15 seconds at the beginning of the call and decreases to 5 seconds as the number of digits dialed increases. Each time the user presses another digit, the TTR timer decreases. If the user does not dial a digit within the time frame, the TTR is removed from the call and, after about 24 seconds, the call is disconnected and the user hears a recording or a fast busy.

The system is factory-set to generate touch-tone signals for all trunks, except tie trunks, when users dial outside calls. The factory setting can be changed for individual rotary trunks so that touch-tone signals are converted to rotary pulses for transmission to the central office.

Rotary signaling can be set for Delay or No Delay. Delay is the factory setting, which makes the rotary pulse inaudible to the telephone user and delays sending the dialed number from the control unit to the trunk until the user is finished dialing.

Considerations and Constraints

Tie trunks are set up either to send signals to or receive signals from another PBX, or they are set up to be bidirectional—to send and receive signals. If the system has bidirectional tie trunks, the signaling can be set for both directions independently. For example, outgoing (outmode) signaling can be rotary and incoming (inmode) can be touch-tone. The local telephone company should be consulted for more information.

The audible feedback for touch-tones generated when a user presses a dialpad button can be heard by any user who shares a Personal Line or a **Shared SA** button with the telephone that is used to make a call. Therefore, when dialing confidential numbers such as passwords or account information, the user should take precautions, such as activating Privacy, to prevent others from hearing the touch-tones.

Touch-tone dial mode cannot be programmed for DID trunks that are immediate-start.

Touch-tone dial mode cannot be programmed for incoming, immediate tie trunks.

Touch-tone, single-line telephone users cannot make calls using individual trunks programmed for rotary operation. The touch-tone signals generated from the telephone while dialing are transmitted to the central office at the same time the rotary signals are sent by the system. The central office receives both signals and cannot process the call.

Mode Differences

In the Behind Switch mode, the factory setting for rotary signaling should be changed to No Delay.

Transfer

At a Glance

| | |
|----------------------|--|
| Users Affected | Telephone users, operators |
| Reports Affected | Operator Information SMDR System Information |
| Mode | All |
| Telephones | All |
| Programming Code | *774 (Behind Switch mode only) |
| MLX Display Label | Transfer [Trans] |
| System Programming | To program the Transfer button in Behind Switch mode: <ul style="list-style-type: none"> ● Options → Behind Switch → Transfer To specify how long a transferred call goes unanswered before returning: <ul style="list-style-type: none"> ● Options → Transfer → Return Time To assign One-Touch Transfer (with either Automatic or Manual Completion) or One-Touch Hold: <ul style="list-style-type: none"> ● Options → Transfer → One Touch → Transfer (Manual/Automatic)/Hold To select button type (Ring or Voice) to use for transfers: <ul style="list-style-type: none"> ● Options → Transfer → Type To specify either Music-on-Hold or ringback for the Transfer Audible: <ul style="list-style-type: none"> ● Options → Transfer → Audible |
| Factory Settings | |
| Transfer Return Time | 4 rings (range 1-9 rings, 0 = disabled) |
| One-Touch | Key and Hybrid/PBX—One-Touch Transfer with Automatic Completion Behind Switch—One-Touch Hold |
| One-Touch Transfer | Automatic Completion |
| Type of Transfer | Ring |
| Transfer Audible | |
| Outside callers | Music-on-Hold (if available) |
| Inside callers | Ringback (cannot be changed) |

Description

Users can transfer inside or outside calls to inside extensions or to outside numbers. Transferring an outside call to an outside number is called *trunk-to-trunk transfer*.

Calls can be transferred with or without consultation:

- A *transfer with consultation* can be made only to an inside extension. The user initiating the transfer calls the destination extension and speaks to the person at that extension before completing the transfer.

If the transfer is initiated on an **SA Voice** or **ICOM Voice** button, the transfer is called a *voice-announced transfer*. (See *Type of Transfer*, later in this section.) On a voice-announced transfer, the user initiating the transfer can speak to the person at the destination extension on that person's speakerphone before completing the transfer. When the transfer is completed, it arrives at the destination extension as a ringing call.

- A *transfer without consultation* can be made to an inside extension or an outside number. The user initiating the transfer completes the transfer before the person at the destination extension or number answers.

NOTE:

Queued Call Console (QCC) system operators ordinarily use the **Start** and **Release** buttons to transfer calls, rather than the Transfer process described in this section. For more information, see *Queued Call Console*.

The following system-programmed options determine how users can transfer calls:

- **Transfer Return Time.** If a transferred call is unanswered within a programmed number of rings, it rings back at the transfer originator's telephone. This Transfer Return Time can be set to a value of 1 to 9 rings, or 0 (the factory setting is 4 rings). If the Transfer Return Time is set to 0, a transferred call continues to ring until it is answered or the caller hangs up.

A returning transferred call continues to ring on the telephone it was transferred to and on the telephone that originated the transfer until either user answers or the caller hangs up.

Timing begins when the transfer is completed. If the transfer fails for any reason (such as an invalid destination), the Transfer Return Time is automatically set to 2 rings to allow a faster return unless the programmed value is 0 (no transfer return).

Returning transferred calls ring at the originating telephone with a distinctive ring (a three-ring pattern). Display telephone users also see the call type `Return` on the display.

NOTE

- A call transferred to an extension programmed as a fax port does not return to the originator, but continues to ring at the fax extension. This eliminates the possibility that a high-pitched fax tone would be heard by the person who answers the returning call.
- A call transferred to a Calling Group does not return, and the call appearance is cleared from the **SA** or **ICOM** button on the originator's telephone as soon as the transfer is completed (the call does not stay on hold).

- **One-Touch Transfer.** The system is programmed either for One-Touch Transfer (the factory setting in Hybrid/PBX mode and Key mode) or for One-Touch Hold (described below). With One-Touch Transfer, a telephone user or operator can transfer a call to another extension by pressing a programmed **Auto Dial** or Direct Station Selector (**DSS**) button for the extension. With this single press of a button, the active call is put on hold and the system automatically selects an **SA** or **ICOM** button and dials the transfer destination.

With One-Touch Transfer, the system is also programmed to complete transfers in one of the following ways:

- With **Automatic Completion** (the factory setting), a transfer is completed automatically as soon as the **Auto Dial** or **DSS** button is pressed. The call is removed from the telephone that initiated the transfer and begins ringing at the destination extension.

One-Touch Transfer with Automatic Completion does not allow a transfer with consultation. This type of transfer is always a ringing call, and voice announcements cannot be made. However, telephone users and operators can still initiate a transfer with consultation by pressing the **Transfer** button, then dialing the destination extension or pressing an **Auto Dial** or **DSS** button.

When a call is transferred using One-Touch Transfer with Automatic Completion to a busy extension or an extension using Do Not Disturb, the transfer is completed automatically even though the call cannot be connected. The call does not return to the transfer originator until the Transfer Return Time expires.

- With **Manual Completion**, the user completes the transfer by pressing the **Transfer** button or another line button, or by hanging up.

One-Touch Transfer with Manual Completion allows a transfer with consultation — the user can delay completing the transfer until the destination extension is answered.

- **One-Touch Hold.** If the system is not programmed for One-Touch Transfer, it is programmed for One-Touch Hold (the factory setting in Behind Switch mode). This transfer option applies to outside calls only. With One-Touch Hold, a telephone user or operator can transfer a call on an outside line button to another extension with a shared button for the same outside line. The user or operator presses an **Auto Dial** or **DSS** button for the extension to initiate the transfer, The outside call is put on hold and the system automatically selects an **SA** or **ICOM** button and dials the transfer destination. The user announces the call to the person at the destination extension, who completes the transfer by pressing the line button with the held call.

There is no transfer return function with One-Touch Hold, If the transfer destination does not answer or is busy, the person who initiated the transfer must notify the outside caller, or the call will remain on hold.

- **Type of Transfer.** The system can be programmed for automatic selection of either a ringing button— **SA Ring** or **ICOM Ring** (the factory setting) — or a voice-announced button — **SA Voice** or **ICOM Voice** — when a transfer is initiated. Type of Transfer does not apply to calls transferred to telephones outside the system.

If the system is programmed to select a ringing button and one is available, the call rings at the destination extension. If the system is programmed to select a voice-announced button and one is available, the person at the destination extension hears a voice announcement. If that person does not have a speakerphone, has turned off Voice Announce to Busy, or is already using the speakerphone, the call is converted to a ringing call. A transfer to an outside number is always a ringing call.

If the specified type of button is not available, the system automatically selects the next available **SA** or **ICOM** button. If no **SA** or **ICOM** button is available, the caller is put on hold for transfer and no line is selected. The user can then select a **Shared SA** button, an **SA Originate Only** or **ICOM Originate Only** button, wait for a free **SA** or **ICOM** button, or select an outside line button to transfer a call to an outside number.

The following types of calls ring at the telephone they are transferred to, regardless of the programmed Type of Transfer option:

- Calls that arrive after waiting in a Callback or Call Waiting queue
- Calls to busy extensions that do not have the Voice Announce to Busy capability
- Calls to a telephone with Voice Announce to Busy turned off
- Calls to a telephone whose speakerphone is in use
- Calls to single-line telephones
- Calls to a Calling Group
- Calls to a QCC operator

- **Transfer Audible.** The system can be programmed so that when outside callers are on hold for transfer, they hear ringback or Music-on-Hold (the factory setting), if available. Music-on-Hold changes to ringback when the transfer is completed. Inside callers always hear ring back.

If the Transfer Audible is programmed for Music-on-Hold, and if the person transferring a call hangs up before announcing it or uses Camp-On, the transfer is considered completed and the outside caller hears ringback instead of Music-on-Hold.

Considerations and Constraints

Calls transferred to outside numbers may vary in transmission quality.

Calls cannot be transferred to outside numbers on a loop-start trunk unless the trunk is programmed for Reliable Disconnect. (Reliable Disconnect indicates that a disconnect signal is sent by the local telephone company to the system shortly after a caller hangs up.)

The ability to transfer calls to outside numbers cannot be specifically blocked for an individual extension. However, Calling Restrictions or Disallowed Lists can be assigned to individual extensions to prevent outward or toll calls.

When an outside call is transferred to an outside number (trunk-to-trunk transfer), two outside lines are used for as long as the call is in progress.

When a call is transferred to an outside number, the system does not recognize the transfer until a dialing timeout occurs. The user can avoid a delay by dialing # after dialing the telephone number.

If any user tries to complete a transfer to an outside number, the call to the outside destination is disconnected under the following conditions. (The transfer originator does not receive an error tone to indicate that the transfer was denied.)

- The outside line used to make the call is a loop-start line programmed for Unreliable Disconnect.
- Another inside user joined the call and the call is now a conference call (which cannot be transferred).

When a call is received on a T1 channel that is programmed to emulate a loop-start trunk and then is transferred to an outside telephone number, it is not disconnected and remains on hold if the caller hangs up before the call is answered.

Except when One-Touch Hold is used, a transferred call always arrives on an **SA** or **ICOM** button or, when transferred to a QCC operator, on a **Call** button.

Calls cannot be transferred *from* an extension programmed as a fax port, but inside and outside calls can be transferred *to* a fax port. A call transferred to a fax port does not return to the originator, but continues to ring at the fax extension. This eliminates the possibility that a high-pitched fax tone would be heard by the person who answers the returning call.

If a multiline telephone user presses the **Feature** button after initiating a transfer, the dialed digits activate a feature (for example, Privacy). After the feature is activated, the user should redial the extension or telephone number to transfer the call.

Mode Differences

Behind Switch Mode

In Behind Switch mode, the Transfer feature of the host switch is used instead of the system's Transfer feature when the fixed **Transfer** button is pressed. However, the fixed **Transfer** button on an MLX or analog multiline telephone must be programmed through system programming to send a timed flash plus the code expected by the host to activate Transfer. The fixed button has no effect when pressed during an internal call (an Intercom/SA call within the communications system). If use of the communications system Transfer feature is also desired, it must be programmed on an available line button on each multiline telephone through extension programming or centralized telephone programming, and then can only be used when transferring within the local switch. (This option is not available in Hybrid/PBX or Key mode.)

One-Touch Hold is the factory setting in Behind Switch mode. The selection of One-Touch Transfer is not blocked in system programming, but the setting is always One-Touch Hold regardless of which option is chosen.

In Behind Switch Mode, Transfer Return Time and Type of Transfer apply only to internal transfers (Intercom/SA calls made within the communications system), in which the caller, the transfer originator, and the transfer destination are all system extensions.

Telephone Differences

Queued Call Consoles

The QCC operator uses the **Start** and **Release** buttons or a **DSS** button to transfer calls. However, pressing the **Transfer** button on a QCC is the same as pressing the **Start** button.

A QCC operator cannot make or receive voice-announced transfers.

When a QCC operator uses the **Start** and **Release** buttons to transfer a call, the QCC Return Ring Interval applies for transfer return timing instead of the Transfer Return Time. The QCC Return Ring Interval is the number of rings (1—15) before an unanswered extended call returns to the QCC queue. See Queued Call Console for additional details.

Single-Line Telephones

The One-Touch Transfer option does not apply to single-line telephones.

Single-line telephone users cannot make voice-announced transfers.

A single-line telephone user cannot transfer an outside call to an outside number. If the user tries to complete a trunk-to-trunk transfer, the caller remains on hold for transfer and the transfer destination is disconnected.

To make a transfer with consultation, the single-line telephone user presses and releases the **Recall** or **Flash** button or switchhook. The call is put on hold. The user then dials the destination extension. After consultation, the user hangs up and the call is transferred. If the transfer cannot be made, the user presses and releases the **Recall** or **Flash** button or switchhook to return to the caller.

To make a transfer without consultation, the single-line telephone user presses and releases the **Recall** or **Flash** button or switchhook, dials the extension or outside number, and hangs up. The call is transferred.

If a single-line telephone with a timed disconnect is used, for example, AT&T models 2500YMGK and 2500MMGK, pressing the switchhook disconnects the call. With this type of telephone, the **Recall** button must be used instead of the switchhook to transfer a call.

Feature Interactions

| | |
|---------------------------------|--|
| Auto Dial | Users can press inside Auto Dial buttons instead of dialing extension numbers to transfer calls. To use One-Touch Transfer, users must program an Auto Dial button for every extension to which they transfer calls. When a system operator transfers a call and it returns unanswered, the green LED next to the Auto Dial button flashes to indicate the extension from which the call is returning. Only system operators receive this indication. |
| Automatic Line Selection | The ALS sequence does not apply when the Transfer button is pressed. |
| Callback | <p>A queued Callback call cannot be transferred, but calls transferred to busy extensions are eligible for Callback. When a user reaches a busy extension while transferring a call, Automatic Callback or Selective Callback can be used to queue the call before completing the transfer. The caller hears ringback or Music-on-Hold.</p> <p>When the extension is available, the call is transferred to the extension automatically. If the extension is not available before the Transfer Return Time expires, the call is removed from the Callback queue and returned to the originator.</p> |

| | |
|--------------------------------|---|
| Call Waiting | <p>If a transfer is completed to a busy extension, the destination hears the Call Waiting tone, if programmed, and the caller hears Call Waiting ringback. The call waits in queue until the Transfer Return Time expires. Calls answered by using Call Waiting pickup cannot be transferred.</p> |
| Camp-On | <p>A transfer can be completed by using the Camp-On feature, whether or not the destination extension is busy. When the feature is used, the Camp-On Return Interval is used instead of the Transfer Return Time. The Camp-On Return Interval is normally longer.</p> <p>A transfer can be camped-on only to an inside extension. If a user presses the Camp-On button or dials the Camp-On feature code while transferring a call to an outside number, the call to the outside number is disconnected. The original call remains on hold.</p> |
| Conference | <p>A conference call cannot be transferred. However, a user who starts a conference sequence can complete it by pressing the Transfer button and transfer the original call instead of completing the conference. Likewise, if a transfer originator has one person on hold for transfer and, after dialing the destination extension or telephone number, decides to establish a conference call, he or she can press the Conference button to establish the conference instead of completing the transfer.</p> |
| Coverage | <p>Calls transferred to a sender are eligible for Individual and/or Group Coverage. However, if the sender is using Coverage On/Off to prevent calls from going to Coverage and does not have an available SA or ICOM button to receive a transferred call, the sender hears a Call Waiting tone, even if an Individual or Group Coverage receiver is available.</p> <p>Calls answered on a Primary Cover, Secondary Cover, or Group Cover button can be transferred, using One-Touch Transfer or the Transfer button.</p> <p>Transfer returns are not eligible for Individual or Group Coverage.</p> |
| Direct Station Selector | <p>DSS buttons can be used to transfer outside calls using One-Touch Hold only by a DLC operator; a QCC operator cannot use this feature. When One-Touch Hold is programmed, if a DLC operator presses a DSS button with an inside caller on the line or, in Hybrid/PBX mode, with an outside caller on an SA button, the call is not put on hold. A beep is sent to the extension instead.</p> <p>When One-Touch Transfer (with either Automatic Completion or Manual Completion) is programmed, if the system operator presses a DSS button while a caller is on the line, and no SA or</p> |

ICOM button is available to transfer the call, the call does not go on hold. If the operator hangs up, the caller is disconnected.

Display

When an MLX display telephone user presses the **Transfer** button, the display prompts the user to dial the extension number and shows the digits as they are dialed. When dialing is completed, the display shows the name of the person at the destination extension, if labels are programmed.

Transfer return calls are identified by call type and by the name and extension number to which the call was transferred. The second line of the display also shows the caller information.

When an MLX display telephone user receives a transferred call, the display shows the type of call and the caller information on Line 1. When an inside call is being transferred, the display shows the extension number or trunk number. When an outside call is being transferred, the line the call came in on or the caller's telephone number, if Automatic Number Identification (ANI) is available, is shown. The transfer originator is shown on Line 2.

When an MLX display telephone user makes a voice-announced transfer, the display on his or her telephone shows *Announce to*. After the transfer is completed, the user's display shows *Call Transferred*.

When an MLX display telephone user does not complete a transfer (for example, because Do Not Disturb is on at the destination extension), the call returns to the originator's telephone and call information is displayed. The reason for the incomplete transfer is not indicated.

Do Not Disturb

If a call is transferred to an extension that has Do Not Disturb on and that has neither forwarding on nor Coverage receivers, the call returns to the transfer originator immediately. If there are Coverage receivers, the transfer returns to the originator after the Transfer Return Time expires.

Forced Account Code Entry

When a call is transferred, the destination extension cannot enter an account code or overwrite the account code entered at the originating telephone.

Forward/Follow Me

Transferred inside and outside calls are forwarded. If a user transfers a call to an extension with Forward activated, the person receiving the forwarded calls hears one ring, indicating an inside call. In addition, if the person has a display telephone, he or she sees the call information for an inside call.

Group Calling

A call transferred to a Calling Group does not return to the originator; the call is handled just as any other call received in the Calling Group queue. For example, the system follows the

programmed hunt sequence to locate an available Calling Group member, and the call is eligible for a delay announcement if one is programmed.

A Calling Group member is considered available for a call while in the process of transferring a call.

Voice-announced transfers cannot be made to a Calling Group. There is no limit to the number of calls that can be transferred to a Calling Group.

When an inside caller is transferred to a Calling Group and no members are available, the caller hears regular ringback.

When an outside caller is transferred to a Calling Group and no members are available, the caller hears regular ringback or Music-on-Hold, if programmed.

If a call being transferred to a Calling Group is on an **SA** or **ICOM** button, the button is cleared.

Headset Options When an MLX telephone user (except for a QCC operator) transfers a call, Headset Auto Answer is turned off and must be turned on manually to resume using the feature.

Hold Calls on hold for transfer are timed so that the user or system operator hears a reminder after the timer expires.
If a call is received on a Personal Line and is transferred to another user who then puts the call on hold, another user who shares the Personal Line cannot select the line button to pick up the call. If the person who received the transfer and put the call on hold cannot return to the call, another user must use the Line Pickup feature to pick up the call.

Inspect If an MLX telephone user presses the **Transfer** button while in Inspect mode, Inspect is canceled and the user is returned to the Home screen.

Last Number Dial The Last Number Dial feature can be used to originate a transfer to an outside telephone number.

Line Request Returning transferred calls cancel Line Request.

Messaging A non-display telephone user who uses Leave Message to send a message while a transfer is in progress cannot determine who received the message.

For example, if extension A calls extension B, and extension B transfers the call to extension C, and if extension A sends a message before the transfer is completed, extension B receives the message. If extension A sends a message after extension B completes the transfer, extension C receives the message, even if extension C does not answer and the call is ringing at extension B as a transfer return.

| | |
|------------------------------|---|
| | <p>If an inside call is transferred to a telephone with a Posted Message, only the display telephone user who transfers the call sees the message. The original caller does not see the Posted Message even after the transfer is completed.</p> <p>If a call is transferred to an extension programmed as a fax port, the message indication is not sent to the fax message-waiting receiver, regardless of the amount of time programmed for the fax message-waiting threshold.</p> |
| Microphone Disable | A call can be transferred with a voice announcement to a users whose microphone is disabled, but the user must lift the handset to talk. |
| Multi-Function Module | Calls cannot be transferred from an MFM because the MFM cannot send a switchhook flash. |
| Music-on-Hold | An outside caller hears Music-on-Hold if it is programmed for Transfer Audible. Music is played only during the time before the transfer is completed by the originating extension. The caller hears music when the Transfer button is pressed and while the destination extension is being dialed. When the transfer originator presses the Transfer button a second time or hangs up, the caller hears ringback. |
| Paging | Calls cannot be transferred to Paging Groups or the Loudspeaker Paging extension. |
| Park | A user can park calls by pressing the Transfer button and dialing his or her own extension. A DLC operator can also press Transfer and dial a system operator Park Zone extension. When either of these methods are used, the transfer must be completed by pressing the Transfer button or hanging up. This method cannot be used by QCC operators. |
| Pickup | A transferred call can be answered by using the Pickup features. |
| Recall | A single-line telephone user with a Recall button can use it to transfer a call. |
| Ringling Options | Transfer returns ring until answered and do not receive Abbreviated Ring. Ring Timing Options are ignored on a Transfer Return call; the button rings immediately even if it is programmed for No Ring. |
| Saved Number Dial | The Saved Number Dial feature can be used to originate a transfer to an outside telephone number. |
| Signaling | A Signaling button can be used to dial the destination extension after the Transfer button is pressed, but cannot be used to initiate One-Touch Transfer. |

| | |
|--|--|
| Speed Dial | Both Personal Speed Dial and System Speed Dial can be used to dial a transfer destination. |
| SMDR | The number of the extension that hangs up on an incoming outside call is shown in the <i>STN</i> field of the Station Message Detail Recording (SMDR) report, regardless of how many times the call is transferred. For a call to an outside number, the extension that dialed the call is shown on the SMDR report, even if the call is then transferred to another extension. |
| System Access/ Intercom Buttons | <p>Transferred calls always arrive on SA or ICOM buttons. The only exception is that when One-Touch Hold is used, the transferred outside call stays on hold on an outside line button until it is picked up. When a transfer is initiated, the system automatically selects an SA or ICOM button. (A Shared SA button is not automatically selected.) If no button is available, the caller is put on hold for transfer and no line is selected. The user can then select a Shared SA button or an SA Originate Only or ICOM Originate Only button, wait for a free SA or ICOM button, or select an outside line button to transfer a call to an outside number.</p> <p>A transferred call that returns to the principal extension does not ring on any corresponding Shared SA buttons. If a transfer originator has a Shared SA button for the person receiving the transfer, the LED next to the Shared SA button flashes to indicate a ringing call. However, the call is disconnected if the transfer originator answers.</p> |

Voice Announce to Busy

At a Glance

| | |
|--------------------|--|
| Users Affected | Telephone users, DLC operators |
| Reports Affected | Extension Directory Extension Information |
| Mode | All |
| Telephones | All except QCC and single-line telephones |
| Programming Code | |
| Receive On | *10 |
| Receive Off | **10 |
| MLX Display Label | Voice Annce,Receive,On [Voice,Recv,On] Voice Annce,Receive,Off [Voice,Recv,Off] |
| System Programming | Extensions → VoiceSignl |
| Factory Setting | Voice announcements on |

Description

Voice Announce to Busy allows MLX and analog multiline telephone users to receive inside calls on their speakerphones, even if they are on a call. A telephone user can turn off all incoming voice announcements — calls made from an **SA Voice** or **ICOM Voice** button on another extension or Group Page calls.

When Voice Announce to Busy is turned on at an extension and the handset at that extension is in use, an inside caller can reach that extension by speaking on its speakerphone. When Voice Announce to Busy is turned off at an extension, no caller can turn on that extension's speakerphone. However, the user at that extension can still make calls and speak on the speakerphone.

Voice Announce to Busy requires two communication channels between the control unit and the telephone, one for voice-announced calls and one for ringing calls. Turning off the feature at an extension converts the second, voice-announced, channel into a ringing channel. Calls made to the extension as voice-announced calls arrive as ringing calls instead.

For an MLX telephone, Voice Announce to Busy is automatically available because the MLX station jack provides two communication channels. For an analog multiline telephone, enabling the feature requires assigning two consecutive station jacks to the telephone. The extension assigned to the odd-numbered jack is the telephone's extension; the extension assigned to the next higher even-numbered jack is used for voice announcements and cannot be dialed. Single-line telephones, such as an 8100, cannot receive voice-announced calls even if the set has a speakerphone.

When a caller makes a voice-announced call to an extension with Voice Announce to Busy, the caller hears a tone and the called person hears a beep and the caller's voice over the speakerphone unless one of the following is true:

- The called person is already using the speakerphone. In this case, the caller hears ringback and the called person hears an abbreviated ring, if programmed.
- The called person has turned off Voice Announce to Busy. In this case, the caller hears ringback and the called person hears ringing for an inside call.
- The called person has turned on Do Not Disturb. The caller hears a busy signal and, if the caller has a display telephone, sees the message Do Not Disturb.

Considerations and Constraints

By turning off Voice Announce to Busy, MLX and analog multiline telephone users can prohibit all voice announcements to their telephones.

When a user turns off Voice Announce to Busy, the Hands Free Answer on Intercom (HFAI) capability is also turned off.

Telephone Differences

Queued Call Consoles

Voice Announce to Busy is turned off on a QCC and cannot be turned on. In addition, voice-announced transfers cannot be made from the QCC.

Other Multiline Telephones

Voice Announce to Busy is available only on multiline telephones. The feature is automatically available on an MLX telephone. An analog multiline telephone requires an additional station jack.

The MLC-5 cordless telephone cannot receive voice-announced calls. However, Voice Announce to Busy is not automatically turned off for this type of telephone. If a multiline telephone user tries to make a voice-announced call to an MLC-5 telephone on which Voice Announce to Busy has not been turned off, the MLC-5 beeps. The MLC-5 user can then answer the call using the handset.

Single-Line Telephones

Single-line telephone users cannot receive voice announcements, even if the set has a speakerphone.

Feature Interactions

Do Not Disturb A user with Do Not Disturb on does not receive voice announcements.

HFAI When Voice Announce to Busy is turned on, HFAI is disabled.

Paging A user who turns off Voice Announce to Busy does not receive group pages.

Volume

At a Glance

| | |
|----------------|----------------------------|
| Users Affected | Telephone users, operators |
| Mode | All |
| Telephones | MLX telephones |

Description

The **Volume** button on the MLX-10, MLX-10D, MLX-20L, and MLX-28D telephones controls the volume levels for ringing, conversations on the handset, and conversations on the speakerphone. The user can set each of these volume levels independently of the others, and it will stay as set until the user changes it again.

The user presses the side of the **Volume** button labeled ▲ to raise the volume and the side labeled ▼ to lower it, as follows:

- Change the ringing volume while the phone is ringing.
- Change the handset volume while on a call using the handset.
- Change the speakerphone volume while on a call using the speakerphone.

Telephone Differences

Only MLX telephones have a **Volume** button.

Feature and Planning Forms



This appendix contains an alphabetical list of the features that can be assigned to the system or telephones and the planning forms associated with each feature.

Features and Planning Forms

| Feature | Planning Form |
|--|--|
| Abbreviated Ring (<i>See Ringing Options</i>) | |
| Account Code Entry/ Forced Account Code Entry | 4b — Analog Multiline Telephone 4d — MLX Telephone 4e — MFM Adjunct—MLX Telephone 4f — Tip/Ring Equipment 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital 5c — MFM Adjunct—DLC 5d — Queued Call Console (QCC) Data Form 2a — Analog Data Station Data Form 2b — Digital Data Station |
| Alarm | 2c — System Numbering—Trunk Jacks 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital |

| Feature | Planning Form |
|---|--|
| Allowed/Disallowed Lists | 3a — Incoming Trunks—Remote Access 4b — Analog Multiline Telephone 4d — MLX Telephone 4e — MFM Adjunct—MLX Telephone 4f — Tip/Ring Equipment 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital 5c — MFM Adjunct—DLC 5d — Queued Call Console (QCC) 6g — Allowed Lists 6h — Disallowed Lists 6i — Call Restriction Assignments and Lists 7b — Night Service—Outward Restriction Data Form 2a — Analog Data Station Data Form 2b — Digital Data Station |
| Auto Answer All | Button diagrams on all appropriate telephone forms |
| Auto Answer Intercom | Button diagrams on all appropriate telephone forms |
| Auto Dial | Button diagrams on all appropriate telephone forms |
| Automatic Line Selection and Ringing/Idle Line Preference | 4b — Analog Multiline Telephone 4d — MLX Telephone 4e — MFM Adjunct—MLX Telephone 4f — Tip/Ring Equipment 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital 5c — MFM Adjunct—DLC |
| Automatic Maintenance Busy | 1 — System Planning |
| Automatic Route Selection (Facility Restriction Level) | 3a — Incoming Trunks—Remote Access 4b — Analog Multiline Telephone 4d — MLX Telephone 4e — MFM Adjunct—MLX Telephone 4f — Tip/Ring Equipment 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital 5c — MFM Adjunct—DLC 6i — Call Restriction Assignments and Lists |
| <i>(continued)</i> | |

| Feature | Planning Form |
|---|--|
| Automatic Route Selection (Facility Restriction Level) <i>(continued)</i> | 9a — Automatic Route Selection Worksheet 9b — Automatic Route Selection Tables 9c — Automatic Route Selection Default and Special Numbers Tables Data Form 2a — Analog Data Station Data Form 2b — Digital Data Station |
| Barge-In | Button diagrams on all appropriate telephone forms |
| Callback | 3a — Incoming Trunks—Remote Access 4b — Analog Multiline Telephone 4d — MLX Telephone 4e — MFM Adjunct—MLX Telephone 4f — Tip/Ring Equipment 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital 5c — MFM Adjunct—DLC 6f — System Features |
| Calling Restrictions | 3a — Incoming Trunks—Remote Access 4b — Analog Multiline Telephone 4d — MLX Telephone 4e — MFM Adjunct—MLX Telephone 4f — Tip/Ring Equipment 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital 5c — MFM Adjunct—DLC 5d — Queued Call Console (QCC) 6g — Allowed Lists 6h — Disallowed Lists 6i — Call Restriction Assignments and Lists 7b — Night Service-Outward Restriction Data Form 2a — Analog Data Station Data Form 2b — Digital Data Station |
| Call Waiting | Not Applicable |
| Camp-On | 6f — System Features Button diagrams on all appropriate telephone forms |
| Centrex Operation | 1 — System Planning Button diagrams on all appropriate telephone forms |

| Feature | Planning Form |
|-----------------------------|---|
| Conference | 1 — System Planning Button diagrams on all appropriate telephone forms |
| Coverage | 4b — Analog Multiline Telephone 4d — MLX Telephone 4e — MFM Adjunct—MLX Telephone 4f — Tip/Ring Equipment 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital 5c — MFM Adjunct—DLC 6a — Optional Operator Features 6d — Group Coverage 6e — Group Calling Button diagrams on all appropriate telephone forms |
| Direct-Line Console | 1 — System Planning 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital 5c — MFM Adjunct—DLC 6a — Optional Operator Features |
| Directories | 2a — System Numbering—Station Jacks 8b — System Speed Dial |
| Direct Station Selector-MLX | 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital 6a — Optional Operator Features |
| Display | Not Applicable |
| Do Not Disturb | Button diagrams on all appropriate telephone forms |
| Drop | 1 — System Planning Button diagrams on all appropriate telephone forms |
| Extension Status | 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital 6f — System Features |

| Feature | Planning Form |
|---|--|
| Forward and Follow Me (Remote Call Forward) | 4b — Analog Multiline Telephone 4d — MLX Telephone 4e — MFM Adjunct—MLX Telephone 4f — Tip/Ring Equipment 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital 5c — MFM Adjunct—DLC 6a — Optional Operator Features Button diagrams on all appropriate telephone forms |
| Group Calling | 2d — System Numbering—Special Renumbers 6e — Group Calling 6f — System Features 7a — Night Service—Group Assignment Data Form 3 — Data Hunt Groups |
| Headset Options | 4b — Analog Multiline Telephone 4d — MLX Telephone 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital 5d — Queued Call Console (QCC) Button diagrams on all appropriate telephone forms |
| Hold | 2C — System Numbering—Trunk Jacks 6a — Optional Operator Features 6f — System Features |
| Idle Line Preference <i>(See Automatic Line Selection and Ringing/Idle Line Preference)</i> | |
| Inside Dial Tone | 6f — System Features |
| Inspect | Not Applicable |
| Integrated Administration | 1 — System Planning 2c — System Numbering—Trunk Jacks 2d — System Numbering—Special Renumbers 6e — Group Calling 6f — System Features 7a — Night Service—Group Assignment 7b — Night Service-Outward Restriction |
| | |

| Feature | Planning Form |
|--|--|
| Labeling | 2a — System Numbering—Station Jacks 2c — System Numbering—Trunk Jacks 2d — System Numbering—Special Renumbers 8a — Label Form—Posted Message 8b — System Speed Dial |
| Language Choice | 1 — System Planning 4d — MLX Telephone 5b — Direct-Line Console (DLC)—Digital 5d — Queued Call Console (QCC) |
| Last Number Dial | Button diagrams on all appropriate telephone forms |
| Line Request | Not Applicable |
| Messaging (Message Waiting Receivers) | 4b — Analog Multiline Telephone 4d — MLX Telephone 4e — MFM Adjunct—MLX Telephone 4f — Tip/Ring Equipment 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital 5c — MFM Adjunct—DLC 5d — Queued Call Console (QCC) 6a — Optional Operator Features 6e — Group Calling 8a — Label Form—Posted Message |
| Microphone Disable | 4d — MLX Telephone 5b — Direct-Line Console (DLC)—Digital |
| Multi-Function Module | 2a — System Numbering—Station Jacks 2b — System Numbering—Digital Adjuncts 4d — MLX Telephone 4e — MFM Adjunct—MLX Telephone 5b — Direct-Line Console (DLC)—Digital 5c — MFM Adjunct—DLC |
| Music-on-Hold | 2c — System Numbering—Trunk Jacks 6f — System Features |
| | |

| Feature | Planning Form |
|---------------------------------|--|
| Night Service | 7a — Night Service—Group Assignment 7b — Night Service—Outward Restriction 7c — Night Service—Time Set |
| Notify (<i>See Signaling</i>) | |
| Paging | 2c — System Numbering—Trunk Jacks 2d — System Numbering—Special Renumbers 4b — Analog Multiline Telephone 4d — MLX Telephone 4e — MFM Adjunct—MLX Telephone 4f — Tip/Ring Equipment 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital 5c — MFM Adjunct—DLC 5d — Queued Call Console (QCC) 6c — Group Paging |
| Park | 2d — System Numbering—Special Renumbers 6a — Optional Operator Features 6f — System Features Button diagrams on all appropriate telephone forms |
| Personal Lines | 4b — Analog Multiline Telephone 4d — MLX Telephone 4e — MFM Adjunct—MLX Telephone 4f — Tip/Ring Equipment 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital 5c — MFM Adjunct—DLC |
| Pickup | 4b — Analog Multiline Telephone 4d — MLX Telephone 4e — MFM Adjunct—MLX Telephone 4f — Tip/Ring Equipment 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital 5c — MFM Adjunct—DLC 5d — Queued Call Console (QCC) 6b — Call Pickup Groups |
| | |

| Feature | Planning Form |
|------------------------------|--|
| Pools | 2c — System Numbering—Trunk Jacks 2d — System Numbering—Special Renumbers 4b — Analog Multiline Telephone 4d — MLX Telephone 4e — MFM Adjunct—MLX Telephone 4f — Tip/Ring Equipment 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital 5c — MFM Adjunct—DLC 5d — Queued Call Console (QCC) 9a — Automatic Route Selection Worksheet 9b — Automatic Route Selection Tables 9c — Automatic Route Selection Default and Special Numbers Tables Data Form 1a — Modem Pool— Analog to Digital Data Form 1b — Modem Pool— Digital to Analog Data Form 2a — Analog Data Station Data Form 2b — Digital Data Station |
| Power Failure Transfer | Not Applicable |
| Primary Rate Interface (PRI) | 3b — Incoming Trunks—DS1 Connectivity (100D Module) |
| Privacy | Button diagrams on all appropriate telephone forms |
| Programming | 1 — System Planning |
| Queued Call Console | 1 — System Planning 2d — System Numbering—Special Renumbers 5d — Queued Call Console (QCC) 6a — Optional Operator Features 6d — Group Coverage 6e — Group Calling 6f — System Features |
| Recall/Timed Flash | 1 — System Planning Button diagrams on all appropriate telephone forms |
| Reminder Service | 6f — System Features Button diagrams on all appropriate telephone forms |

| Feature | Planning Form |
|--|---|
| Remote Access | 2d — System Numbering—Special Renumbers 3a — Incoming Trunks—Remote Access |
| Ringing/Idle Line Preference <i>(See Automatic Line Selection and Ringing/Idle Line Preference)</i> | |
| Ringing Options | 4b — Analog Multiline Telephone 4d — MLX Telephone 4e — MFM Adjunct—MLX Telephone 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital 5c — MFM Adjunct—DLC |
| Saved Number Dial | Button diagrams on all appropriate telephone forms |
| Signal/Notify | Button diagrams on all appropriate telephone forms |
| Speed Dial | 8b — System Speed Dial |
| Station Message Detail Recording (SMDR) | 6f — System Features |
| System Access/Intercom Buttons | Button diagrams on all appropriate telephone forms |
| System Renumbering | 2a — System Numbering—Station Jacks 2b — System Numbering—Digital Adjuncts 2c — System Numbering—Trunk Jacks 2d — System Numbering—Special Renumbers 6a — Optional Operator Features 6c — Group Paging 6e — Group Calling |
| Toll Type | 2c — System Numbering—Trunk Jacks 9a — Automatic Route Selection Worksheet |
| Touch-Tone or Rotary Signaling | 2c — System Numbering—Trunk Jacks 3c — Incoming Trunks—Tie 3d — Incoming Trunks—DID 6f — System Features |
| | |

| Feature | Planning Form |
|---|--|
| Transfer | 1 — System Planning 6a — Optional Operator Features 6f — System Features Button diagrams on all appropriate telephone forms |
| Voice Announce to Busy (Simultaneous Voice/Data) | 4b — Analog Multiline Telephone 4d — MLX Telephone 5a — Direct-Line Console (DLC)—Analog 5b — Direct-Line Console (DLC)—Digital Data Form 1a—Modem Pool—Analog-to-Digital Data Form 1b—Modem Pool—Digital-to-Analog |
| Volume | Not Applicable |

System Features

B

This appendix provides an alphabetical list of system-wide features and outlines their availability by mode. This list also includes notes, where appropriate, which briefly describe mode differences and specific release availability. For information on feature use on the MLX, analog multiline, and single-line telephones, see Appendix C, “General Feature Use and Telephone Programming.”

System Features

| Feature | Availability by Mode | | | Notes |
|-----------------------------------|----------------------|----------------|------------------|---|
| | Key | Hybrid/ PBX | Behind Switch | |
| Automatic Line Selection | ✓ | ✓ | ✓ | |
| Automatic Maintenance Busy | ✓ | ✓ | ✓ | |
| Automatic Route Selection (ARS) | | ✓ | | with trunk pools only |
| Call-by-Call Service Selection | | ✓ | | Release 2.0 and later |
| Call Waiting | ✓ | ✓ | ✓ | |
| Callback | ✓ | ✓ | ✓ | Key and Behind Switch: not available for outside lines |
| Calling Restrictions | ✓ | ✓ | ✓ | Hybrid/PBX: can deny access to trunk pools |
| Camp-On | ✓ | ✓ | ✓ | |
| Conference | ✓ | ✓ | ✓ | |
| Coverage | ✓ | ✓ | ✓ | |
| Coverage VMS | ✓ | ✓ | ✓ | Release 2.0 and later |
| Delay Ring Interval | ✓ | ✓ | ✓ | |
| Direct-Line Console (DLC) Options | ✓ | ✓ | ✓ | Hybrid/PBX: cannot have trunk pool access buttons |
| Directories | ✓ | ✓ | ✓ | |
| Direct Inward Dial Trunk Options | | ✓ | | |
| DS1 Module Options | ✓ | ✓ | ✓ | |
| Extension Status | ✓ | ✓ | ✓ | |
| Forced Account Code Entry | ✓ | ✓ | ✓ | Behind Switch: unavailable for single-line telephones Hybrid/PBX and Behind Switch: must enter account code before dial-out code |
| Group Call Coverage | ✓ | ✓ | ✓ | |

System Features

| Feature | Availability by Mode | | | Notes |
|--|----------------------|----------------|------------------|--|
| | Key | Hybrid/ PBX | Behind Switch | |
| Group Calling | ✓ | ✓ | ✓ | Behind Switch: calls do not follow the telephone company's central office ring pattern |
| Headset Status | ✓ | ✓ | ✓ | |
| Hold Disconnect Interval | ✓ | ✓ | ✓ | |
| inside Dial Tone | ✓ | ✓ | ✓ | |
| Labeling | ✓ | ✓ | ✓ | |
| Language Choice | ✓ | ✓ | ✓ | Release 1.1 and later |
| Line/Trunk Options | ✓ | ✓ | ✓ | |
| Loudspeaker Paging | ✓ | ✓ | ✓ | |
| Microphone Disable | ✓ | ✓ | ✓ | |
| Night Service | ✓ | ✓ | ✓ | |
| Paging Groups | ✓ | ✓ | ✓ | |
| Park | ✓ | ✓ | ✓ | |
| Pickup Groups | ✓ | ✓ | ✓ | |
| Pools (trunk group) | | ✓ | | |
| Primary Rate Interface (PRI) Options | ✓ | ✓ | ✓ | Release 2.0 and later |
| Queued Call Console (QCC) | | ✓ | | |
| Recall Interval (See Recall/Timed Flash) | ✓ | ✓ | ✓ | Behind Switch: recall interval may need to be shortened |
| Reminder Service Cancel | ✓ | ✓ | ✓ | |
| Remote Access | ✓ | ✓ | ✓ | |
| Remote Call Forward | ✓ | ✓ | ✓ | Behind Switch: unavailable for single-line telephones |
| Ringling/Idle Line Preference | ✓ | ✓ | ✓ | |

System Features

| Feature | Availability by Mode | | | Notes |
|---|----------------------|----------------|------------------|---|
| | Key | Hybrid/ PBX | Behind Switch | |
| Routing by Dial Plan | | ✓ | | Release 2.0 and later |
| Station Message Detail Recording (SMDR) | ✓ | ✓ | ✓ | |
| System Numbering | ✓ | ✓ | ✓ | Hybrid/PBX: extension number is assigned to Listed Directory Number (the published main number) for QCC |
| System Restart | ✓ | ✓ | ✓ | |
| System Speed Dial | ✓ | ✓ | ✓ | |
| Tie Trunk Options | ✓ | ✓ | ✓ | |
| Timed Flash (See Recall/Timed Flash) | ✓ | ✓ | ✓ | Release 2.0 and later |
| Toll Type | ✓ | ✓ | ✓ | |
| Touch-Tone or Rotary Signaling | ✓ | ✓ | ✓ | |
| Transfer Options | ✓ | ✓ | ✓ | |
| Trunk Pools | | ✓ | | |
| Voice Announce to Busy | ✓ | ✓ | ✓ | |

General Feature Use and Telephone Programming

C

This appendix contains information on the general use of features for the MLX, analog multiline, and single-line telephones. It covers telephone and operator features and the acceptable programming codes for each. It also describes how to program these features on MLX and analog multiline telephones.

General Feature Use Information

The following sections provide general instructions for feature use on MLX, analog multiline, and single-line telephones. Features can be used in the following ways:

- by pressing a dedicated feature button
- by pressing a programmed button
- by dialing a feature code
- by selecting the feature from the display (MLX display telephones only)

Dedicated Feature Buttons

All multiline telephones have a group of dedicated feature buttons that are programmed and labeled at the factory. The functions of these buttons, which include Conference, Transfer, and Speaker, cannot be changed. Press the button for the feature you want to use.

Programmed Buttons

Any unlabeled line button on multiline telephones can be programmed with a feature for one-touch activation. See Tables C-1 through C-4 for additional information on programming features onto line buttons.

Some features, such as Auto Dial, must be programmed onto line buttons in order to use them. Other features, such as Privacy, are best used if programmed onto line buttons — the LED next to the line button provides visual indication that the feature is in use. The following features must be programmed onto line buttons:

- Auto Answer All
- Auto Answer Headset
- Auto Dial
- Barge-In
- Coverage
 - Group Coverage
 - Primary Coverage
 - Secondary Coverage
 - Coverage Off
- Do Not Disturb
- Extension Status—Agent Login/Logout
- Feature Button (analog multiline telephones only)
- Headset/Handset Mute
- Headset Status
- Headset Hang Up
- Notify
- Posted Message (available from display on MLX display telephones)
- Saved Number Dial
- Signal

Feature Codes

Feature codes are 1-, 2-, and 3-digit codes that activate features. A feature code is used by first pressing the dedicated **Feature** button on MLX telephones; pressing a programmed **Feature** button on analog multiline telephones; dialing # on single-line telephones. Each of these methods sends a signal to the system that a feature code is about to be dialed. When the code is dialed, the feature is activated.

NOTE:

Queued Call Console (QCC) system operators cannot use feature codes.

The following features can be used only by dialing feature codes:

- Call Pickup
- Forward/Follow Me—Cancel One
- Forward/Follow Me—Cancel All
- Message Cancel
- Personal Speed Dial
- System Speed Dial

NOTE:

Pressing the **Conference**, **Transfer**, **Speaker**, or **Feature** button while activating a feature cancels the process. Pressing any other button, such as the **Mute**, **HFAI**, **Message Status**, **DSS Page**, **More**, **Message**, **Clock**, analog multiline display keys, or analog multiline disconnect button does not cancel the feature activating process.

Telephone and Operator Features

Table C-1 lists the telephone and operator features that can be assigned to telephones or consoles via Centralized Telephone Programming or by users from their telephones.

Table C-1. Telephone and Operator Features

| Feature | Prog Code | Feature Code | 2-Line Display | 7-Line Display |
|---|---|--------------|--|---|
| Account Code Entry | *82 | 82 + code | Acct | AccountCode |
| Alarm* | *759 | | Alarm | Alarm |
| Alarm Clock | | | AlClk | Alarm Clock |
| Auto Answer All | *754 | | | AutoAns All |
| Auto Answer Intercom | *753 | | | AutoAnsIcom |
| Auto Dial Inside (ext., group, zone) Outside | *22 + ext. no. *21 + tel no. | | AutoD In Out | Auto Dial Inside Outside |
| Automatic Line Selection Begin Sequence End Sequence | *14 **14 | | | |
| Barge-In*† | *58 | | Barge | Barge In |
| Callback Automatic On Off Selective Cancel selective | *12 **12 *55 | 55 *55 | CbckA On Off CbckS | Cback Auto On Off Cback Sel |
| Call Waiting On Off Call Waiting Pickup | *11 **11 | 87 | CWait On Off | CallWaiting On Off |
| Camp-On | *57 | 57 | Camp | Camp On |
| Conference | *772 | 772 | Conf | Conference |
| Contrast | | | Ctrst | |
| Coverage Receiver buttons Group Primary Secondary Sender buttons Cover inside & outside calls Cover outside calls only Coverage Off Coverage VMS Off | *42 + ext. no. *40 + ext. no. *41 + ext. no. *48 **48 *49 *46 | | Cover Group Prmry Secnd CvIns, On CvIns, Off CvOff | Coverage Group Primary Secondary CoverInside, On CoverInside, Off CoverageOff |

* System operator-only feature
† Centralized telephone programming only

Table C-1. Telephone and Operator Features (continued)

| MLX-10D | MLX-28D | MLX-20L | Single Line | MLX-10 | Analog Multiline | Feature |
|---------|---------|---------|--------------------------|--------|------------------|---|
| KPB | KPB | KPB | KP | KPB | KPB | Account Code Entry |
| | KPB | KPB | | | KPB | Alarm |
| KPB | KPB | KPB | | KPB | KPB | Alarm Clock |
| | | | | | KPB | Auto Answer All |
| | | | | | KPB | Auto Answer Intercom |
| KPB | KPB | KPB | | KPB | KPB | Auto Dial Inside (ext., group, zone) Outside |
| KPB | KPB | KPB | | KPB | KPB | Automatic Line Selection Begin Sequence End Sequence |
| KPB | KPB | KPB | | KPB | KPB | Barge-In |
| KPB | KPB | KPB | KP | KPB | KPB | Callback Automatic On Off Selective Cancel selective |
| KPB | KPB | KPB | KPB | KPB | KPB | Call Waiting On Off Call Waiting Pickup |
| KPB | KPB | KPB | | KPB | KPB | Camp-On |
| B | B | B | | B | B | Conference |
| KPB | KPB | KPB | | KPB | KPB | Contrast |
| KPB | KPB | KPB | KPB KPB KPB KPB | KPB | KPB | Coverage Receiver buttons Group Primary Secondary Sender buttons Cover inside & outside calls Cover outside calls only Coverage Off Coverage VMS Off |

Table C-1. Telephone and Operator Features (continued)

| MLX-10D | MLX-28D | MLX-20L | Single Line | MLX-10 | Analog Multiline | Feature |
|----------------|----------------|-------------------|--------------------|---------------|-------------------------|---|
| KPB | KPB | KPB | | KPB | KPB | Data Status |
| KPB KPB | KPB KPB | KPB KPB KPB | | | | Directories Extension Directory Personal Directory System Directory |
| KPB | KPB | KPB | | KPB | KPB | Do Not Disturb |
| B | B | B | | B | B | Drop |
| KPB | KPB KPB | KPB KPB | KPB | KPB | KPB KPB | Extension Status Direct-Line Console Status Off Status 1 Status 2 Telephones (rooms or agents) Status Off Status 1 Status 2 |
| | | | | | KPB | Feature button |
| KPB | KPB | KPB | KPB | KPB | KPB | Forward and Follow Me Activate Forward (inside) Remote Call Forward (Outside) Follow Me Cancel cancel sending from your telephone cancel sending from one extension cancel sending from all extensions |

Table C-1. Telephone and Operator Features (continued)

| Feature | Prog Code | Feature Code | 2-Line Display | 7-Line Display |
|--|------------------------------|------------------|------------------------|------------------------------|
| Group Calling In-Queue Alarm button | *22 + calling group ext. no. | | GrpCl | Group Call |
| Calling group supervisor Enter supervisor mode* | | 32 + Hold | | |
| Exit supervisor mode* | | 32 + Drop | | |
| Available (ES Status 2) | *762 | 762 + DSS button | OpES, ES2 | OperatorES, ES2 |
| Unavailable (ES Status Off) | *760 | 760 + DSS button | OpES, ESOff | Operators, ES Off |
| Calling group members Sign in (Available) | *44 | 44 | ES | Status, ES2 |
| Sign out (Unavailable) | | *44 | ES,Off | ES Status, ES Off |
| After-call work state (CMS only) | *45 | 45 | ES,ES1 | ES Status, ES1 |
| Group Page Auto Dial button | *22 + paging group ext. no. | | GrpPg | Group Page |
| Headset Options Auto Answer | *780 | | Hdset Auto | Hdset Auto Answer |
| Hang Up† | *781 | | | Hang Up |
| Mute (Headset/Handset) | *783 | | Mute | Mute |
| Status | *782 | | Stat | Status |
| Hold Hold release | | 771 * * | | |
| Intercom buttons Assign buttons† ICOM (Default Ring) | *16 | | | SysAccess |
| ICOM Originate Only | *18 | | | SysAcc-00 |
| Change type of Intercom button Ring | **19 | | Voice, Place, Ring | Voice Annce, Place, Ring |
| Voice | *19 | | Voice, Place, Voice | Voice Annce, Place, Voice |
| Language Choice English | | 790 | | |
| French | | 791 | | |
| Spanish | | 792 | | |
| Last Number Dial | *84 | 84 | Last## | LastNumDial |

* System operator-only feature

† Centralized telephone programming only

Table C-1. Telephone and Operator Features (continued)

| MLX-10D | MLX-28D | MLX-20L | Single Line | MLX-10 | Analog Multiline | Feature |
|----------------|----------------|----------------|--------------------|---------------|-------------------------|---|
| KPB | KPB KPB | KPB KPB | | KPB | KPB KPB | Group Calling In-Queue Alarm button |
| KPB | KPB | KPB | KPB | KPB | KPB | Calling group supervisor Enter supervisor mode Exit supervisor mode Available (ES Status 2) Unavailable (ES Status Off) Calling group members Sign in (Available) Sign out (Unavailable) After-call work state (CMS only) |
| KPB | KPB | KPB | | KPB | KPB | Group Page Auto Dial button |
| KPB | KPB | KPB | | KPB | | Headset Options Auto Answer Hang Up Mute (Headset/Handset) Status |
| B B | B B | B B | B | B B | B B | Hold Hold release |
| KB | KB | KB | KB KB | KB | KB | Intercom buttons Assign buttons ICOM (Default Ring) ICOM Originate Only Change type of Intercom button Ring Voice |
| KPB | KPB | KPB | | KPB | | Language Choice English French Spanish |
| KPB | KPB | KPB | KP | KPB | KPB | Last Number Dial |

Table C-1. Telephone and Operator Features (continued)

| Feature | Prog Code | Feature Code | 2-Line Display | 7-Line Display |
|----------------------|--|--------------|---------------------------|---|
| Messaging | | | Msgs | Messages |
| Leave Message | *25 | 25 | LvMsg | Msg Leave |
| After calling | | 53 + ext no. | | |
| Without calling | | *53 | | |
| Cancel message left | | + ext no. | | |
| Message LED off | *54 | 54 | | |
| Posted Message | *751 | | Post | Posted Msg |
| Send/Remove Message* | *38 | 38 + ext no. | SdMsg | Send/RmvMsg |
| Receiving messages: | | | Msgs | Messages |
| Delete Message‡ | *26 | 26 | Dlete | Delete Msg |
| Next Message‡ | *28 | 28 | Next | Next Msg |
| Return Call‡ | *27 | 27 | Call | Return Call |
| Scroll‡ | *29 | 29 | | |
| Night Service* | *39 | 39 | Night | Night Srvc |
| Notify | | | Ntfy | Notify |
| Send | *757 + ext. no. | | Send | Send |
| Receive | *758 + ext. no. | | Recv | Receive |
| Paging | | | | |
| Group Paging | | | GrpPg | Group Page |
| Loudspeaker Paging | | | LdsPg | Loudspkr Pg |
| Park | *86 | | Park | Park |
| Park Zone Auto Dial* | *22 + park zone | | PrkZn | Park Zone |
| Personal Speed Dial | # + (01-24) + *21 + tel no. + ## | | PSpdDl | PersSpeedDl |
| Personalized Ringing | *32 + ring (1-8) | | PRing, Pat #1... Pat*8 | PersonalRng, Pattern #1... Pattern #8 |
| Pickup | | | Pkup | Pickup |
| General use | *9 | | Genrl | General |
| Specific extension | *9 + ext. no. | 9 + ext. no. | Ext | Extension |
| Specific line | *9 + line no. | 9 + line no. | Line | Line |
| Group | *88 | 88 | PkupG | PickupGroup |

* System operator-only feature

‡ Display telephones only. Programming and feature codes are used with analog multiline telephones only.

Table C-1. Telephone and Operator Features (continued)

| MLX-10D | MLX-28D | MLX-20L | Single Line | MLX-10 | Analog Multiline | Feature |
|-------------------|-------------------|-------------------|--------------------|---------------|--------------------------|---|
| KPB | KPB | KPB | KPB | KPB | KPB | Messaging Leave Message After Calling Without calling Cancel message left |
| KPB KPB | KPB KPB KPB | KPB KPB KPB | | KPB KPB | KPB KPB KPB | Message LED off Posted Message Send/Remove Message |
| KPB KPB KPB | KPB KPB KPB | KPB KPB KPB | | | KPB KPB KPB KPB | Receiving messages: Delete Message Next Message Return Call Scroll |
| | KPB | KPB | | | KPB | Night Service |
| KPB | KPB | KPB | | KPB | KPB | Notify Send Receive |
| KPB | KPB | KPB | | KPB | KPB | Paging Group Paging Loudspeaker Paging |
| KPB | KPB | KPB | KP | KPB | KPB | Park |
| | KPB | KPB | | | KPB | Park Zone Auto Dial |
| KPB | | | KP | KPB | KPB | Personal Speed Dial |
| KPB | KPB | KPB | | KPB | KPB | Personalized Ringing |
| KPB | KPB | KPB | KP | KPB | KPB | Pickup General use Specific extension Specific line Group |

Table C-1. Telephone and Operator Features (continued)

| Feature | Prog Code | Feature Code | 2-Line Display | 7-Line Display |
|--|--|--------------------------------------|--|--|
| Privacy On Off | *31 | 31 *31 | Prvcy | Privacy |
| Recall | *775 | 775 | Rec11 | Recall |
| Reminder Service Set | *81 | 81 + time + A or P† | Rmind Set | Reminder Set |
| Operator Set* | | 81 + ext. no. + time + A or P† | | |
| Cancel Operator Cancel* | **81 | *8 1 *81 + ext. no. | Cancl | Cancel |
| Missed* | *752 | | Missd | Missed |
| Ringin/Idle Line Preference On Off | *343 *344 | | LnPrf, On LnPrf, Off | Line Preference, On Line Preference, Off |
| Ringin Options Individual lines Immediate ring Delay ring No ring All lines Immediate ring Delay ring No ring Abbreviated ring On Off Send Ring (Shared SA) On Off | *37 *36 *35 *347 *346 *345 *341 *342 *15 **15 | | RngOp lLine Immed Delay No All Ln Immed Delay No Abbrv On Off ShRng On Off | RingOptions One Line Immed Ring Delay Ring No Ring All Lines Immed Ring Delay Ring No Ring Abbreviated On Off SharedSARng On Off |
| Saved Number Dial | *85 | | Save# | SaveNumDial |
| Send/Remove Message* | *38 | 38 + ext. no. | SdMsg | Send/RmvMsg |
| Signal (manual) | *23 + ext. no. | | Signl | Signal |

* System operator-only feature

† English only: time is 12-hour (0100-1259) + 2(A) or 7(P).

French and Spanish: time is 24-hour (0000-2359).

Table C-1. Telephone and Operator Features (continued)

| MLX-10D | MLX-28D | MLX-20L | Single Line | MLX-10 | Analog Multiline | Feature |
|----------------|----------------|----------------|--------------------|---------------|-------------------------|--|
| KPB | KPB | KPB | KP | KPB | KPB | Privacy On Off |
| KPB | KPB | KPB | | KPB | KPB | Recall |
| KPB | KPB | KPB | KPB | KPB | KPB | Reminder Service Set Operator Set Cancel Operator Cancel Missed |
| KPB | KPB | KPB | | KPB | KPB | Ringin/Idle Line Preference On Off |
| KPB | KPB | KPB | | KPB | KPB | Ringin Options Individual lines Immediate ring Delay ring No ring |
| KPB | KPB | KPB | | KPB | KPB | All lines Immediate ring Delay ring No ring |
| KPB | KPB | KPB | | KPB | KPB | Abbreviated Ring On Off |
| P | P | P | P | P | P | Send ring (Shared SA) On Off |
| KPB | KPB | KPB | | KPB | KPB | Saved Number Dial |
| | KPB | KPB | | | KPB | Send/Remove Message |
| KPB | KPB | KPB | | KPB | KPB | Signal (manual) |

Table C-1. Telephone and Operator Features (continued)

| Feature | Prog Code | Feature Code | 2-Line Display | 7-Line Display |
|---|---|---------------------|-------------------------------------|--|
| System Access buttons Assign buttons† SA (Default Ring) SA Originate Only Shared SA | * 16 * 18 *17 + primary ext. no. | | | SysAccess SysAcc-00 ShareSysAcc |
| Change type (SA or Shared SA) Ring Voice | ** 19 * 19 | | | |
| System Speed Dial | *24 + code (600-729) | 600-729 | SpdD1 | SysSpeedD1 |
| Timer | | | Timer | Timer |
| Transfer | *774 | 774 | Trans | Transfer |
| Voice Announce to Busy On Off | * 10 ** 10 | | Voice Place Recv On Off | Voice Annce Place Receive On Off |

† Centralized telephone programming only

Table C-1. Telephone and Operator Features (continued)

| MLX-10D | MLX-28D | MLX-20L | Single Line | MLX-10 | Analog Multiline | Feature |
|----------------|----------------|----------------|--------------------|---------------|-------------------------|---|
| P | P | P | P P P | P | P | System Access buttons Assign buttons SA (Default Ring) SA Originate Only Shared SA Change type (SA or Shared SA) Ring Voice |
| KPB | KPB | KPB | KP | KPB | KPB | System Speed Dial |
| KPB | KPB | KPB | | KPB | KPB | Timer |
| B | B | B | | B | B | Transfer |
| KPB | KPB | KPB | | KPB | KPB | Voice Announce to Busy On Off |

Telephone Programming

The following describes how to program features on MLX and analog multiline telephones. Since Personal Speed Dial is the only feature that single-line telephone users can program, general programming instructions for single-line telephones are not provided.

NOTE:

Features cannot be programmed on QCCs in system operator positions. Features assigned to these consoles are fixed and cannot be changed.

Programming Methods

Telephones can be programmed by dialing programming codes or, on MLX display phones, selecting features from the display. An analog multiline telephone cannot be programmed by selecting features from the display.

To program a telephone, first enter programming mode:

- On analog multiline telephones, slide the Test/Program (T/P) switch on the side of the telephone to **P**, or lift the handset, or press Speakerphone and dial #00.
- On MLX-10 telephones, press the **Feature** button and dial **00**.
- On MLX display telephones, use the same procedures as the MLX-10 or enter programming mode by selecting `Ext Program` from the menu screen on the display.

See the appropriate user or operator guide for more information.

NOTE:

Features can also be programmed onto individual telephones through Centralized Telephone Programming. The steps for using programming codes vary depending on the telephone. Tables C-2 through C-4 list the basic steps for programming each telephone type.

Table C-2. Programming Analog Multiline Telephones

| Step | | Action |
|------|---|---|
| 1 | Label the button. Note: Skip this step if the feature will not be programmed onto a button. | <ul style="list-style-type: none"> ■ Remove the clear label cover from the telephone by the inserting the end of a paper clip in the notch at the top of the cover. ■ Write the feature name on the card next to the button to be programmed. ■ Replace the cover. |
| 2 | Begin programming. | <ul style="list-style-type: none"> ■ Slide the T/P switch on the side of the telephone to P. |
| 3 | Select the feature. | <ul style="list-style-type: none"> ■ Press the button you labeled. <i>If you have a display, it shows the name of the feature currently programmed on the button. If no feature is programmed, the display indicates that the button is blank.</i> <p>Note: If the feature does not get programmed onto a button, press any line button. This does not affect the button in any way.</p> <p>Dial the programming code. <i>The feature is programmed.</i></p> |
| 4 | End programming. | <ul style="list-style-type: none"> ■ Slide the T/P switch to the center position. |

Table C-3. Programming MLX-10 Telephones

| Step | Action |
|--|---|
| <p>1 Label the button. Note: Skip this step if the feature will not be programmed onto a button.</p> | <ul style="list-style-type: none"> ■ Remove the clear label cover from the telephone by pulling up on the tab that extends from the top of the cover. ■ Write the feature name on the card next to the button to be programmed. ■ Replace the cover. |
| <p>2 Begin programming.</p> | <ul style="list-style-type: none"> ■ Press the Feature button and dial then 00. |
| <p>3 Select the feature.</p> | <ul style="list-style-type: none"> ■ Press the button you labeled. Note: If the feature does not get programmed onto a button, press any line button. This does not affect the button in any way. ■ Dial the programming code. <i>The feature is programmed.</i> |
| <p>4 End programming.</p> | <ul style="list-style-type: none"> ■ Press the Feature button and dial *00. |

Table C-4. Programming MLX Display Telephones Using the Display

| Step | Action |
|---|--|
| <p>1 Label the button to be programmed. Note: Skip this step if the feature will not be programmed onto a button.</p> | <ul style="list-style-type: none"> ■ Remove the clear label cover from the telephone by pulling upon the tab that extends from the top of the cover. ■ Write the feature name on the card next to the button to be programmed. ■ Replace the cover. |
| <p>2 Begin programming.</p> | <ul style="list-style-type: none"> ■ Press Menu. ■ Select <code>Ext Program</code> from the display. ■ Select <code>Start</code> from the display. |
| <p>3 Identify the button to be programmed.</p> <p>To delete the feature currently programmed on the button:</p> <p>To display features:</p> | <ul style="list-style-type: none"> ■ Press the button you labeled. Note: If the feature does not get programmed onto a button, press any line button. This does not affect the button in any way. <i>The display identifies the feature currently programmed on the button. If no feature is programmed, the display indicates that the button is blank.</i> ■ Select <code>Delete</code> from the display. <i>The button is now blank.</i> ■ Press the button you labeled again to continue programming. Note: If the currently programmed feature was not deleted from the button, the new feature programmed onto it will replace it. ■ Select <code>List Feature</code> from the display. <i>The screen lists feature names in alphabetical order.</i> |

Table C-4. — Continued

| Step | Action |
|-------------|--|
| 4 | <p>Select the feature.</p> <p>If the feature name is on the display:</p> <ul style="list-style-type: none"> ■ Press the button next to or below the name of the feature to be programmed. <p>If the feature name is not on the display:</p> <p>To move through the list of features page by page,</p> <p>or</p> <p>To jump to the screen that displays the feature name,</p> <ul style="list-style-type: none"> ■ Press More. ■ Select <code>Find Feature</code> from the display. ■ Select the range of letters from the display that corresponds to the first letter of the feature name (for example, if the feature begins with A, select <code>ABC</code>). ■ If the feature is not displayed on the page that you jumped to, press More. ■ When you find the feature you want, press the button next to or below it. |
| 5 | <p>Respond to any additional prompts on the display.</p> <ul style="list-style-type: none"> ■ Select appropriate prompt (for example, select <code>On</code> or <code>Off</code> to turn Inside Coverage on or off), and/or enter required information (for example, dial a phone number for Auto Dial). ■ Select <code>Enter</code>. |
| 6 | <p>End programming.</p> <p>To return to the Home screen:</p> <ul style="list-style-type: none"> ■ Press Home or lift and replace the handset. <p>To return to the Menu screen:</p> <ul style="list-style-type: none"> ■ Press Menu. |

NOTE:

MLX display telephones can also be programmed using the method described for MLX-10 telephones. For example, the programming mode can be entered by pressing the **Feature** button and dialing `00`, then referring to the display to continue the programming process. Or, enter programming via the display and then dial a programming code to select the feature rather than selecting it from the display.

System Programming Menu Hierarchy

D

The system programming menu hierarchy details the sequence of menu screens that appear when you select the system programming options. The choice of an option on the first menu screen leads to either a second menu screen or a data-entry screen. A secondary menu screen may lead to still another menu screen, and soon up to six screens, as shown in the following pages.

You can use the Inspect feature in system programming to display the telephone or line/trunk numbers that are programmed with a specific feature. Inspect is helpful when you must assign a feature to many lines/trunks or extensions and you do not have a Direct Station Selector (DSS) attached to the system programming console, or when you are programming using a PC with SPM.

Inspect can be used with the menu options on the following pages that have an asterisk (*) next to them. To use Inspect in system programming, choose an eligible option, and press **Inspct** or **PgDn**.

Sample Reports

E

This appendix includes samples of the print reports generated by the communications system. Table E-1 lists the system reports and the pages in this appendix where samples can be found.

Table E-1. Report Contents

| For... | See... |
|---|---------------|
| System Information Report | E-6 |
| Dial Plan Report | E-8 |
| Label Information Report | E-10 |
| Tie Trunk Information Report | E-11 |
| DID Trunk Information Report | E-12 |
| GS/LS Trunk Information Report | E-13 |
| General Trunk Information Report | E-14 |
| DS1 Information Report | E-15 |
| PRI Information Report | E-16 |
| Remote Access (DISA) Information Report | E-18 |
| Operator Information Report | E-19 |
| Allowed Lists Report | E-21 |
| Access to Allowed Lists Report | E-22 |
| Disallowed Lists Report | E-23 |
| Access to Disallowed Lists Report | E-24 |
| Automatic Route Selection Report | E-25 |
| Extension Directory Report | E-27 |
| System Directory Report | E-28 |
| Group Paging Report | E-29 |
| Extension Information Report | E-30 |
| Group Coverage Information Report | E-32 |

Continued on next page

Table E-1. - *Continued*

| For... | See... |
|---|---------------|
| Direct Group Calling Information Report | E-33 |
| Night Service Information Report | E-34 |
| Group Call Pickup Report | E-35 |
| Error Log Report | E-36 |

Table E-2 lists all of the system reports and includes: the print menu option used to print each report; the report name; and a brief description of each report.

The menu options referred to in Table E-2 are accessed by selecting the `Print` option on the System Programming menu. Refer to the "Print Reports" section of this guide for details on the `Print` option.

Table E-2. System Reports

| Menu Option | Report Name | Description |
|--------------------|----------------------------------|---|
| All | | Prints each of the reports available on the Print menu, from SysSet-up to Error Log. Note: When All is selected, the four Trunk Information reports automatically print. See Trunk Info. |
| SysSet-up | System Information | System-wide information such as return intervals, system mode, system programming port, slot assignments, etc. |
| Dial Plan | Dial Plan | Extensions assigned to pools, paging zones, calling groups, lines or trunks, and stations; labels for lines/trunks and stations. |
| Labels | Label Information | Labels assigned to stations Posted Messages, and names and telephone numbers included in MLX-20L user's Personal Directory. |
| Trunk Info | | Select to display four trunk options: TIE, DID, Loop/Ground, General. |
| TIE | TIE Trunk Information | Extensions assigned to and signaling attributes associated with TIE trunks. |
| DID | DID Trunk Information | Extensions assigned to and signaling attributes associated with DID trunks. |
| Loop/ Ground | GS/LS Trunk Information | Extensions assigned to and signaling attributes associated with Ground- and Loop-Start trunks. |
| General | General Trunk Information | All identified extensions and feature-related attributes of each extension. |
| T1 Info | DS1 Information | Options (line, signal, etc.) assigned to T1 trunks or lines. |
| PRI Info | PRI Information | PRI trunks/lines assigned to B-channel groups. |
| Rmote Access | Remote Access (DISA) Information | Remote access dial code, class of restriction, barrier code information. |
| Oper Info | Operator Information | For each system operator position; the logical ID, extension number, label, type (DLC or QCC); all general system operator options, such as backup position, etc.; call types and priorities. |

Continued on next page

Table E-2. – Continued

| Menu Option | Report Name | Description |
|--------------------|----------------------------|--|
| AllowList | Allowed Lists | Telephone numbers included in Allowed Lists. Lists are numbered 0-7, and entries are numbered 0-9. |
| AllowListTo | Access to Allowed Lists | Lists are numbered 0-7. If the Allowed List is assigned to Remote Access users and barrier codes are used, the barrier codes are numbered 0-16. If no barrier codes are used, 17 means the Allowed List is assigned to tie-trunk users, and 18 means the Allowed list is assigned to non-tie-trunk users. |
| DisallowLst | Disallowed Lists | Telephone numbers included in Disallowed Lists. Lists are numbered 0-7, and entries are numbered 0-9. |
| DisallowTo | Access to Disallowed Lists | Telephones to which Disallowed Lists are assigned. Lists are numbered 0-7. If the Disallowed List is assigned to Remote Access users and barrier codes are used, the barrier codes are numbered 0-16. If no barrier codes are used, 17 means the Disallowed List is assigned to tie-trunk users, and 18 means the Disallowed list is assigned to non-tie-trunk users. |
| ARS | Automatic Route Selection | Access code; table types with area codes and exchanges; routes for subpatterns A and B, FRL, absorb digit, delete digit, Dial 0, and N11 tables. |
| Ext Direct | Extension Directory | Slot/port addresses, extensions, labels and feature-related attributes. Column headings are printed on the first page only and are not carried over to subsequent pages. Column headings 4 through 10 (and 14 through 20) should be read vertically. That is: FACE (Forced Account Code Entry); HBIS (HFAI/BIS); RCFW (Remote Call Forward); MICD (Microphone Disable); SIG (Voice Signal); RSTR (Calling Restrictions); ARSR (ARS Restriction Level). |

Continued on next page

Table E-2. – *Continued*

| Menu Option | Report Name | Description |
|--------------------|----------------------------------|--|
| Sys Direct | System Directory | System Speed Dial number, label and telephone number in System Directory, and whether number should display. |
| Group Page | Group Paging | Extension number for each group and the extension number of each telephone assigned to the group. |
| Ext Info | Extension Information | For each specified extension, type of equipment connected, features assigned to station, and features assigned to each button on the station. |
| GrpCoverage | Group Coverage Information | Extension number for each group and the extension number for each telephone assigned to the group. Information is printed only for calling groups with members and/or lines/trunks assigned. |
| Grp Calling | Direct Group Calling Information | Group calling options (hunt, type, message waiting, station, etc.), the extension number for each telephone assigned to the group, and the lines or trunks assigned to the group. |
| Night Service | Night Service Information | The operator, password required, time-of-day, and Emergency Allowed List extension numbers. |
| Call Pickup | Group Call Pickup | Extension numbers for telephones assigned to each group. Pickup groups are numbered 1-30. |
| Error Log | Error Log | Error message and code, time and day error occurred, frequency of error. See the Maintenance and Troubleshooting guide. |

System Reports

System Information Report

Print Menu Option: SysSet-up

SYSTEM INFORMATION

Current Date: 01/04/00

Current Time: 00:21:15

System : Mode AutoMaintBusy AutoBusyTie
 : Hybrid/PBX Disable Disable

Language: SystemLang SMDR Printer
 English English English

Direct Line Operators : 14 18 22 42

Queued Call Operators : 10

SysProg Port : 10 Password : craft

Transfer : Type Audible OneTouch(Complete) ReturnTimer
 : Ring MusicOnHold Transfer(Auto) 5 rings

VMS Transfer Return Interval : 4

Paging System Lines :

Music On Hold Line : 804

Camp On Time : 90 sec

Call Park Return Time : 180 sec

Delay Rings : 2

Coverage Delay : 3

Auto Callback Rings : 3

Extension Status (ESS) : Group Call / CMS

ESS Operators :

System Information Report - Continued

| | | | |
|-------------------------|----------------|-----------------|---------------------|
| SMDR : | Min. Call Time | Call Report | Format |
| : | 40 sec | In/Out | Basic |
| Intercom Dial Tone | | : Inside | |
| Reminder Service Cancel | | : : | |
| Behind Switch Code | | Drop | Transfer Conference |
| Recall Timer | | : 450 msec | |
| Rotary Line Cut Through | | : Delay | |
| Unassigned Extension | | : 10 | |
| Slot # 1: | 008 MLX | | |
| Slot # 2: | 408 | | |
| Slot # 3: | 008 | | |
| Slot # 4: | 408 | | |
| Slot # 5: | 800 GS/LS | | |
| Slot # 6: | 408 GS/LS-MLX | | |
| Slot # 7: | 800 | | |
| Slot # 8: | 008 | | |
| Slot # 9: | 012 | | |
| Slot # 10: | 408 GS/LS | | |
| Slot # 11: | 008 | | |
| Slot # 12: | 800 | | |
| Slot # 13: | 800 DID | | |
| Slot # 14: | 400 EM | | |
| Slot # 15: | 012 | | |
| Slot # 16: | 008 MLX | | |
| Slot # 17: | 408 | * Not Present * | |

Dial Plan Report

Print Menu Option: Dial Plan
Sections: Pools; Telephone Paging Zones; Direct Group
Calling Group; Lines/Trunks; Stations

DIAL PLAN FOR POOLS

| | |
|------------|-----|
| POOL # 1: | 70 |
| POOL # 2: | 890 |
| POOL # 3: | 891 |
| POOL # 4: | 892 |
| POOL # 5: | 893 |
| POOL # 6: | 894 |
| POOL # 7: | 895 |
| POOL # 8: | 896 |
| POOL # 9: | 897 |
| POOL # 10: | 898 |
| POOL # 11: | 899 |

DIAL PLAN FOR TELEPHONE PAGING ZONES

| | |
|----------|-----|
| TPZ # 1: | 793 |
| TPZ # 2: | 794 |
| TPZ # 3: | 795 |
| TPZ # 4: | 796 |
| TPZ # 5: | 797 |
| TPZ # 6: | 798 |
| TPZ # 7: | 799 |

DIAL PLAN FOR DIRECT GROUP CALLING GROUP

| | |
|-----------|-----|
| DGCG # 1: | 770 |
| DGCG # 2: | 771 |
| DGCG # 3: | 772 |
| DGCG # 4: | 773 |
| DGCG # 5: | 774 |

Dial Plan Report - Continued

DIAL PLAN FOR LINES/TRUNKS

| | | | | | |
|-----------|-----|---------|------------|-----|---------|
| LINE # 1: | 801 | OUTSIDE | LINE # 2: | 802 | OUTSIDE |
| LINE # 3: | 803 | OUTSIDE | LINE # 4: | 804 | OUTSIDE |
| LINE # 5: | 805 | OUTSIDE | LINE # 6: | 806 | OUTSIDE |
| LINE # 7: | 807 | OUTSIDE | LINE # 8: | 808 | OUTSIDE |
| LINE # 9: | 809 | OUTSIDE | LINE # 10: | 810 | OUTSIDE |

DIAL PLAN FOR STATIONS

| | | | | | | | |
|--------|----|----|---------|--------|----|-----|---------|
| STN #: | 1 | 10 | OPERATR | STN #: | 2 | 710 | |
| STN #: | 3 | 11 | | STN #: | 4 | 711 | |
| STN #: | 5 | 12 | | STN #: | 6 | 712 | |
| STN #: | 7 | 13 | EXT 13 | STN #: | 8 | 713 | |
| STN #: | 9 | 14 | EXT 14 | STN #: | 10 | 714 | |
| STN #: | 11 | 15 | | STN #: | 12 | 715 | |
| STN #: | 13 | 16 | | STN #: | 14 | 716 | |
| STN #: | 15 | 17 | | STN #: | 16 | 717 | |
| STN #: | 17 | 18 | EXT 18 | STN #: | 18 | 19 | |
| STN #: | 19 | 20 | | STN #: | 20 | 21 | |
| STN #: | 21 | 22 | OPERATR | STN #: | 22 | 23 | |
| STN #: | 23 | 24 | | STN #: | 24 | 25 | |
| STN #: | 25 | 26 | | STN #: | 26 | 27 | |
| STN #: | 27 | 28 | | STN #: | 28 | 29 | |
| STN #: | 29 | 30 | AUDIXVP | STN #: | 30 | 31 | AUDIXVP |
| STN #: | 31 | 32 | AUDIXVP | STN #: | 32 | 33 | AUDIXVP |
| STN #: | 33 | 34 | | STN #: | 34 | 35 | |
| STN #: | 35 | 36 | | STN #: | 36 | 37 | |
| STN #: | 37 | 38 | | STN #: | 38 | 39 | |
| STN #: | 39 | 40 | | STN #: | 40 | 41 | |
| STN #: | 41 | 42 | EXT 42 | STN #: | 42 | 742 | |
| | . | | | | | | |
| | . | | | | | | |
| | . | | | | | | |
| STN #: | 53 | 54 | EXT 54 | STN #: | 54 | 754 | AUDIXVP |

Label Information Report

Print Menu Option: Labels
Sections: Telephone Personal Directory; Posted Messages and Numbers

LABEL INFORMATION

| | | |
|-----------------------|--------|--------------------|
| Executive Telephone # | 10: | Personal Directory |
| Name | Number | Display |
| Executive Telephone # | 14: | Personal Directory |
| Name | Number | Display |
| Executive Telephone # | 15: | Personal Directory |
| Name | Number | Display |

MSG # POSTED MESSAGE

| | |
|----|-----------------|
| 1 | DO NOT DISTURB |
| 2 | OUT TO LUNCH |
| 3 | AT HOME |
| 4 | OUT SICK |
| 5 | IN A MEETING |
| 6 | IN CONFERENCE |
| 7 | WITH A CLIENT |
| 8 | WITH A CUSTOMER |
| 9 | AWAY FROM DESK |
| 10 | OUT ALL DAY |
| 11 | CUSTM MSG11 |
| 12 | CUSTM MSG12 |
| 13 | CUSTM MSG13 |
| 14 | CUSTM MSG14 |
| 15 | CUSTM MSG15 |
| 16 | CUSTM MSG16 |
| 17 | CUSTM MSG17 |
| 18 | CUSTM MSG18 |
| 19 | CUSTM MSG19 |
| 20 | CUSTM MSG20 |

Tie Trunk Information Report

Print Menu Option: Trunk Info and TIE

TIE TRUNK INFORMATION

| | | | |
|------------|-------|--------------------|---------------------|
| TRUNK | 849 | Slot/Port : 14/ 1 | TIE-PBX |
| Direction: | 2 Way | E&M Signal: Type1S | Dialtone : Remote |
| InType : | Wink | InMode : Rotary | AnsSupvr : 300 ms |
| Out Type : | Wink | OutMode : Rotary | Disconnect : 300 ms |

| | | | |
|------------|-------|--------------------|---------------------|
| TRUNK | 850 | Slot/Port : 14/ 2 | TIE-PBX |
| Direction: | 2 Way | E&M Signal: Type1S | Dialtone : Remote |
| InType : | Wink | InMode : Rotary | AnsSupvr : 300 ms |
| OutType : | Wink | OutMode : Rotary | Disconnect : 300 ms |

| | | | |
|------------|-------|--------------------|---------------------|
| TRUNK | 851 | Slot/Port : 14/ 3 | TIE-PBX |
| Direction: | 2 Way | E&M Signal: Type1S | Dialtone : Remote |
| InType : | Wink | InMode : Rotary | AnsSupvr : 300 ms |
| Out Type : | Wink | OutMode : Rotary | Disconnect : 300 ms |

| | | | |
|------------|-------|--------------------|---------------------|
| TRUNK | 852 | Slot/Port : 14/ 4 | TIE-PBX |
| Direction: | 2 Way | E&M Signal: Type1S | Dialtone : Remote |
| InType : | Wink | InMode : Rotary | AnsSupvr : 300 ms |
| OutType : | Wink | OutMode : Rotary | Disconnect : 300 ms |

DID Trunk Information Report

Print Menu Option: Trunk Info and DID

DID TRUNK INFORMATION

| Trk | SS/PP | Blk | DiscTime | Type | ExpDig | DelDig | AddDig | Signal | InvDest |
|-----|-------|-------|----------|-------|--------|--------|--------|--------|-------------------|
| A | 841 | 13/ 1 | 1 | 500ms | Wink | 4 | 3 | 1 | TouchTone BkupExt |
| A | 842 | 13/ 2 | 1 | 500ms | Wink | 4 | 3 | 1 | TouchTone BkupExt |
| A | 843 | 13/ 3 | 2 | 500ms | Wink | 3 | 0 | | Rotary BkupExt |
| A | 844 | 13/ 4 | 2 | 500ms | Wink | 3 | 0 | | Rotary BkupExt |
| A | 845 | 13/ 5 | 1 | 500ms | Wink | 4 | 3 | 1 | TouchTone BkupExt |
| A | 846 | 13/ 6 | 1 | 500ms | Wink | 4 | 3 | 1 | TouchTone BkupExt |
| A | 847 | 13/ 7 | 2 | 500ms | Wink | 3 | 0 | | Rotary BkupExt |
| A | 848 | 13/ 8 | 1 | 500ms | Wink | 4 | 3 | 1 | TouchTone BkupExt |

GS/LS Trunk Information Report

Print Menu Option: Trunk Info and Loop/Ground

GS/LS TRUNK INFORMATION

| Trk | SS/PP | Type | Out Mode | RelDisc | ChannelUnit |
|-----|-------|--------|-----------|---------|-------------|
| 801 | 2/ 1 | Loop | TouchTone | Yes | N/A |
| 802 | 2/ 2 | Loop | TouchTone | Yes | N/A |
| 803 | 2/ 3 | Loop | TouchTone | Yes | N/A |
| 804 | 2/ 4 | Loop | TouchTone | Yes | N/A |
| 805 | 4/ 1 | Loop | Rotary | Yes | N/A |
| 806 | 4/ 2 | Loop | Rotary | Yes | N/A |
| 807 | 4/ 3 | Loop | Rotary | Yes | N/A |
| 808 | 4/ 4 | Loop | Rotary | Yes | N/A |
| 809 | 5/ 1 | Ground | TouchTone | N/A | N/A |
| 810 | 5/ 2 | Ground | TouchTone | N/A | N/A |
| 811 | 5/ 3 | Loop | Rotary | Yes | N/A |
| 812 | 5/ 4 | Loop | Rotary | Yes | N/A |
| 813 | 5/ 5 | Loop | Rotary | Yes | N/A |
| 814 | 5/ 6 | Loop | Rotary | Yes | N/A |
| 815 | 5/ 7 | Loop | TouchTone | Yes | N/A |
| 816 | 5/ 8 | Loop | Rotary | Yes | N/A |
| 817 | 6/ 1 | Ground | Rotary | N/A | N/A |
| | | . | | | |
| | | . | | | |
| | | . | | | |
| 880 | 15/ 1 | Ground | TouchTone | Yes | N/A |

General Trunk Information Report

Print Menu Option: Trunk Info and General

GENERAL TRUNK INFORMATION

| Trk | SS/PP | RemAccess | Pool | TlPrfx | HldDisc | Principal | QCC Prty | QCC Oper |
|-----|-------|-----------|------|--------|---------|-----------|----------|----------|
| 801 | 2/ 1 | No Remote | 70 | Yes | Long | | 4 | |
| 802 | 2/ 2 | No Remote | 70 | Yes | Long | | 4 | |
| 803 | 2/ 3 | No Remote | 70 | Yes | Long | | 4 | |
| 804 | 2/ 4 | No Remote | | Yes | Long | | 4 | |
| 805 | 4/ 1 | No Remote | | Yes | Long | | 4 | |
| 806 | 4/ 2 | No Remote | | Yes | Long | | 4 | |
| 807 | 4/ 3 | No Remote | | Yes | Long | | 4 | |
| 808 | 4/ 4 | No Remote | | Yes | Long | | 4 | |
| 809 | 5/ 1 | No Remote | 890 | Yes | Long | | 4 | 10 |
| 810 | 5/ 2 | No Remote | | Yes | Long | | 4 | |
| 811 | 5/ 3 | No Remote | | Yes | Long | | 4 | |
| 812 | 5/ 4 | No Remote | | Yes | Long | | 4 | |
| 813 | 5/ 5 | No Remote | | Yes | Long | | 4 | |
| 814 | 5/ 6 | No Remote | | Yes | Long | | 4 | |
| 815 | 5/ 7 | No Remote | | Yes | Long | | 4 | |
| 816 | 5/ 8 | No Remote | | Yes | Long | | 4 | |
| 817 | 6/ 1 | Dedicated | | Yes | Long | 42 | 4 | |

DS1 Information Report

Print Menu Option: T1 Info

DS1 SLOT ATTRIBUTES

| Slot | Type | Format | Supp | Signal | LineComp | ClkSync | Src | Active |
|------|------|--------|------|---------|----------|---------|-------|--------|
| 3 | T1 | D4 | ZCS | Rob_Bit | 1 | Prim | Loop | Yes |
| 3 | T1 | D4 | ZCS | Rob_Bit | 1 | None | Local | Yes |

PRI Information Report

Print Menu Option: PRI Info
Sections: Network Selection, Special Service, Call-by-Call and Dial Plan Routing Tables; PRI Information

PRI INFORMATION

System: By line

Bchnl Grp #: Slot: Test Tel Num: NtwkServ: Incoming Routing:
 1 9 00011 By Line Appearance

Channel ID: 1

Line PhoneNumber NumberToSend

Network Selection Table

| | | | | |
|-------------------|---------|--------|---------|---|
| Entry Number: | 0 | 1 | 2 | 3 |
| Pattern to Match: | 101**** | 10**** | 101**** | |

Special Service Table

| | | | | | | | | |
|-------------------|------|------|----|----|------|------|------|------|
| Entry Number: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Pattern to Match: | 011 | 010 | 01 | 00 | 0 | 1 | | |
| Operator: | none | none | OP | OP | OP/P | none | none | none |
| Type of Number: | 1 | 1 | 1 | N | N | 1 | 1 | N |
| Digits to Delete: | 3 | 1 | 3 | 2 | 1 | 1 | 0 | 0 |

Call-By-Call Service Table

| | | | | | |
|---------------|------------|------------|-------|----------|------|
| Entry Number: | 0 | 1 | 2 | 3 | 4 |
| Pattern 0: | 777 | | | | |
| Pattern 1: | | 212555 | | | |
| Pattern 2: | | 212 | | | |
| Call Type: | BOTH | BOTH | BOTH | BOTH | BOTH |
| NtwkServ: | | No Service | | OUT WATS | |
| DeleteDigits: | 0 | 1 | 2 | 0 | 0 |
| Entry Number: | 5 | 6 | 7 | 8 | 9 |
| Call Type: | BOTH | BOTH | BOTH | BOTH | BOTH |
| NtwkServ: | No Service | | 00111 | | |
| DeleteDigits: | 0 | 0 | 0 | 0 | 0 |

PRI Information Report - Continued

Dail Plan Routing Table

| | | | | |
|-------------------|---|----------|-------------|-------|
| Entry Number: | 0 | 1 | 2 | 3 |
| NtwkServ: | | OUT WATS | Any service | 11100 |
| Expected Digits: | 0 | 0 | 11 | 0 |
| Pattern to Match: | | 222 | | |
| Digits to Delete: | 0 | 1 | 0 | 0 |
| Digits to Add: | | 22 | | |

| | | | | |
|-------------------|-------|---|---|---|
| Entry Number | 4 | 5 | 6 | 7 |
| NtwkServ: | 11100 | | | |
| Expected Digits: | 2 | 1 | 0 | 0 |
| Pattern to Match: | 2 | | | |
| Digits to Delete: | 0 | 1 | 2 | 0 |
| Digits to Add: | 2 | | | |

| | | | | |
|---------------|---|---|----|----|
| Entry Number: | 8 | 9 | 10 | 11 |
|---------------|---|---|----|----|

PRI INFORMATION

| | | | | |
|-------------------|---|---|---|---|
| NtwkServ: | | | | |
| Expected Digits: | 0 | 0 | 0 | 0 |
| Pattern to Match: | | | | |
| Digits to Delete: | 0 | 0 | 0 | 0 |
| Digits to Add: | | | | |

| | | | | |
|-------------------|----|----|----|----|
| Entry Number: | 12 | 13 | 14 | 15 |
| NtwkServ: | | | | |
| Expected Digits: | 0 | 0 | 0 | 0 |
| Pattern to Match: | | | | |
| Digits to Delete: | 0 | 0 | 0 | 0 |
| Digits to Add: | | | | |

Remote Access (DISA) Information Report

Print Menu Option: Rmote Access
Sections: General Options; System Default Class of Restrictions (Non-TIE); System Default Class of Restrictions (TIE); Barrier Code Administration

```
GENERAL OPTIONS (ACCESS CODE 889)
Barrier Code required for Non-TIE DISA lines:  Yes
Barrier Code required for TIE DISA lines      :  No
Automatic Queuing enabled for DISA lines     :  Yes

SYSTEM DEFAULT CLASS OF RESTRICTIONS (NON-TIE)
Restriction          : UNRESTRICTED
ARS Restriction Level: 3
Allowed Lists       :
Disallowed Lists    :

SYSTEM DEFAULT CLASS OF RESTRICTIONS (TIE)
Restriction          : UNRESTRICTED
ARS Restriction Level: 3
Allowed Lists       :
Disallowed Lists    :

BARRIER CODE ADMINISTRATION
Barrier Code number : 1
Barrier Digits      : 2468
Restriction         : OUTWARD RESTRICTED
ARS Restriction Level: 3
Allowed Lists       :
Disallowed Lists    :

Barrier Code number : 2
Barrier Digits      : 1234
Restriction         : UNRESTRICTED
ARS Restriction Level: 3
Allowed Lists       :
Disallowed Lists    :

Barrier Code number : 16
Barrier Digits      : 9876
Restriction         : OUTWARD RESTRICTED
ARS Restriction Level: 0
Allowed Lists       :
Disallowed Lists    :
```

Operator Information Report

Print Menu Option: Oper Info
Sections: Operator Positions; General Options; DSS Options; QCC Operator Options; QCC Call Types

OPERATOR POSITIONS

| PORT ADDR. | EXT # | LABEL | TYPE | CALL ALERT (QCC ONLY) |
|------------|-------|---------|------|-----------------------|
| 1/ 1 | 10 | OPERATR | QCC | No |
| 1/ 5 | 14 | EXT 14 | DLC | N/A |
| 2/ 1 | 18 | EXT 18 | DLC | N/A |
| 2/ 5 | 22 | OPERATR | DLC | N/A |
| 6/ 1 | 42 | EXT 42 | DLC | N/A |

GENERAL OPTIONS

Length of hold reminder timer: 60 sec
 DLC Automatic hold enabled : No

DIRECT STATION SELECTOR (DSS) OPTIONS"

| BUTTON NUMBER | FIRST DIAL CODE |
|---------------|-----------------|
| 1 | 0 |
| 2 | 50 |
| 3 | 100 |

Operator Call Park codes: 881 882 883 884 885 886 887 888

QCC OPERATOR OPTIONS

Listed Directory Number for queue : 800
 Held calls return to queue : No
 Automatic hold enabled : No
 Calls-in-queue alarm threshold : 0
 Time until priorities are elevated: 0 sec
 Message Center Operators :
 One Touch Extend : AUTOMATIC
 Rings before extended calls return: 4
 Backup operator station :

Operator Information Report - Continued

QCC CALL TYPES:

| CALL TYPE ===== | PRIORITY ===== | OPERATORS ===== |
|-------------------------|-------------------|--------------------|
| Dial 0 Operator | 4 | 10 |
| Follow Forward | 4 | N/A |
| Unassigned DID | 4 | 10 |
| Listed Directory Number | 4 | 10 |
| Operator's Extension | 4 | N/A |
| Returning | 4 | 0 |
| Group Coverage | | |
| Group # 1 | 4 | |
| Group # 2 | 4 | |
| Group # 3 | 4 | |
| Group # 4 | 4 | |
| Group # 5 | 4 | |
| Group # 6 | 4 | |
| Group # 7 | 4 | |
| Group # 8 | 4 | |
| Group # 9 | 4 | |
| Group # 10 | 4 | |
| Group # 11 | 4 | |
| Group # 12 | 4 | |
| Group # 13 | 4 | |
| Group # 14 | 4 | |
| Group # 15 | 4 | |
| Group # 16 | 4 | |
| Group # 17 | 4 | |
| Group # 18 | 4 | |
| Group # 19 | 4 | |
| Group # 20 | 4 | |
| Group # 21 | 4 | |
| Group # 22 | 4 | |
| Group # 23 | 4 | |
| Group # 24 | 4 | |
| Group # 25 | 4 | |
| Group # 26 | 4 | |
| Group # 27 | 4 | |
| Group # 28 | 4 | |
| Group # 29 | 4 | |
| Group # 30 | 4 | |

Allowed Lists Report

Print Menu Option: AllowList
Sections: Lists 1 through 7

ALLOWED LISTS

List : 0

Entry 0: -----
Entry 1: -----
Entry 2: -----
Entry 3: -----
Entry 4: -----
Entry 5: -----
Entry 6: -----
Entry 7: -----
Entry 8: -----
Entry 9: -----

•
•
•

List : 7

Entry 0: -----
Entry 1: -----
Entry 2: -----
Entry 3: -----
Entry 4: -----
Entry 5: -----
Entry 6: -----
Entry 7: -----
Entry 8: -----
Entry 9: -----

Access to Allowed Lists Report

Print Menu Option: AllowListTo

ACCESS TO ALLOWED LISTS

FOR REMOTE ACCESS 17 & 18 MEAN TIE & NON-TIE RESTRICTIONS

| | | | | | |
|------|---|------|----|----|----|
| List | 1 | STNS | 10 | | |
| | | RACC | 1 | 17 | 18 |
| List | 3 | STNS | 33 | | |
| | | RACC | | | |

Disallowed Lists Report

Print Menu Options: DisallowLst
Sections: Lists 1 through 7

DISALLOWED LISTS

List : 0

Entry 0: -----
Entry 1: -----
Entry 2: -----
Entry 3: -----
Entry 4: -----
Entry 5: -----
Entry 6: -----
Entry 7: -----
Entry 8: -----
Entry 9: -----

.....
.....
.....

List : 7

Entry 0: -----
Entry 1: -----
Entry 2: -----
Entry 3: -----
Entry 4: -----
Entry 5: -----
Entry 6: -----
Entry 7: -----
Entry 8: -----
Entry 9: -----

Access to Disallowed Lists Report

Print Menu Option: DisallowTo

ACCESS TO DISALLOWED LISTS

FOR REMOTE ACCESS 17 & 18 MEAN TIE & NON-TIE RESTRICTIONS

| | | | |
|------|---|------|----|
| List | 1 | STNS | 33 |
| | | RACC | 9 |
| List | 3 | STNS | 33 |
| | | RACC | |

Automatic Route Selection Report

Print Menu Option: ARS
Sections: Tables

AUTOMATIC ROUTE SELECTION

ARS IS: ACTIVE ACCESS CODE: 9

TABLE 17: Default Toll Output Table

| Pool | Absorb | Other Digits | FRL | Call type | Start | Pattern |
|--------|--------|--------------|-----|-----------|-------|---------|
| 1)70-- | 00 | ----- | 3 | BOTH | --:-- | A |
| 2)---- | -- | ----- | - | ---- | --:-- | A |
| 3)---- | -- | ----- | - | ---- | --:-- | A |
| 4)---- | -- | ----- | - | ---- | --:-- | A |
| 5)---- | -- | ----- | - | ---- | --:-- | A |
| 6)---- | -- | ----- | - | ---- | --:-- | A |

| Pool | Absorb | Other Digits | FRL | Call type | Start | Pattern |
|--------|--------|--------------|-----|-----------|-------|---------|
| 1)70-- | 00 | ----- | 3 | BOTH | --:-- | B |
| 2)---- | -- | ----- | - | ---- | --:-- | B |
| 3)---- | -- | ----- | - | ---- | --:-- | B |
| 4)---- | -- | ----- | - | ---- | --:-- | B |
| 5)---- | -- | ----- | - | ---- | --:-- | B |
| 6)---- | -- | ----- | - | ---- | --:-- | B |

TABLE 18: Default Local Output Table

| Pool | Absorb | Other Digits | FRL | Call type | Start | Pattern |
|--------|--------|--------------|-----|-----------|-------|---------|
| 1)70-- | 00 | ----- | 3 | BOTH | --:-- | A |
| 2)---- | -- | ----- | - | ---- | --:-- | A |
| 3)---- | -- | ----- | - | ---- | --:-- | A |
| 4)---- | -- | ----- | - | ---- | --:-- | A |
| 5)---- | -- | ----- | - | ---- | --:-- | A |
| 6)---- | -- | ----- | - | ---- | --:-- | A |

| A | Pool | Absorb | Other Digits | FRL | Call type | Start | Pattern |
|---|--------|--------|--------------|-----|-----------|-------|---------|
| | 1)70-- | 00 | ----- | 3 | BOTH | --:-- | B |
| | 2)---- | -- | ----- | - | ---- | --:-- | B |
| | 3)---- | -- | ----- | - | ---- | --:-- | B |
| | 4)---- | -- | ----- | - | ---- | --:-- | B |
| | 5)---- | -- | ----- | - | ---- | --:-- | B |

Automatic Route Selection Report - Continued

TABLE 19: Dial 0 Output Table

| A | Pool | Absorb | Other Digits | FRL | Call type | Start | Pattern |
|--------|------|--------|--------------|-----|-----------|-------|---------|
| 1)70-- | 00 | ----- | | 3 | BOTH | --:-- | A |

TABLE 20: N11 Output Table

01)411 02)611 03)811 04)911

| Pool | Absorb | Other Digits | FRL | Call type | Start | Pattern |
|--------|--------|--------------|-----|-----------|-------|---------|
| 1)70-- | 00 | ----- | 3 | BOTH | --:-- | A |
| 1)70-- | 00 | ----- | 3 | BOTH | --:-- | A |

Extension Directory Report

Print Menu Option: Ext Direct

EXTENSION DIRECTORY

| Port | Ext # | Label | F | H | R | M | V | R | A | Port | Ext # | Label | F | H | R | M | V | R | A |
|------|-------|---------|---|---|---|---|---|---|---|------|-------|---------|---|---|---|---|---|---|---|
| Addr | | | A | B | C | I | S | S | R | Addr | | | A | B | C | I | S | S | R |
| | | | C | I | F | C | I | T | S | | | | C | I | F | C | I | T | S |
| | | | E | S | W | D | G | R | R | | | | E | S | W | D | G | R | R |
| 1/ 1 | 10 | OPERATR | N | N | N | N | U | 3 | | 1/21 | 710 | | N | N | N | N | U | 3 | |
| 1/ 2 | 11 | | N | N | N | N | O | 3 | | 1/22 | 711 | | N | N | N | N | U | 3 | |
| 1/ 3 | 12 | | N | N | N | N | U | 3 | | 1/23 | 712 | | N | N | N | N | U | 3 | |
| 1/ 4 | 13 | EXT 13 | N | N | N | N | U | 3 | | 1/24 | 713 | | N | N | N | N | U | 3 | |
| 1/ 5 | 14 | EXT 14 | N | N | N | N | U | 3 | | 1/25 | 714 | | N | N | N | N | U | 3 | |
| 1/ 6 | 15 | | N | N | N | N | U | 3 | | 1/26 | 715 | | N | N | N | N | U | 3 | |
| 1/ 7 | 16 | | N | N | N | N | U | 3 | | 1/27 | 716 | | N | N | N | N | U | 3 | |
| 1/ 8 | 17 | | N | N | N | N | U | 3 | | 1/28 | 717 | | N | N | N | N | U | 3 | |
| 2/ 1 | 18 | EXT 18 | N | Y | N | N | U | 3 | | 2/ 2 | 19 | | N | Y | N | N | U | 3 | |
| 2/ 3 | 20 | | N | Y | N | N | U | 3 | | 2/ 4 | 21 | | N | Y | N | N | U | 3 | |
| 2/ 5 | 22 | OPERATR | N | Y | N | N | U | 3 | | 2/ 6 | 23 | | N | Y | N | N | U | 3 | |
| 2/ 7 | 24 | | N | Y | N | N | U | 3 | | 2/ 8 | 25 | | N | Y | N | N | U | 3 | |
| 3/ 1 | 26 | | N | Y | N | N | U | 3 | | 3/ 2 | 27 | | N | Y | N | N | U | 3 | |
| 3/ 3 | 28 | | N | Y | N | N | U | 3 | | 3/ 4 | 29 | | N | Y | N | N | U | 3 | |
| 3/ 5 | 30 | AUDIXVP | N | Y | N | N | U | 3 | | 3/ 6 | 31 | | N | Y | N | N | U | 3 | |
| 3/ 7 | 32 | AUDIXVP | N | Y | N | N | U | 3 | | 3/ 8 | 33 | | N | Y | N | N | U | 3 | |
| 4/ 1 | 34 | | N | Y | N | N | U | 3 | | 4/ 2 | 35 | AUDIXVP | N | Y | N | N | U | 3 | |
| 4/ 3 | 36 | AUDIXVP | N | Y | N | N | U | 3 | | 4/ 4 | 37 | | N | Y | N | N | U | 3 | |
| 4/ 5 | 38 | | N | Y | N | N | U | 3 | | 4/ 6 | 39 | | N | Y | N | N | U | 3 | |
| 4/ 7 | 40 | | N | Y | N | N | U | 3 | | 4/ 8 | 41 | | N | Y | N | N | U | 3 | |
| 6/ 1 | 42 | EXT 42 | N | N | N | N | U | 3 | | 6/21 | 742 | | N | N | N | N | U | 3 | |
| . | | | | | | | | | | | | | | | | | | | |
| . | | | | | | | | | | | | | | | | | | | |
| . | | | | | | | | | | | | | | | | | | | |
| 7/ 1 | 54 | EXT 54 | N | N | N | N | U | 3 | | 7/2 | 754 | | N | N | N | N | U | 3 | |

System Directory Report

Print Menu Option: Sys Direct

SYSTEM DIRECTORY

| Code | Name | Number | Display |
|------|---------------|--------------|---------|
| 600 | ABC Company | 555-9999 | YES |
| 601 | Jacques Smith | 5551212 | YES |
| 605 | Travel Agency | 912015556677 | YES |

Group Paging Report

Print Menu Option: Group Page

GROUP PAGING

Group # 793 STNS : 20 21 22 23 24 25

Group # 794 STNS : 15 16 17 18 19

Extension Information Report

Print Menu Option: Ext Info plus extension number

EXTENSION INFORMATION

Extn SS/PP Type
10 1/ 1 MLX-20L + 1 DSS

Pool Access : 70 890 891 892 893 894 895 896 897 898 899

Page Group :

Primary Coverage :

Secondary Coverage :

Coverage Group : 5

Group Coverers : 773

NS Groups : 10

Group Calling Member:

Pickup Groups :

Allowed Lists :

Disallowed Lists :

Restrictions : UNRESTRICTED

Auto Callback : OFF

Call Waiting : ON

Abbreviated Ring : ON

Line Preference : ON

Shared SA Ring : ON

Receive Voice Calls : ON

Coverage Inside : OFF

Forwarding to :

ARS Restriction : 3

Forced Account Code : No

Microphone Disable : No

Remote Forward Allow: No

NS Exclusion : No

Voice Announce Pair : No

Voice/Data Pair : No

BIS/HFAI : No

Language : English

Extension Information Report - Continued

| EXTENSION INFORMATION | | | |
|-----------------------|-------|----------------------|-------------|
| Extn | SS/PP | Type | |
| 10 | 1/ 1 | MLX-20L + 1 DSS | |
| Button 34 | | Blank | Status None |
| Button 33 | | Blank | Status None |
| Button 32 | | Blank | Status None |
| Button 31 | | Blank | Status None |
| Button 30 | | Blank | Status None |
| Button 29 | | Blank | Status None |
| Button 28 | | Blank | Status None |
| Button 27 | | Blank | Status None |
| Button 26 | | Blank | Status None |
| Button 25 | | Blank | Status None |
| Button 24 | | Blank | Status None |
| Button 23 | | Blank | Status None |
| Button 22 | | Blank | Status None |
| Button 21 | | Blank | Status None |
| Button 20 | | Forced Release | Status None |
| Button 19 | | Pool Inspect | Status None |
| Button 18 | | Headset Auto Answer | Status Off |
| Button 17 | | Join | Status None |
| Button 16 | | Cancel | Status None |
| Button 15 | | Alarm Status: | Status Off |
| Button 14 | | Night Service | Status Off |
| Button 13 | | Headset Status | status Off |
| Button 12 | | Destination | Status None |
| Button 11 | | Release | Status None |
| Button 10 | | Position Busy | Status Off |
| Button 9 | | Send/Remove Message | Status None |
| Button 8 | | Handset/Headset Mute | Status Off |
| Button 7 | | Source | Status None |
| Button 6 | | Start | Status None |
| Button 5 | | Call 5 | Status None |
| Button 4 | | Call 4 | Status None |
| Button 3 | | Call 3 | Status None |
| Button 2 | | Call 2 | Status None |
| Button 1 | | Call 1 | Status None |

Group Coverage Information Report

Print Menu Option: GrpCoverage

GROUP COVERAGE INFORMATION

Group # 2 Senders : 6802 6804
Group # 5 Senders : 10 11 12 13 14 18 19 20 42
44 45 47 6810

DIRECT GROUP CALLING INFORMATION

Group # : 770 Group Type : AutoLogout
Call Distribution Type : CIRCULAR
Delay Announcement Ext # : 11
Message Waiting Station : 20
Calls_in_queue Threshold : 1
External Alert ext # : 21
Overflow Threshold : 1
Overflow to DGC group # :
Group Coverage : 1

| No. | EXT # | LABEL |
|-----|-------|-------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |
| 17 | | |
| 18 | | |
| 19 | | |
| 20 | | |

Direct Group Calling Information Report

Print Menu Option: Grp Calling
Sections: Each programmed group

DIRECT GROUP CALLING INFORMATION

Group # : 782 Group Type : Auto Logout
Call Distribution Type : CIRCULAR
Delay Announcement Ext # :
Message Waiting Station :
Calls_in_queue Threshold : 1
External Alert ext # :
Overflow Threshold : 1
Overflow to DGC group # :
Group Coverage : 1

| No. | EXT # | LABEL |
|-----|-------|-------|
| 1 | 12 | |
| 2 | 13 | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |
| 17 | | |
| 18 | | |
| 19 | | |
| 20 | | |

LINES :

Night Service Information Report

Print Menu Option: Night Service

NIGHT SERVICE INFORMATION

| | | | |
|----------|----|---------|----|
| OPERATOR | 10 | DGCG #: | |
| | | STNS : | 10 |
| OPERATOR | 14 | DGCG #: | |
| | | STNS : | 14 |
| OPERATOR | 18 | DGCG #: | |
| | | STNS : | 18 |
| OPERATOR | 22 | DGCG #: | |
| | | STNS : | 22 |
| OPERATOR | 42 | DGCG #: | |
| | | STNS : | 42 |

Password :

Current Day : OFF

| | Turn off at: | Turn on at: |
|-----------|--------------|-------------|
| Sunday | : | : |
| Monday | : | : |
| Tuesday | : | : |
| Wednesday | : | : |
| Thursday | : | : |
| Friday | : | : |
| Saturday | : | : |

Emergency Allowed List:

0)
1)
2)
3)
4)
5)
6)
7)
8)
9)

NS Excluded STNS:

61 62 63 64 65

Group Call Pickup Report

Print Menu Option: Call Pickup

GROUP CALL PICKUP

Group # 1 STNS : 10 11 12 13 14 15 16

Group # 2 STNS : 17 18 19 20

Group # 3 STNS : 21 22 23 24 25 26 27 28 29 30

Group # 4 STNS : 31

Group # 5 STNS : 32

Group # 6 STNS : 33

Group # 7 STNS : 34

Group # 8 STNS : 35

Group # 9 STNS : 36

Group # 10 STNS : 37

Error Log Report

Print Menu Option: Error Log

ERROR LOG

Last 10 System Errors:

| Message | SS/PP | Cnt | First | Last | Code |
|-----------------------|-------|-----|-------|----------------|------|
| PRI SVC AUDIT TIMEOUT | 00/00 | - | - | 01/08 00:00:53 | 7001 |
| TIMEOUT COLD START | 00/00 | - | - | 01/11 00:04:08 | 0001 |
| PRI SVC AUDIT TIMEOUT | 00/00 | - | - | 01/11 00:04:14 | 7001 |
| TIMEOUT COLD START | 00/00 | - | - | 01/21 00:22:14 | 0001 |
| PRI SVC AUDIT TIMEOUT | 00/00 | - | - | 01/03 00:22:14 | 7001 |
| PRI SVC AUDIT TIMEOUT | 00/00 | - | - | 01/04 00:22:14 | 7001 |
| SOFTWARE COLD START | 00/00 | - | - | 01/04 00:21:14 | 0003 |
| SOFTWARE COLD START | 00/00 | - | - | 01/04 00:21:14 | 0003 |
| PRI SVC AUDIT TIMEOUT | 00/00 | - | - | 01/04 00:21:14 | 7001 |
| SOFTWARE COLD START | 00/00 | - | - | | |

Button Diagrams

F

This appendix contains the button diagrams for Hybrid/PBX systems as well as button diagrams for Key and Behind Switch systems.

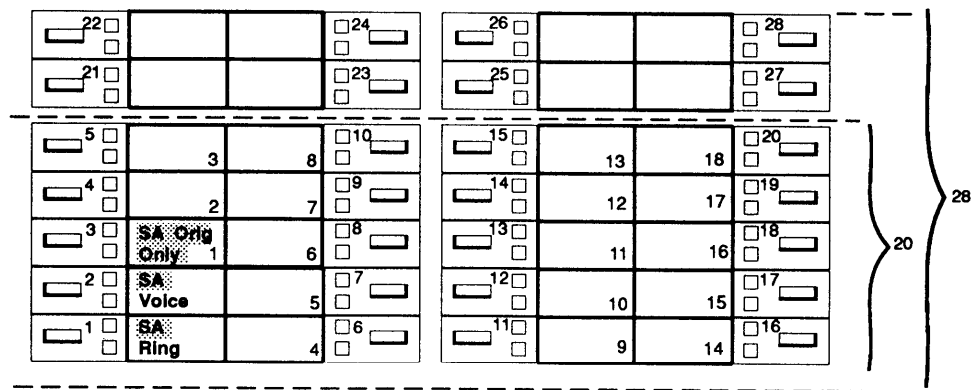


Figure F-1. MLX Telephone Button Diagram (Hybrid/PBX Mode)

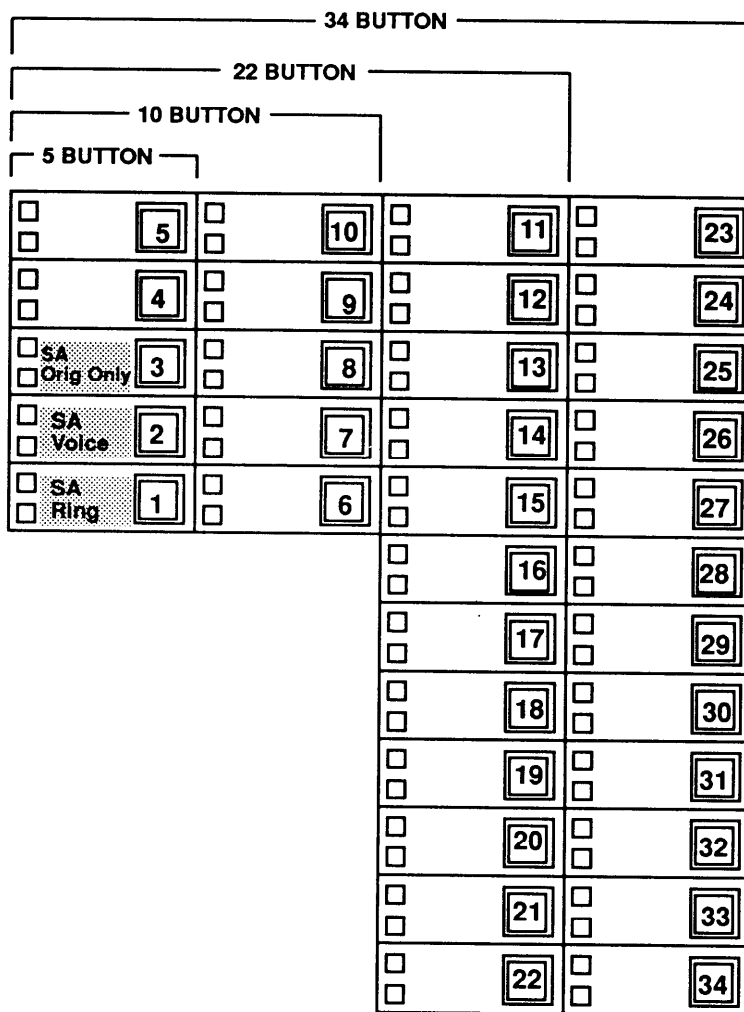
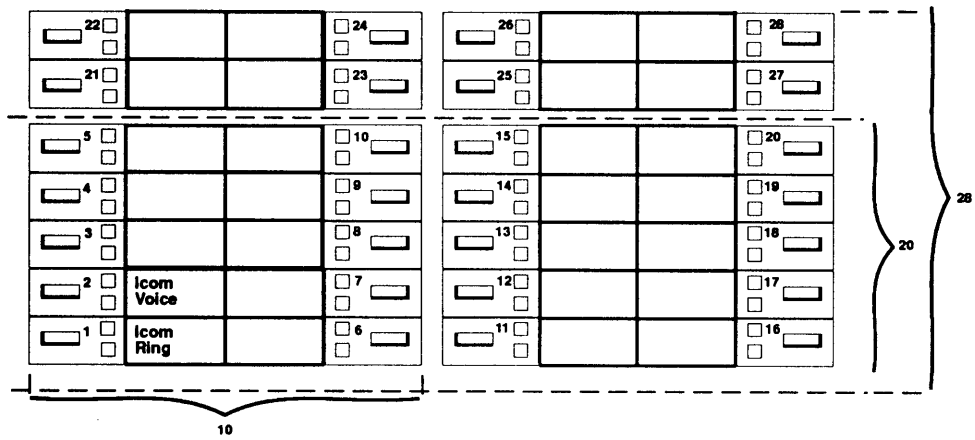


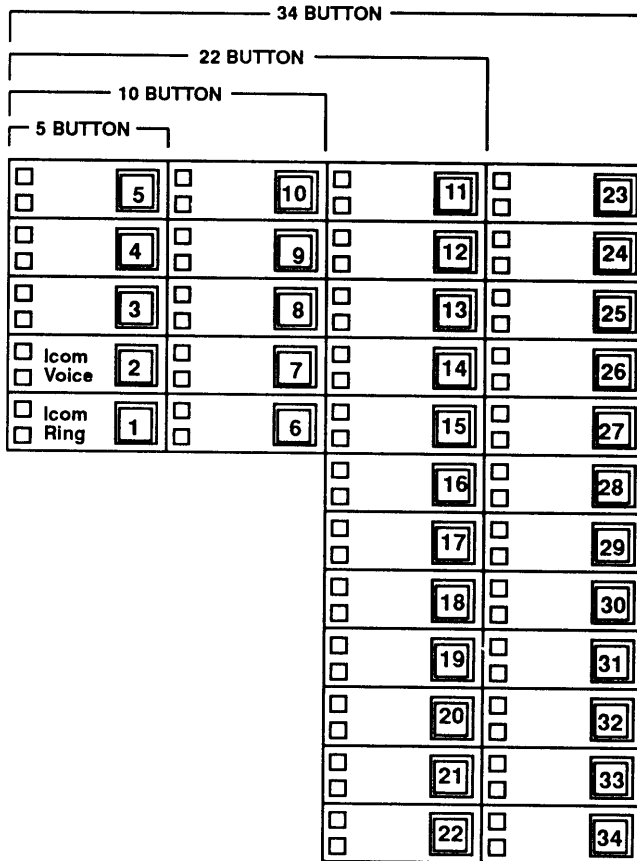
Figure F-2. Analog Multiline Telephone Button Diagram (Hybrid/PBX Mode)



Key Mode:
Up to 8 personal line buttons are assigned beginning at button 3.

Behind Switch Mode:
One prime line button is assigned to button 3.

Figure F-3. MLX Telephone Button Diagram (Key and Behind Switch Mode)



Key Mode:
Up to 8 Personal line buttons are assigned beginning at button 3.

Behind Switch Mode:
One prime line button is assigned to button 3.

Figure F-4. Analog Multiline Telephone Button Diagram (Key and Behind Switch Mode)

Programming Special Characters

G

This appendix provides the special characters used in dialing sequences for numbers dialed automatically, such as on **Auto Dial** buttons. The characters allowed depend on the type of telephone.

Single-Line Telephones

Some dialing sequences need special characters. For example, the user would press and release either the **Recall** or **Flash** button or the switchhook to insert a Pause in a dialing sequence after a dial-out code to allow the system to seize an outside line before dialing the number.

Table G-1. Special Characters for Single-Line Telephones

| Press... | Means... |
|--|---|
| Recall, Flash, or switchhook | Pause. Inserts 1.5-second pause in the dialing sequence. Multiple consecutive pauses are allowed. |
| # | End of Dialing. Used to signal the end of the dialing sequence or to separate one group of dialed digits from another, such as an Account Code from a telephone number. |

Analog Multiline Telephones

Some dialing sequences need special characters. For example, the user would press **Hold** to insert a Pause (p) after the dial-out code in a dialing sequence to allow the system to seize an outside line before dialing the number. A Pause can also be used to separate a telephone number from an extension number.

Table G-2. Special Characters for Analog Multiline Telephones

| Press... | See*... | Means... |
|--------------------|---------|---|
| Drop† | s | Stop. Inserts a Stop within a sequence of automatically dialed numbers. For example, an outside Auto Dial button may be programmed with a password, then a Stop, then a telephone number. To use Auto Dial with a Stop in the sequence, the user presses the button to dial the password, listens for the dialing and connection, and presses the button again to dial the number. |
| Hold | p | Pause. Inserts a 1.5-second pause in the dialing sequence. Multiple consecutive pauses are allowed. |
| Conference† | f | Flash. Sends a switchhook flash. Must be the first entry in the dialing sequence. |
| ## | # | End of Dialing for Auto Dial buttons. Used at the end of a dialing sequence to indicate the user has finished dialing or to separate one group of dialed digits from another, such as an Account Code from a telephone number. |
| # | # | End of Dialing. Used at the end of a dialing sequence to indicate the user has finished dialing or to separate one group of dialed digits from another. |

* Display telephones only.

† Not available on MLC-5 cordless telephones,

MLX-10 Non-Display Telephone

Some dialing sequences need special characters. For example, the user would press **Hold** to insert a Pause (p) after the dial-out code in a dialing sequence to allow the system to seize an outside line before dialing the number. A Pause can also be used to separate a telephone number from an extension number.

Table G-3. Special Characters for MLX Non-Display Telephone

| Press... | Means... |
|-----------------|---|
| Drop | Stop. Halts the dialing sequence to allow the system to respond. |
| Hold | Pause. Inserts a 1.5-second pause in the dialing sequence. Multiple consecutive pauses are allowed. |
| Conf | Flash. Sends a switchhook flash. Must be the first entry in the dialing sequence. |
| ## | End of Dialing for extension programming only. Used at the end of a dialing sequence to indicate the user has finished dialing or to separate one group of dialed digits from another, such as an Account Code from a telephone number. |
| # | End of Dialing. Used to signal the end of the dialing sequence or to separate one group of dialed digits from another, such as an Account Code from a telephone number. |

MLX Display Telephones

Some dialing sequences need special characters. For example, the user would press **Hold** to insert a Pause in a dialing sequence after a dial-out code to allow the system to seize an outside line before dialing the number. A Pause can also be used to separate a telephone number from an extension number.

Table G-4. Special Characters for MLX Display Telephones

| Press... | See... | Means... |
|-----------------|---------------|---|
| Drop | s | Stop. Halts the dialing sequence to allow for system response. |
| Hold | p | Pause. Inserts a 1.5-second pause in the dialing sequence. Multiple consecutive pauses are allowed. |
| Conf | f | Flash. Sends a switchhook flash. Must be the first entry in the dialing sequence. |
| ## | # | End of Dialing for extension programming only. Used at the end of a dialing sequence to indicate the user has finished dialing or to separate one group of dialed digits from another, such as an Account code from a telephone number. |
| # | # | End of Dialing. Used to signal the end of the dialing sequence or to separate one group of dialed digits from another, such as an Account code from a telephone number. |

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| 7500B Data Module | A data communications device that allows connection between RS-232 data terminal equipment (DTE) and the communications system control unit via MLX station jacks on the 008 MLX or 408 GS/LS-MLX module. The 7500B Data Module is used together with a modem in a modem pool to change digital signals to analog signals, and vice versa, which allows transmission between digital and analog data stations. |
| access line | A connection from the customer to the local telephone company that provides access to the public network. Also called <i>local loop</i> . |
| account code | A code used to associate incoming and outgoing calls with corresponding accounts, employees, projects, and clients. |
| Accunet | AT&T's switched digital service for 56-kbps, 64-kbps restricted, and 64-kbps clear circuit-switched data calls. |
| address | A coded representation of the destination of data or of the data's originating terminal, such as the dialed extension number assigned to the data terminal. Multiple terminals on one communications line, for example, must each have a unique address. |
| adjunct | Optional equipment used with the communications system such as an alerting device that connects to a multiline telephone or to a telephone jack. |
| administration port reassignment | Reassignment of the system programming port position to any of the first five station jacks on the first MLX module in the communications system control unit. |

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| ALS | (Automatic Line Selection) The programmed order in which the system makes outside lines available to a user. |
| alternate mark inversion (AMI) | See AMI. |
| AMI | (Alternate mark inversion) A line coding format in which a binary 1 is represented by a positive or negative pulse, a binary 0 is represented by no line signal, and subsequent binary 1s must alternate in polarity; otherwise, a bipolar violation occurs. AMI is used in the DS1 interface. |
| analog transmission | A mode of transmission in which information is represented in continuously variable physical quantities such as amplitude, frequency, phase, or resistance. <i>See also</i> digital transmission. |
| ANI | (Automatic Number Identification) The process of automatically identifying a caller's billing number and transmitting that number from the caller's local central office to another point on or off the public network. INFO-2 (Information Forwarding-2) is AT&T's ANI service. |
| application | Software and/or hardware that adds functional capabilities to the communications system. For example, AUDIX Voice Power is an IS II/III application that provides a variety of voice messaging system services. |
| ARS | (Automatic Route Selection) A communications system feature that routes calls on outside trunks according to the number dialed and trunk availability. |
| ASCAP | American Society of Composers, Artists, and Producers. |
| ASN | (AT&T Switched Network) AT&T telecommunications services provided through an Integrated Digital Services Network Primary Rate Interface (ISDN-PRI) trunk, Accunet switched digital service, Megacom WATS, Megacom 800, Software Defined Network (SDN), MultiQuest, and Shared Access for Switch Services (SASS). |
| asynchronous data transmission | A method of transmitting a short bit stream of digital data, such as printable characters represented by a 7- or 8-bit ASCII code. Each string of data bits is preceded by a start bit and followed by a stop bit, thus permitting data to be transmitted at irregular intervals. <i>See also</i> synchronous data transmission. |
| AT&T Switched Network | See ASN. |
| AUDIX Voice Power | A voice-processing application, part of IS II/III, that provides Automated Attendant, Call Answer, Information Service, Message Drop, Voice Mail, and, optionally, FAX Attendant System for use with the communications system. |

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| Automated Attendant | An IS II/III, MERLIN MAIL, and MERLIN Attendant application that automatically answers incoming calls with a recorded announcement and directs callers to a department, an extension, or the system operator. |
| Automatic Line Selection | See ALS. |
| Automatic Number Identification | See ANI. |
| automatic ringdown tie-trunk | See automatic-start tie trunk. |
| Automatic Route Selection | See ARS. |
| automatic-start tie trunk | A tie trunk on which incoming calls are routed to an operator or other designated destination without a start signal. Also called <i>automatic ringdown tie-trunk</i> or <i>auto-in tie trunk</i> . |
| auxiliary power unit | A device that provides additional power to the communications system. |
| B8ZS | (Bipolar 8 zero substitution) A line-coding format that encodes a string of eight zeroes in a unique binary sequence using bipolar violation. See also bipolar signal and bipolar violation. |
| B-channel | A 64-kbps channel that carries a variety of digital information streams, such as voice at 64 kbps, data at up to 64 kbps, wideband voice encoded at 64 kbps, and voice at less than 64 kbps, alone or combined with other digital information streams. Also called <i>bearer channel</i> . |
| bandwidth | The difference, expressed in hertz, between the highest and lowest frequencies in a range of frequencies that determine channel capacity. |
| barrier code | A password used to limit access to the Remote Access feature of the communications system. |
| basic carrier | A piece of hardware that holds and connects the processor, power supply, and up to five modules in the communications system. See also expansion carrier. |
| Basic Rate Interface | See BRI. |
| baud rate | A unit of transmission speed equal to the number of signal events per second. See also bit rate and bps. |

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| Behind Switch mode | One of three modes of system operation, in which the communications system control unit is connected to (is "behind") another telephone switching system, which provides features and services to telephone users. See <i>also</i> Hybrid/PBX mode and Key mode. |
| binary code | An electrical representation of quantities or symbols expressed in the base-2 number system. |
| bipolar 8 zero substitution | See B8ZS. |
| bipolar signal | A digital signal in which pulses (1s) alternate between positive and negative. See <i>also</i> AMI, alternate space inversion, B8ZS, and bipolar violation. |
| bipolar violation | A condition that occurs when two positive or two negative pulses are received in succession. See <i>also</i> AMI, alternate space inversion, B8ZS, and bipolar signal. |
| BIS | Part of the model name for some analog multiline telephones, standing for built-in speakerphone. |
| bit | (Binary digit) One unit of information in binary notation, having two possible values: zero or one. |
| bit rate | The speed at which bits are transmitted, usually expressed in bps. Also called <i>data rate</i> . See <i>also</i> baud and bps. |
| blocking | A condition in which end-to-end connections cannot be made on calls because of a full load on all possible services and facilities. |
| BMI | Broadcast Music Incorporated. |
| bps | (Bits per second) A measure of digital transmission speed. |
| BRI | (Basic Rate Interface) A standard ISDN frame format that specifies the protocol used between the communications system and a terminal. BRI runs at 192 kbps and provides two 64-kbps voice or B-channels and one 16-kbps signaling or D-channel per port. The remaining 48 kbps are used for framing and D-channel contention. |
| broadband | A transmission path having a bandwidth greater than a voice-grade channel. |
| bus | A multiconductor electrical path used to transfer information over a common connection from any of several sources to any of several destinations. |
| button | A key on the face of a telephone that is used to access a line, activate a feature, or enter a code on a communications system. |

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| byte | A sequence of bits (usually eight) processed together. "octet" is used instead of "byte" in CCITT (International Telegraph and Telephone Consultative Committee) documentation. |
| Call Accounting System | See CAS. |
| Call Accounting Terminal | See CAT. |
| Call Answer | The AUDIX Voice Power service that allows callers who reach a busy or unanswered extension to leave a message, transfer to another extension, or transfer to a system operator. |
| Callback queue | The queue that holds Callback requests for a busy pool or extension. |
| Calling Group | A team of individuals who answer the same types of calls. |
| Call Management System | See CMS. |
| Campus cable | Cable that runs between buildings connected to the same communications system. |
| CAS | (Call Accounting System) A DOS- or UNIX system-based application that monitors and manages telecommunications costs. |
| CAT | (Call Accounting Terminal) A standalone unit with a built-in microprocessor and data buffer that provides simple call accounting at a low cost. |
| CCITT | International Telegraph and Telephone Consultative Committee. |
| CCS | (Common-channel signaling) Signaling in which one channel of a group of channels carries signaling information for each of the remaining channels, permitting each of the remaining channels to be used to nearly full capacity. In the system's DS1 module, channel 24 can be designated as the signaling channel for channels 1-23 by selecting "common channel" for emulated service when programming the system. CCS must be used for ISDN-PRI service. |
| central office | The location of telephone switching equipment that provides local telephone service and access to toll facilities for long-distance calling. |
| central processor | The part of a computer that interprets and executes instructions. Also called <i>central processing unit</i> . |

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| Centrex | A set of communications system features to which a user can subscribe on telephone trunks from the local telephone company. |
| channel | A telecommunications transmission path for voice and/or data. |
| channel service unit | See CSU. |
| checksum | The sum of ones in a sequence of ones and zeroes to detect or correct errors in data transmission. |
| circuit-switched data call | A data call made via a connection exclusively established and maintained between data stations for the duration of the data call. |
| class of restriction | See COR. |
| clock synchronization | The operation of digital facilities from a common clock. |
| CMS | (Call Management System) A DOS-based application that simulates the actions of a system operator by answering and distributing calls. CMS also produces management reports for call analysis. |
| coaxial cable | A cable consisting of one conductor, usually a small copper tube or wire, within and insulated from another conductor of large diameter, usually copper tubing or copper braid. |
| codec | (Coder-decoder) A device used to convert analog signals such as speech, music, or television to digital form for transmission over a digital medium and back to the original analog form. |
| common channel signaling | See CCS. |
| communications system | The software-controlled processor complex that interprets dialing pulses, tones, and or keyboard characters and makes the proper interconnections both inside and outside the system. The communications system consists of a digital computer, software, a storage device, and carriers with special hardware to perform the actual connections. A communications system provides voice and/or data communications services, including access to public and private networks, for telephones and data terminals on a customer's premises. |
| control unit | The processor, power supply, modules, carriers, and housing of the communications system. |

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| conversion resource | See modem pool. |
| COR | (Class of restriction) The various types of restrictions that can be assigned to Remote Access trunks or barrier codes. These restrictions consist of Calling Restrictions, ARS Facility Restriction Levels (FRLs), Allowed Lists, Disallowed Lists, and Automatic Callback queuing. |
| CO trunk jack | A jack that connects an outside trunk to the communications system control unit. |
| CRC | (Cyclic redundancy check) An error-detection code used on DS1 facilities with the extended superframe format (ESF). |
| CSU | (Channel service unit) Equipment used on customer premises to provide DS1 facility terminations and signaling compatibility. |
| cyclic redundancy check | See CRC. |
| D4 framing format | A framing format consisting of a sequence of individual frames of 24 eight-bit slots and one signal bit (193 bits) in a 12-frame superframe. See <i>a/so</i> ESF. |
| data channel | See D-channel. |
| data communications equipment | See DCE. |
| data hunt group | See DHG. |
| data rate | See bit rate. |
| data terminal | An I/O device that can be connected to the communications system control unit via an interface. |
| data terminal equipment | See DTE. |
| DCE | (Data communications equipment) Equipment such as modems or data modules used to establish, maintain, and terminate a connection between the communications system and data terminal equipment, such as printers, host computers, or workstations. |
| D-channel | A 16-kbps or 64-kbps channel that carries signaling information or data on a BRI or PRI. |
| DCP | (Digital Communications Protocol) An AT&T proprietary protocol to transmit both digitized voice and data over the same communications link. A DCP link is made up of two 64-kbps information (I) channels and one signaling (S) channel to the B- and D-channels used in an ISDN. |

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| dedicated feature buttons | The imprinted feature buttons on a telephone: Conf or Conference , Drop , Feature , HFAI (Hands Free Answer on Intercom), Hold , Message , Mute or Microphone , Recall , Speaker or Speakerphone , and Transfer . |
| delay-dial-start tie trunk | A type of tie trunk on which the originating end of the tie trunk transmits an off-hook signal to the receiving end and waits for the receiving end to send an off-hook signal followed by an on-hook signal. Also called <i>dial-repeating tie trunk</i> . |
| DFT | (Direct facility termination) See Personal Line. |
| DHG | (Data hunt group) A group of analog or digital data stations that share a common access code. Calls are connected in a round-robin fashion to the first available data station in the group. |
| dial access | See feature code. |
| Dialed Number Identification Service | See DNIS. |
| dial-out code | A code (usually a 9) dialed by telephone users to get an outside line. |
| DID | (Direct Inward Dialing) A service that transmits the called extension to the communications system from the telephone company central office and routes incoming calls directly to the called extension, Calling Group, or outgoing trunk pool, bypassing the system operator. |
| DID trunk | An incoming trunk that receives dialed digits from the local exchange, allowing the communications system to connect directly to an extension without assistance from the system operator. |
| digital | The representation of information in discrete elements such as off and on or 0 and 1. See <i>also</i> analog transmission. |
| Digital Communications Protocol | See DCP. |
| Digital Signal 0 | See DS0. |
| Digital Signal 1 | See DS1. |
| digital switch element | See DSE. |
| digital transmission | A mode of transmission in which the information to be transmitted is first converted to digital form and then transmitted as a serial stream of pulses. See <i>also</i> analog transmission. |

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| DIP switch | (Dual in-line package) A switch on a 400EM module used to select the signaling format for tie-line transmission. DIP switches are also used on other equipment for setting hardware options. |
| direct facility termination | (DFT) See Personal Line. |
| Direct Inward Dialing | See DID. |
| Direct-Line Console | See DLC. |
| Direct Station Selector | See DSS. |
| display buttons | The buttons on an MLX display telephone used to access the telephone's display. |
| DLC | (Direct-Line Console) A telephone used by a system operator to answer outside calls (not directed to an individual or a group) and inside calls, transfer calls, make outside calls for users with outward calling restrictions, set up conference calls, and monitor system operation. |
| DNIS | (Dialed Number Identification Service) A service provided by the AT&T Switched Network that routes incoming 800 or 900 calls according to customer-selected parameters, such as area code, state, or time of call. |
| door answering unit | A device that is connected to a basic telephone jack and used at an unattended station or front desk. |
| DOS | Disk operating system. |
| DS0 | (Digital Signal 0) A single 64-kbps voice or data channel. |
| DS1 | (Digital Signal 1) A bit-oriented signaling interface that multiplexes twenty-four 64-kbps channels into a single 1.544-Mbps stream. |
| DSE | (Digital switch element) A device in each jack on each module in the communications system control unit that interfaces with the TDM (time-division multiplex) bus. |
| DSS | (Direct Station Selector) A 60-button adjunct that enhances the call-handling capabilities of an MLX-20L or MLX-28D telephone used as an operator console. |
| DTE | (Data terminal equipment) The equipment that makes the endpoints in a connection over a data circuit — for example, a data terminal, host computer, or printer. |
| DTMF signaling | (Dual-tone multifrequency signaling) Touch-tone signaling from telephones using the voice transmission path. DTMF signaling provides 12 distinct signals, each representing a |

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| | dialed digit or character, and each composed of two voice-band frequencies. |
| dual-tone multifrequency signaling | See DTMF signaling. |
| E&M Signaling | Trunk supervisory signaling, used between two communications systems, in which signaling information is transferred through two-state voltage conditions (on the E and M leads) for analog applications and through two bits for digital applications. Used in tie trunks. |
| EIA | (Electronic Industries Association) A trade association of the electronic industry that establishes electrical and functional standards. |
| Electronic Switching System | See ESS. |
| endpoint | The final destination in the path of an electrical or telecommunications signal. |
| ESF | (Extended superframe format) A framing format consisting of individual frames of 24 eight-bit slots and one signal bit (193 bits) in a 24-frame extended superframe. See <i>also</i> D4 framing format. |
| ESS | (Electronic Switching System) A class of central office switching systems developed by AT&T in which the control functions are performed principally by electronic data processors operating under the direction of a stored program. |
| expansion carrier | A carrier added to the control unit when the basic carrier cannot house all of the required modules. An expansion carrier houses a power supply and up to six additional modules. |
| extended superframe format | See ESF. |
| facility | The equipment constituting a telecommunications path between the communications system and the telephone company central office. |
| Facility Restriction Level | See FRL. |
| factory setting | The default state of a device or feature if an optional setting is not programmed by the user or system manager. |

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|-----------------------------|---|
| fax | (Facsimile) The scanning and transmission of a graphic image over a telecommunications facility; the resulting reproduced image; the machine that does the scanning and transmitting. |
| FAX Attendant System | A fax handling and processing application available with AUDIX Voice Power. FAX Attendant services are FAX Call Answer, FAX Mail, and FAX Response. FAX Call Answer provides subscribers with personal fax mailboxes, allowing storage of messages (for example, when the subscriber's fax machine is busy or out of paper) and remote retrieval of messages. FAX Mail allows subscribers to send fax messages to distribution lists, schedule delivery of messages, retrieve messages, and perform administrative tasks such as recording personal greetings and creating distribution lists. FAX Response allows callers to select and receive prepared fax messages through a menu-driven interface. |
| feature | A function or service provided by the communications system. |
| feature code | A code entered on a dialpad to activate a feature. For example, a user can press the Feature button and then dial the feature code 33 to activate Forward. |
| Feature screen | A display screen on MLX display telephones that provides quick access to commonly used features. |
| foil shield | A copper foil sheet (for power units on expansion units) that is used to prevent excessive noise on the module immediately to the right of the power supply in each expansion carrier. |
| foreign exchange | See FX. |
| frame | One of several segments of an analog or digital signal that has a repetitive characteristic. For example, a DS1 frame consists of a framing bit and 24 octets, which equals 193 bits. |
| frequency generator | A circuit pack added to the power supply that generates a high-voltage, 20-30-Hz signal to ring a telephone. Also called <i>ring generator</i> . |
| FRL | (Facility Restriction Level) The ARS calling restriction type that restricts outgoing calls to certain specified routes. |
| FX | (Foreign exchange) A central office other than the one that is providing local access to the public network. |

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| General-Purpose Adapter | See GPA. |
| glare | The condition that occurs when a user tries to call out on a loop-start trunk at the same time that another call arrives on the same trunk. |
| GPA | (General-Purpose Adapter) A device that connects an analog multiline telephone to optional equipment such as an answering machine or a fax machine. |
| ground-start trunk | A trunk on which the communications system, after verifying that the trunk is idle (no ground on tip lead), transmits a request for service (puts ground on ring lead) to the telephone company central office. |
| Group IV (G4) fax machine | A fax unit, offering 400x100 dots per inch (DPI) in fine mode, that can operate at any speed for communication with a Group III (G3) fax machine or another Group IV (G4) fax machine. |
| Hands Free Answer on Intercom | See HFAI. |
| hands-free unit | See HFU. |
| headset | A lightweight earpiece and microphone used for hands-free telephone operation. |
| HFAI | (Hands Free Answer on Intercom) A feature that allows a user to answer a voice-announced call. With HFAI on, the microphone at the telephone receiving the call goes on when the speakerphone goes on. With HFAI off, the microphone is muted when the call arrives. |
| HFU | (Hands-free unit) A unit for analog multiline telephones that allows users to make and receive calls on the speakerphone without using the handset. |
| Home screen | The display normally shown on an MLX display telephone. The Home screen shows time, date, and call information, and shows when some features are in use. (For example, <code>DO NOT DISTURB</code> is displayed when the user has turned on the Do Not Disturb feature.) |
| host | A telephone company or other switch providing features and services to the communications system users, usually when the system is operating in Behind Switch mode. |
| house cable | Cable that runs from the equipment room to a small, walk-in closet (called a satellite closet) elsewhere in the building. |

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| Hybrid/PBX mode | One of three modes of system operation, in which the communications system uses trunk pools and ARS in addition to Personal Lines. Hybrid/PBX mode provides a single interface (SA buttons) to users for both internal and external calling. See <i>also</i> Behind Switch mode and Key mode. |
| immediate-start tie trunk | A tie trunk on which no start signal is necessary; dialing can begin immediately after the trunk is seized. |
| in-band signaling | See robbed-bit signaling. |
| Information Service | The AUDIX Voice Power service that plays a recorded message for callers and then disconnects. |
| inside dial tone | A tone users hear when they are off-hook on an SA or ICOM button. |
| inspect screen | A display screen on an MLX display telephone that allows the user to preview incoming calls and see a list of the features programmed on line buttons. |
| integrated access | Simultaneous customer usage of voice, data, images, and fax on ISDN. |
| Integrated Administration | A capability of IS III that simplifies the programming of common information for the communications system, AUDIX Voice Power, and, if it is also installed, FAX Attendant System. Since the AUDIX Voice Power and FAX Attendant applications use some of the same information programmed on the communications system, Integrated Administration lets the installer or system manager make changes or additions to this information just once, instead of on both sides of the connection. |
| Integrated Services Digital Network | See ISDN. |
| Integrated Solution II/III | See IS II/III. |
| Integrated Voice Power Automated Attendant | An IS II (but not IS III) application that automatically answers incoming calls with a recorded announcement and directs callers to a department, an extension, or the system operator. |
| interface | Hardware and/or software that links systems, programs, or devices. |
| I/O device | (Input/output device) Equipment that can be attached to a computer internally or externally for managing a computer system's input and output of information. |

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| IROB protector | (In-Range Out-of-Building protector) A surge protection device for off-premises telephones at a location within 1000 feet (305 m) of cable distance from the communications system control unit. |
| IS II/III | (Integrated Solution II or Integrated Solution III) A suite of UNIX system-based applications that augments and provides additional services for voice and data communications using the communications system. |
| ISDN | (Integrated Services Digital Network) A public or private network that provides end-to-end digital connectivity for all services to which users have access by a limited set of standard multipurpose user-network interfaces defined by the International Telegraph and Telephone Consultative Committee (CCITT). Through these internationally accepted standard interfaces, ISDN provides digital circuit-switched or packet-switched connections within the network and to other networks to provide national and international digital connectivity. |
| ISDN 7500B Data Module | A data communications device that allows connection between an RS-232 DTE device and the communications system control unit via MLX station jacks on the 008 MLX or 408 GS/LS-MLX module. The ISDN 7500B Data Module is used together with a modem pool to change digital data signals to analog signals and vice versa, which allows transmission between digital and analog data stations. |
| jack | A physical connection point to the communications system for a telephone, trunk, or other device. Also called <i>port</i> . |
| kbps | Kilobits per second. |
| Key mode | One of three modes of system operation, in which the communications system uses Personal Lines on line buttons for outside calls, with a separate interface (ICOM buttons) for internal calling. See <i>also</i> Behind Switch mode and Hybrid/PBX mode. |
| LED | (Light-emitting diode) A semiconductor device that produces light when voltage is applied. LEDs show the operational status of hardware components, the results of maintenance tests, the alarm status of circuit packs, and the activation of telephone features. |
| line and trunk assignment | The assignment of lines and trunks connected to the communications system control unit to specific buttons on each telephone. |
| line coding | The pattern data assumes as it is transmitted over a communications channel. |

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| line compensation | An adjustment for the amount of cable loss in decibels (dB), based on the length of cable between a 100D module and a channel service unit (CSU) or other far-end connection point. |
| line/trunk and station module | A module on which the jacks for connecting central office lines/trunks and/or the jacks for connecting the stations are located. |
| local host computer access | A method for connecting a station jack to an on-site computer for data-only calls through a modem or data module. |
| logical ID | A unique numeric identifier for each station and trunk jack in the communications system control unit. |
| loop-start trunk | A trunk on which a closure between the tip and ring leads is used to originate or answer a call. High-voltage 20-Hz AC ringing current from the central office signals an incoming call. |
| Magic On Hold | An AT&T Music-on-Hold system enhancement that promotes the customer's products or services. |
| Mbps | Megabits per second. |
| Megacom | AT&T's tariffed digital WATS offering for outward calling. |
| Megacom 800 | AT&T's tariffed digital 800 service for inward calling. |
| MERLIN Attendant | An application with equipment that connects to one or more tip/ring station ports and automatically answers incoming calls with a recorded announcement. In response to touch-tone digits dialed by the caller, MERLIN Attendant directs the caller to a department, an extension, or the system operator. |
| MERLIN Mail Voice Messaging System | An application that provides Automated Attendant, call answering, and voice-mail services on the communications system. |
| Message Drop | The AUDIX Voice Power answering service that plays a message to a caller and then allows the caller to leave a message, such as a request for service or an order. |
| MFM | (Multi-Function Module) An adapter that has a tip/ring mode for answering machines, modems, fax machines, and tip/ring alerts, and an SAA mode for -48 VDC alerts. The MFM is installed inside an MLX telephone, and is used to connect optional equipment to the telephone. The optional equipment and the telephone operate simultaneously and independently. |

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| MLX-10 or MLX-10D telephone | A 10-button digital telephone offered with (MLX-10D) or without (MLX-10) a 2-line by 24-character display. |
| MLX-20L telephone | A 20-button digital telephone with a 7-line by 24-character display. |
| MLX-28D telephone | A 28-button digital telephone with a 2-line by 24-character display. |
| mode codes | Streams of touch-tone codes used by voice messaging applications to communicate with the communications system's control unit. |
| modem | A device that converts digital data signals to analog signals for transmission over a telephone line, and analog signals received on a telephone line to digital signals. |
| modem pool | A pair, or group of pairs, of modems and data modules with interconnected RS-232 interfaces that converts digital signals to analog, or analog signals to digital, thereby allowing users with ISDN digital data stations to communicate with users who have analog data stations. |
| module | A circuit pack in the control unit that provides the physical ports for connection of telephones and/or outside trunks to the communications system. |
| Multi-Function Module | See MFM. |
| multiplexing | The division of a transmission channel into two or more independent channels, either by splitting the frequency band into a number of narrower bands or by dividing the channel into successive time slots. |
| Music-on-Hold | A customer-provided music source or Magic On Hold connected to the communications system via a loop-start jack. |
| network | A configuration of communications devices and software connected for information interchange. |
| network interface | Hardware, software, or both that links two systems in an interconnected group of systems, for example, between the local telephone company and a PBX. |
| off-hook | A telephone is said to be off-hook when the user has lifted the handset, pressed the Speaker button to turn on the speakerphone, or used a headset to connect to the communications system or the telephone network. |
| off-premises telephone | See OPT. |

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| ones density | The requirement for channelized DS1 service to the public network that eight consecutive zeroes cannot occur in a digital data stream. |
| on-hook | A telephone is said to be on-hook when the handset is hung up, the speakerphone is turned off, and the user is not using a headset to connect to the communications system or the telephone network. |
| OPT | (off-premises telephone) A single-line telephone or other tip/ring device connected to the communications system via an 008 OPT module in the control unit. The device appears as an inside extension to the system, but may be physically located away from the system. |
| outcalling | A feature of the AUDIX Voice Power and MERLIN Mail applications. When outcalling is activated, the subscriber is called automatically by the system at a programmed number when a new message is received in his or her mailbox. |
| out-of-band signaling | Signaling that uses the same path as voice-frequency transmission and in which the signaling is outside the band used for voice frequencies. |
| parity | The addition of a bit to a bit string so that the total number of 1's is odd or even. Parity can be used to detect and correct transmission errors. |
| pass-through | A connection from an internal modem to a programming port on the communications system. |
| PBX | (Private branch exchange) A local electronic telephone switch that serves local stations (for example, extensions within a business) and provides those stations with access to the public network. |
| PC | Personal computer. |
| Personal Line | A central office trunk that terminates directly on one or more telephones. In Hybrid/PBX mode, a Personal Line cannot be part of a trunk pool. Also called <i>DFT</i> . |
| PFT | (Power Failure Transfer) A feature that provides continuity of telephone service during a commercial power failure by switching some of the system's trunk connections to telephones connected to specially designated station jacks. |
| pool | In Hybrid/PBX mode, a grouping of outside trunks that users can access with a Pool button or by dialing an access code on an SA button. Pools are also used by the ARS feature to choose the least expensive route for a call. |

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| port | See jack |
| Power Failure Transfer | See PFT. |
| power supply module | A device that directs electricity to modules and telephones on the communications system. One power supply module is needed for each carrier, and an auxiliary power unit is added if the module exceeds capacity. |
| PRI | (Primary Rate Interface) A standard interface that specifies the protocol used between two or more communications systems. PRI, as used in North America, provides twenty-three 64-kbps B-channels for voice and/or data and one 16-kbps D-channel, which carries multiplexed signaling information for the other 23 channels. |
| Primary Rate Interface | See PRI. |
| Primary system operator position | The first jack on the first MLX or analog multiline station module in the control unit, that is, the extension jack with the lowest logical ID in the system. |
| prime line | An individual extension number assigned to a telephone in a system operating in Behind Switch mode. Each telephone user has his or her own prime line and is automatically connected to that line when he or she lifts the handset. |
| processor module | The module in the second slot of the control unit (Slot 0, to the right of the power supply). The processor module includes the software, memory, and intelligence that runs the communications system. |
| protocol | A set of conventions governing the format and timing of message exchanges between devices, such as an MLX telephone and the communications system control unit. |
| public network | A network that is commonly accessible for local or long-distance calling. Also called <i>public switched telephone network (PSTN)</i> . |
| QCC | (Queued Call Console) An MLX-20L telephone used by a system operator in Hybrid/PBX mode only. The QCC is used to answer outside calls (directed to a system operator position) and inside calls, extend inside and outside calls to an extension or an outside telephone number, serve as a message center, make outside calls for users with outward calling restrictions, set up conference calls, and monitor system operation. |
| Queued Call Console | See QCC. |

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| RAM | (Random-access memory) Computer memory in which an individual byte or range of bytes can be addressed and read or changed without affecting other parts of the memory. |
| random-access memory | See RAM. |
| read-only memory | See ROM. |
| riser cable | Cable that runs between floors in a multistory building and connects wiring closets. |
| robbed-bit signaling | Signaling in which the least significant bit (LSB) of every sixth frame per channel is used for signaling in that channel. |
| ROM | (Read-only memory) Computer memory that can be read but cannot be changed. |
| RS-232 | A physical interface, specified by the Electronics Industries Association (EIA), that transmits and receives asynchronous data at speeds of up to 19.2 kbps over cable distances of 50 feet (15 m). |
| SAA | (Supplemental Alert Adapter) A device that permits -48 VDC alerting equipment to be connected to an analog multiline telephone jack so that people working in noisy or remote areas of a building can be alerted to incoming calls. |
| SDN | (Software Defined Network) An AT&T private networking service created by specialized software within the public network. |
| SID | Station ID. |
| signaling | The sending of control and status information between devices to set up, maintain, or take down a connection, such as a telephone call. |
| single-line telephone | An industry-standard touch-tone or rotary-dial telephone that handles only one call at a time and is connected to the communications system via a jack on a basic 012 telephone module or 008 OPT module. |
| SMDR | (Station Message Detail Recording) A feature that captures detailed usage information on incoming and outgoing voice and data calls. |
| SMDR printer | A printer used to produce SMDR reports that is connected to the communications system via an RS-232 jack on the processor module. |
| Software Defined Network | See SDN. |

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| special character | A Pause, Stop, or End-of-Dialing signal in a programmed dialing sequence such as an Auto Dial or Personal Speed Dial number. |
| SPM | (System Programming and Maintenance) A DOS-or UNIX system-based application for programming and maintaining the communications system. |
| square key | A communications system configuration in Key mode operation in which all outside lines appear on all telephones. |
| SSN | (Switched service network) A network consisting of terminals, transmission lines, and at least one exchange on which a user can communicate with any other user at any time. |
| station | An endpoint on the internal side of the communications system. A station can be a telephone with or without an adjunct or can be a data terminal with a modem (analog) or a 7500B Data Module (digital) attached. |
| station jack | An analog, digital, or tip/ring physical interface on a module in the control unit for connecting a telephone or other device to the communications system. |
| Station Message Detail Recording | See SMDR. |
| Supplemental Alert Adapter | See SAA. |
| switched service net work | See SSN. |
| switch hook flash | A momentary (320 ms to 1 second) on-hook signal used as a control signal, which may be directed either to the control unit or to a host switch outside the communications system. Also called <i>Recall</i> or <i>timed flash</i> . |
| synchronous data transmission | A method of transmitting a continuous digital data stream in which the transmission of each binary bit is synchronized with a master clock. <i>See also</i> asynchronous data transmission. |
| system acceptance test | A test of all trunks, telephones, data terminals, and features after installation to ensure that they are working correctly. |
| system date and time | The date and time that appear on MLX display telephones and SMDR reports. |

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| System Programming and Maintenance | See SPM. |
| System Renumbering | A feature (process) used to change the extension numbers assigned to telephones, adjuncts, Calling Groups, Paging Groups, Call Park Zones, Remote Access, and lines/trunks. |
| T1 | A type of digital transmission facility that in North America transmits at the DS1 rate of 1.544 Mbps. |
| telephone power supply unit | Equipment that provides power to an individual telephone. |
| tie trunk | A private line directly connecting two telephone switches. |
| timed flash | See switchhook flash. |
| timer | A built-in timing device in a display telephone. |
| tip/ring | The contacts and associated conductors of a single-line telephone plug or jack. |
| touch-tone gate | An operation used to determine whether a call is from a touch-tone or rotary-dial telephone. |
| touch-tone receiver | See TTR. |
| T/R | See tip/ring. |
| translation | The communications system programming information that identifies a particular user with a particular telephone. |
| trunk jack | A physical interface on a module in the control unit for connecting an outside trunk to the communications system. |
| TTR | (Touch-tone receiver) A device used to decode DTMF touch-tones dialed from single-line telephones or Remote Access telephones. |
| uninterruptible power supply | See UPS. |
| unit load | A measure of the power load drain of a module, telephone, or adjunct. |
| UPS | (Uninterruptible power supply) A device that connects to the communications system to provide 117 VAC to the equipment when the commercial power source fails. |
| VAC | Alternating-current voltage. |

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| VDC | Direct-current voltage. |
| VMI | (Voice messaging interface) An enhanced tip/ring port. |
| voice-band channel | A transmission channel, generally in the 300-3400-Hz frequency band. |
| Voice Mail | The AUDIX Voice Power service that allows users to send messages to other extensions in the system, forward messages received with comments, and reply to messages. |
| voice messaging interface | See VMI. |
| voice-only station | A station that is set up for making and receiving voice calls but not data calls. |
| voice signal pair | A pair of leads on an analog multiline telephone used for the Voice Announce to Busy feature. |
| WATS | (Wide Area Telecommunications Service) A service that allows calls to certain areas for a flat-rate charge based on expected usage. |
| wink-start tie trunk | A tie trunk on which the originating end transmits an off-hook signal and waits for the remote end to send back a signal (a wink) that it is ready for transmission. |

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