**Lucent Technologies**
Bell Labs Innovations

# MERLIN MAGIX™ Integrated System Release 1.0i

## System Programming

# Copyright and Legal Notices

**Notice**

Every effort has been made to ensure that the information in this guide is complete and accurate at the time of printing. Information, however, is subject to change. See Appendix A, "Customer Support Information," in *Feature Reference* for important information.

**Your Responsibility for Your System's Security**

Toll fraud is the unauthorized use of your telecommunications system by an unauthorized party—for example, persons other than your company's employees, agents, subcontractors, or persons working on your company's behalf. Note that there may be a risk of toll fraud associated with your telecommunications system, and, if toll fraud occurs, it can result in substantial additional charges for your telecommunications services.

You and your System Manager are responsible for the security of your system, such as programming and configuring your equipment to prevent unauthorized use. The System Manager is also responsible for reading all installation, instruction, and system administration documents provided with this product in order to fully understand the features that can introduce risk of toll fraud and the steps that can be taken to reduce that risk. Lucent Technologies does not warrant that this product is immune from or will prevent unauthorized use of common-carrier telecommunication services or facilities accessed through or connected to it. Lucent Technologies will not be responsible for any charges that result from such unauthorized use. For important information regarding your system and toll fraud, see Appendix A, "Customer Support Information," in *System Programming*.

**Federal Communications Commission Statement**

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 their own expense. For further FCC information, see Appendix A, "Customer Support Information," in *Feature Reference*.

**Year 2000 Compliance**

The MERLIN MAGIX Integrated System is certified to be Year 2000 compliant. Additional information on this certification, and other issues regarding Year 2000 compliance, is available online at http://www.lucent.com/enterprise/sig/yr2000.

**Trademarks**

5ESS, AUDIX, CONVERSANT, CentreVu, DEFINITY, Magic On Hold, MERLIN, MERLIN LEGEND, MERLIN Mail, PARTNER, PassageWay, MLX-10, MLX-20L, MLX-28D, MLS-6, MLS-12, MLS-12D, MLS-18D, MLS-34D, SYSTIMAX, TransTalk, and Voice Power are registered trademarks and 4ESS, Intuity, Lucent Technologies, MERLIN MAGIX, and ProLogix are trademarks of Lucent Technologies in the U.S. and other countries.

Acculink, ACCUNET, MEGACOM, MultiQuest, MLX-5, MLX-5D, MLX-16DP, MLX-10D, MLX-10DP, and NetPROTECT are registered trademarks of AT&T.

Microsoft, Windows, Windows NT, and MS-DOS are registered trademarks of Microsoft Corporation.

ProComm and ProComm Plus are registered trademarks of DataStorm Technologies, Inc.

Supra, Supra NC, StarSet, and Mirage are registered trademarks of Plantronics, Inc.

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

PagePac is a registered trademark and Powermate and Zonemate are trademarks of DRACON, a division of Harris Corporation.

Okidata is a registered trademark of Okidata Corporation.

Pipeline is a trademark of Ascend Communications, Inc.

Intel and Pentium are registered trademarks of Intel Corporation.

Apple and Macintosh are registered trademarks of Apple Computer, Inc.

IBM is a registered trademark of International Business Machines, Inc.

Novell and NetWare are registered trademarks of Novell Corporation.

CLASS is a servicemark of Bellcore.

## Copyright and Legal Notices

**Support Telephone Number**

If you need assistance when installing, programming, or using your system contact your support organization or your Lucent Technologies authorized dealer.

**Lucent Technologies Corporate Security**

Whether or not immediate support is required, all toll fraud incidents involving Lucent Technologies products or services *should be reported*. Contact your support organization or your Lucent Technologies authorized dealer to report toll fraud incidents or for instructions on obtaining consultation on security issues, investigation support, referral to law enforcement agencies, and educational programs.

**Lucent Technologies Fraud Intervention**

If you *suspect you are being victimized* by toll fraud and you need technical support or assistance, contact your support organization or your Lucent Technologies authorized dealer.

**Warranty**

Lucent Technologies provides a limited warranty on this product. Refer to "Limited Warranty and Limitation of Liability" in Appendix A, "Customer Support Information," of *Feature Reference*.

# System Programming
## Master Table of Contents

### Customer Support Information

### About This Book

### 1  Programming Basics

## 2 Programming with WinSPM

## 3    Programming Procedures

# System Programming
## Master List of Figures

# System Programming
**Master List of Tables**

# IMPORTANT SAFETY INSTRUCTIONS

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.

To reduce the risk of fire, electrical shock, and injury to persons, follow these basic safety precautions when installing telephone equipment:

■ 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 Lucent Technologies-manufactured MERLIN MAGIX Integrated System circuit modules, carrier assemblies, and power units in the MERLIN MAGIX Integrated System control unit.

■ Use only Lucent Technologies-recommended/approved MERLIN MAGIX Integrated System accessories.

■ If equipment connected to the TDL telephone modules (412 LS-ID-TDL and 024 TDL), the MLX telephone modules (008 MLX, 408 GS/LS-MLX, 408 GS/LS-ID-MLX, and 016 MLX), or the ETR telephone module (016 ETR) 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 MAGIX Integrated System is equipped with a 3-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 MAGIX Integrated 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).

- Do not operate telephones if chemical gas leakage is suspected in the area. Use telephones located in some other safe area to report the trouble.

## ⚠ WARNING:

- 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.

- ONLY an authorized technician or dealer representative shall install, set options, or repair an MFM.

# SAVE THESE INSTRUCTIONS

# Customer Support Information

## Support Telephone Numbers

If you need assistance installing, programming, or using your system, contact your support organization or your Lucent Technologies authorized 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.

## Security

As a customer of new telecommunications equipment, you should be aware of the significant and growing problem of theft of long distance services by third parties, known commonly as "toll fraud." It is particularly important that you understand and take appropriate steps to deal with this crime because, under applicable tariffs, you will be responsible for payment of associated toll charges. Lucent Technologies can not be responsible for such charges and will not make any allowance or give any credit resulting from toll fraud.

Toll fraud can occur despite the preventive efforts of network providers and equipment manufacturers. Toll fraud is a potential risk for every customer with telecommunications equipment having one or more of the following features: (1) Remote Access, (2) Automated Attendant, (3) voice mail, (4) remote administration and maintenance, and (5) call forwarding (remote). This is not a product or design defect, but a risk associated with equipment having one or more of the features described above. If your new telecommunications equipment possesses any of these features, please consult the relative portion of your documentation for further details and specific procedures to reduce the risk of toll fraud or contact your Lucent Technologies representative for further details. The Remote Access feature must be properly administered to help reduce the risk of unauthorized use. It is your responsibility to take the appropriate steps to implement the feature

properly, evaluate and administer the various restriction levels, and protect and carefully distribute access codes.

To reduce the risk of unauthorized access to your MERLIN MAGIX Integrated System, you should observe the following procedures:

■ Use a nonpublished Remote Access telephone number.

■ Assign passwords, barrier, or access codes randomly to users on a need-to-know basis, keeping a log of ALL authorized users and assigning one code to each person.

■ Ensure that Remote Access users are aware of their responsibility to keep the telephone number and any access codes secure.

■ Use random sequence access codes. These are less easily broken.

■ Deactivate all unassigned access codes promptly.

■ When possible, restrict the off-network capability of callers via use of Call Restrictions and Disallowed Lists.

■ When possible, block off-hours calling.

■ Frequently monitor system call detail reports for quicker detection of any unauthorized or abnormal calling patterns.

## Physical Security, Social Engineering, and General Security Measures

Criminals called hackers may attempt to gain unauthorized access to your communications system and voice messaging system in order to use the system features. Hackers often attempt to trick employees into providing them with access to a network facility (line/trunk) or a network operator. This is referred to as social engineering. Hackers may pose as telephone company employees and employees of Lucent Technologies or your authorized dealer. Hackers will go through a company's trash to find directories, dialing instructions, and other information that will enable them to break into the system. The more knowledgeable they appear to be about the employee names, departments, telephone numbers, and the internal procedures of your company, the more likely it is that they will be able to trick an employee into helping them.

**Preventive Measures**. Take the following preventive measures to limit the risk of unauthorized access by hackers:

■ Provide good physical security for the room containing the communications equipment and the room with administrative tools, records, and System Manager information. These areas should be locked when not attended.

■ Provide a secure trash disposal for all sensitive information, including telephone directories, call accounting records, or anything that may supply information about your communications system. This trash should be shredded.

■ Educate employees that hackers may try to trick them into providing them with dial tone or dialing a number for them. All reports of trouble, requests for moving extensions, or any other administrative details associated with the MERLIN MAGIX Integrated System should be

handled by one person (the System Manager) or within a specified department. Anyone claiming to be a telephone company representative should be referred to this person or department.

■ No one outside of Lucent Technologies needs to use the MERLIN MAGIX Integrated System to test facilities (lines/trunks). If a caller identifies themselves as a Lucent Technologies employee, the System Manager should ask for a telephone number where the caller can be reached. The System Manager should be able to recognize the number as a Lucent Technologies telephone number. Before connecting the caller to the administrative port of the MERLIN MAGIX Integrated System, the System Manager should feel comfortable that a good reason to do so exists. In any event, it is not advisable to give anyone access to network facilities or operators, or to dial a number at the request of the caller.

# Limited Warranty and Limitation of Liability

## Limited Warranty

LUCENT TECHNOLOGIES AND ITS AFFILIATES MAKE NO WARRANTIES, EXPRESS OR IMPLIED, ABOUT OR RELATING TO YOUR MERLIN MAGIX INTEGRATED SYSTEM AND SPECIFICALLY DISCLAIM ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

You should check with the reseller from whom you purchased your system to determine if it offers a limited warranty.

## Limitation Of Liability

EXCEPT FOR PERSONAL INJURY, DIRECT DAMAGES TO TANGIBLE PERSONAL PROPERTY PROXIMATELY CAUSED BY LUCENT TECHNOLOGIES, AND LIABILITY OTHERWISE EXPRESSLY ASSUMED IN A WRITTEN AGREEMENT SIGNED BY AN AUTHORIZED REPRESENTATIVE OF AT&T, THE LIABILITY OF LUCENT TECHNOLOGIES, 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 LUCENT TECHNOLOGIES OR ITS AFFILIATES, SUPPLIERS OR AUTHORIZED RESELLERS BE LIABLE FOR INCIDENTAL, RELIANCE, CONSEQUENTIAL, OR ANY OTHER INDIRECT LOSS OR DAMAGE (INCLUDING, BUT NOT LIMITED TO, LOST PROFITS OR REVENUES AND LOSSES ARISING OUT OF UNAUTHORIZED USE (OR CHARGES FOR SUCH USE) OF COMMON CARRIER TELECOMMUNICATIONS SERVICES OR FACILITIES ACCESSED THROUGH OR CONNECTED TO THE MERLIN MAGIX INTEGRATED SYSTEM) INCURRED IN CONNECTION WITH YOUR SYSTEM. THIS LIMITATION OF LIABILITY SHALL SURVIVE FAILURE OF AN EXCLUSIVE REMEDY.

# About This Book

The power and versatility of the MERLIN MAGIX™ Integrated System is due in part to its many options and features. These options and features have been recorded on system planning forms and initially programmed at the time of installation. Changes in use patterns, the addition of new equipment, or a change in operating mode may necessitate additional system programming.

This book provides information about programming the features and auxiliary equipment on the MERLIN MAGIX system.

## Ordering Information

If you wish to order copies of manuals, replacement parts, accessories, or other equipment that is compatible with the system, contact your Lucent Technologies representative.

## Product Safety Labels

Throughout this book, hazardous situations are indicated by an exclamation point inside a triangle, along with the word "caution" or "warning."

⚠ **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 will or can cause minor personal injury, property damage, or loss of data if the hazard is not avoided.*

# Programming Basics

# 1

## Contents

# Programming Basics

# 1

This chapter presents the information you need to master before you begin the programming procedures covered in Chapter 3, "Programming Procedures." It covers the following subjects:

■ An introduction to system programming basics

■ How to use the system programming console

■ How the programming screens and keys work

■ How to interpret and use the programming procedures

■ How to enter and exit system programming

■ Which system components require idle states for programming

## Introduction to System Programming

The MERLIN MAGIX™ Integrated System offers easy-to-use, menu-driven software for system programming. After your system is installed, use this software to accommodate your company's changing needs for such enhancements and modifications as upgraded lines, additional modules, and new extension programming.

### Planning Forms

Before you begin to program or modify your system, you should familiarize yourself with the system planning forms. Initially, system planning forms are used to plan your system and program your system during installation. After installation, they remain a source for all programming information on your system database. The information ranges from the system time and date to specific equipment configurations and feature programming.

Each planning form is either required or optional:

■ Required forms are necessary to program the system.

■ Optional forms are needed only if the System Manager included the features or options shown on the forms.

Before you begin to program or modify your system, review the Control Unit Diagram on system planning Form 1 to identify the module types installed in the system's control unit. Use this information to program or modify lines and trunks and assign or reassign lines to extensions.

Check the physical control unit to verify that the modules are placed in the slots identified on the diagram. Correct the diagram on Form 1 if there are any discrepancies.

Before you make any changes to your system, be sure to do the following:

■  Mark any system modifications or changes on the appropriate planning form. Keep your planning forms up-to-date.

■  Check the *Feature Reference* for possible feature interactions.

■  Program the system or the system component during the appropriate idle state. See "Idle States" on page 1-20.

## Types of Programming

The three types of programming available for the system are:

■  **System Programming**. This type of programming enables the System Manager to program features that affect all or most system users, and requires one of the following:

—  A system programming console which is a 4424LD+ or MLX-20L telephone connected to one of the first five jacks of the first TDL or MLX module in the control unit.

—  A PC with Windows System Programming and Maintenance (WinSPM) software. WinSPM provides two interfaces for system programming—Quick Access and Standard SPM Mode. Quick Access provides a graphical user interface (GUI) for those tasks most commonly performed by the System Manager (for example, add or delete members of groups, perform system inventories, create reports, program multiple systems, make station labels appear on display telephones, and more). Pictorial representations of system components, such as modules and their vintages, and the creation of 4400-Series or MLX telephone button labels, are available with WinSPM.

The Standard SPM Mode interface provides an emulation display of the system programming console. It allows basic SPM programming of the MERLIN MAGIX system and supports SPM programming for options not included in the GUI.

The PC should be connected to the lower port (labeled ADMIN) on the processor module. A PC with a modem can perform system programming remotely through the public network, or by connecting to a tip/ring extension jack (016 (T/R) or 008 OPT module) on the system. A built-in modem in the processor allows the PC and the system to communicate.

■  **Extension Programming**. This type of programming enables individual extension users and system operators (except for Queued Call Console operators) to change their extension features to meet individual needs. For details about extension programming, see the appropriate user and operator guides.

■  **Centralized Telephone Programming**. This type of programming enables the System Manager to program any feature that can be programmed by individual extension users or system operators. Some features can be programmed only in centralized telephone programming. Centralized telephone programming can be done on the programming console or on a PC with the WinSPM software.

# System Programming Console

The system programming console is a 4424LD+ or MLX-20L telephone connected to the system programming jack. When you begin system programming on a new system for the first time, the console must be connected to the first jack on the first 024 TDL module if you are using a 4424LD+ Telephone, or to the first jack on the first 008 MLX module or 016 MLX module if you are using an MLX-20L telephone. The first jack on the first TDL or MLX module is factory-set as the system programming jack and as an operator position. When you program for the first time, you can change the system programming jack to any one of the first five jacks on the first 024 TDL module, or on the first 008 MLX module or 016 MLX module. This allows you to program without interfering with the operator's call handling.

You can also have one or two Direct Station Selectors (DSSs) connected to the system programming console. Each DSS adds 50 extension buttons to the console, which facilitates assigning features to extensions. The DSS for the 4424LD+ console is the DSS 4450.

A 4424LD+ Telephone is shown in Figure 1-1. An MLX-20L telephone is shown in Figure 1-2.
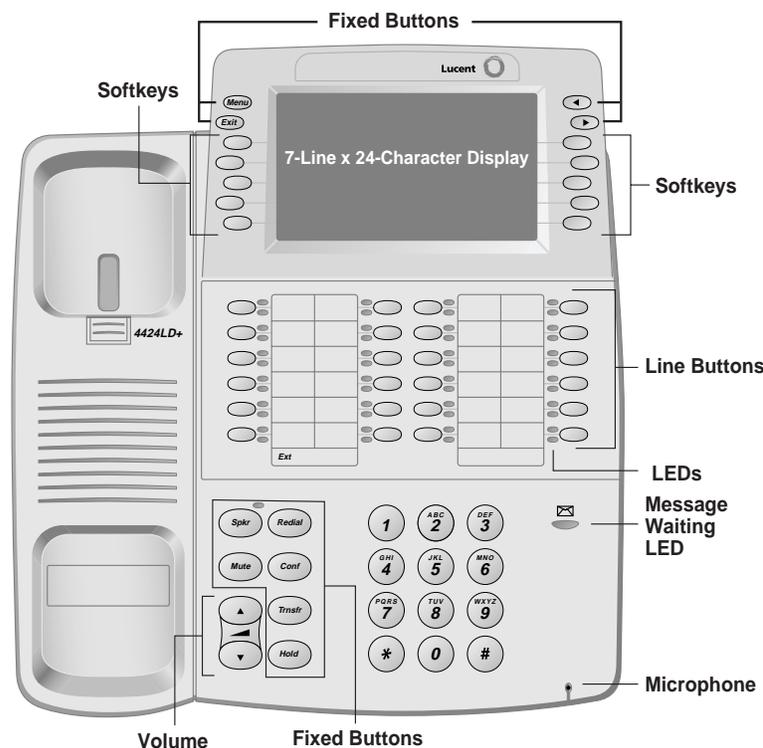


**Figure 1-1. 4424LD+ Telephone**
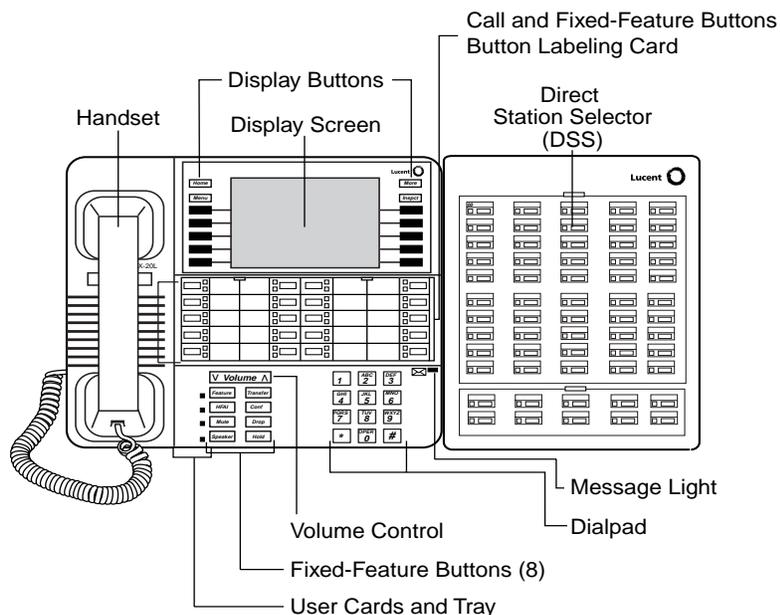
**Figure 1-2. MLX-20L Telephone**

## Console Components

Table 1-1 describes the components that make up the 4424LD+ or MLX-20L Console. Refer to Figure 1-1 and Figure 1-2 for the location of the components. Table 1-2 describes the components that make up the DSS.

**Table 1-1.   4424LD+ and MLX-20L Console Components**

| Component | Function |
|-----------|----------|
| Desk Stand (not shown) | An adjustable stand on the console and the DSS allows a 20- or 30-degree viewing angle (optional on the 4424LD+ Telephone). |
| Button Labeling Cards | Cards labeled with the number or feature assigned to each line button. |
| Contrast Control (not shown) | A sliding control at the top of the console, used to brighten or dim the display screen. |

**Table 1-1. 4424LD+ and MLX-20L Console Components**—*Continued*

| Component | Function |
|---|---|
| Fixed Feature Buttons | 4424LD+ Telephone fixed display buttons for most-used features: |
| | Spkr (Speaker) for turning the speakerphone on and off. |
| | Mute for turning the speakerphone's microphone and, if applicable, the headset's microphone on and off. |
| | Trnsfr (Transfer) for sending a call to another telephone. |
| | Conf for adding a line or extension to a conference call. |
| | Redial for redialing the last number dialed from the telephone. |
| | Hold for putting a call on hold. |
| | MLX-20L telephone fixed display buttons for most-used features: |
| | Feature for viewing the Feature screen and selecting features. |
| | HFAI (Hands-Free Answer on Intercom) for answering voice-announced calls without the handset. |
| | Mute for turning the speakerphone's microphone on and off. |
| | Speaker for talking on a call through the speakerphone without lifting the handset. |
| | Transfer for sending a call to another telephone. |
| | Conf for adding a line or extension to a conference call. |
| | Drop for disconnecting an extension or line from a conference call. |
| | Hold for putting a call on hold. |
| Dialpad | Number pad for dialing telephone numbers. |
| Direct Station Selector (DSS) (not shown) | A device that adds extension buttons and other buttons to the console. See Table 1-2. |
| Display Buttons | Four fixed display buttons and 10 unlabeled buttons used to view the different screens and select names, features, and options from the display screen. See ''Console Buttons'' on page 1-7. |
| Display Screen | Screen with a 7-line by 24-character display area that shows call information, features, prompts, date, and time. |
| Handset | The hand-held part of the console you pick up, talk into, and listen from. |
| LEDs | (Light-Emitting Diodes) The lights on the console that assist in checking feature status. |
| Line Buttons | Buttons to make and receive calls; unlabeled buttons are programmable for one-step feature use. The 4424LD+ has 24 line buttons, and the MLX-20L has 20 line buttons. |
| Message Light | A red light that signals a waiting message. |

**Table 1-1.   4424LD+ and MLX-20L Console Components—***Continued*

| Component | Function |
| --- | --- |
| User Cards and Tray (MLX-20 only) | A slide-out drawer with erasable cards for noting telephone numbers and feature codes. |
| Volume Control | A button for adjusting the volume of speaker, handset, headset, and ringer. |

**Table 1-2.   Direct Station Selector (DSS) Components**

| Component | Function |
| --- | --- |
| Covers | Removable plastic covers to protect the designation cards. The top cover protects the 50 DSS button labels. The lower cover fits over the fixed buttons. |
| DSS Designation Cards | Cards for labeling the extension or feature assigned to each button. |
| DSS Buttons | Fifty buttons used for one-touch dialing of co-workers' extensions to make or transfer calls. DSS buttons are also used to page co-workers over speakerphones, to park calls, and to handle outside calls. |
| Fixed Buttons | Ten additional buttons, including Message Status, Direct Voice Mail (MLX DSS only), and three Page buttons. The five remaining buttons on the first DSS are not used. If a second DSS is connected to the console, the 10 buttons at the bottom of the second DSS are not used. |
| | Fixed Message Status button used with fixed Page buttons to see which telephones have Message Lights on. |
| | Fixed Page Buttons are three buttons used to select the pages of extensions that the 50 DSS buttons represent. |
| LEDs (Light-Emitting Diodes) | The lights that assist in checking feature status. |

## Console Buttons

Use the 14 buttons located on either side of the 4424LD+ or MLX-20L console display area for system programming. These buttons are arranged in two columns of seven buttons, as shown in Figure 1-3 and Figure 1-4. On the 4424LD+ console, three of the four fixed display buttons have different labels than those on the MLX-20L console, although the same functionality is provided (see the following section, "Fixed Display Buttons").
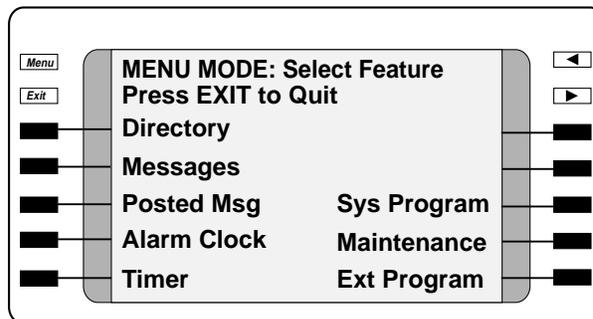


**Figure 1-3. 4424LD+ Display Buttons and Main Menu**
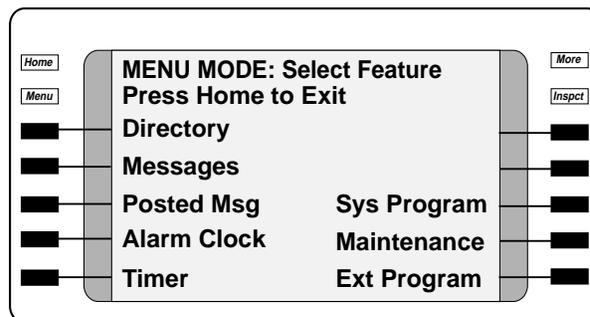


**Figure 1-4. MLX-20L Display Buttons and Main Menu**

### Fixed Display Buttons

The top two buttons in each column have the same labels and functions regardless of the screen display. This type of button is called a fixed display button. Table 1-3 describes the functions of the fixed display buttons for the 4424LD+ and MLX-20L consoles.

**Table 1-3. Fixed Display Buttons**

| MLX-20L Buttons | 4424LD+ Buttons | Function |
|---|---|---|
| Home | Exit | Return to normal call handling mode after you finish programming. |
| Menu | Menu | Display the Main menu shown in Figure 1-3. |
| More | ▶ | Display more items when a menu is continued on more than one screen, indicated by an angle bracket (>) on the upper right of the screen. |
| Inspct | | (Inspect) View a list of lines or extensions on which a feature is programmed or the settings for a feature. On the 4424LD+ console, an Inspect button must be programmed (programming code *778). |
| | ◀ | Return to the previous screen; indicated by an angle bracket (<) on the upper right of the screen. The MLX-20L does not have an equivalent button. |

## Unlabeled Display Buttons

Use the five unlabeled display buttons on each side of the screen to select commands, options, or items on the screen. The functions of these buttons vary, based on the option you select.

If you are using WinSPM for system programming, the simulated 4424LD+ or MLX-20L console screen on your PC screen shows the function keys that correspond to the console screen selections. For example, to save an entry, you select Enter on the console or click F10 in the emulation display on your PC. See Chapter 2, "Programming with WinSPM," for details about using function keys and additional information about WinSPM.

## Console Overlay

The programmable line buttons are on the main part of the console. There are 24 line buttons on the 4424 LD+; however, the four buttons on the top row are not used during system programming.

The MLX-20 console has 20 line buttons, but you can use the console overlay to program up to 28 line buttons on any extension through centralized telephone programming. Select Page 1 to access line buttons 1 through 20 and Page 2 to access line buttons 21 to 34. The top line of numbers next to each line button on the console overlay represents line buttons. See Figure 1-5 and Figure 1-6 that follow.

When labels or filenames are entered, the letters A through F are displayed on the console screen. Additional letters can be entered by using line buttons 1 through 20 to represent letters G through Z. These letters are also displayed on the top line of the console overlay.
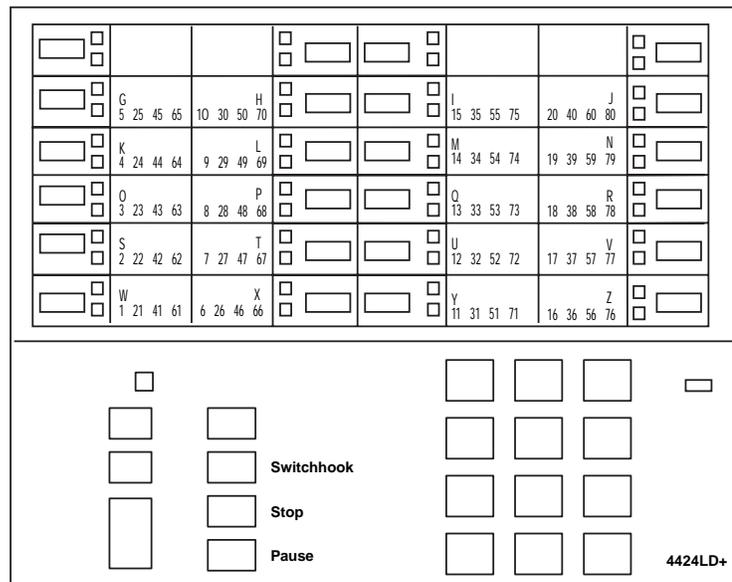
**Figure 1-5. 4424LD+ System Programming Console Overlay**
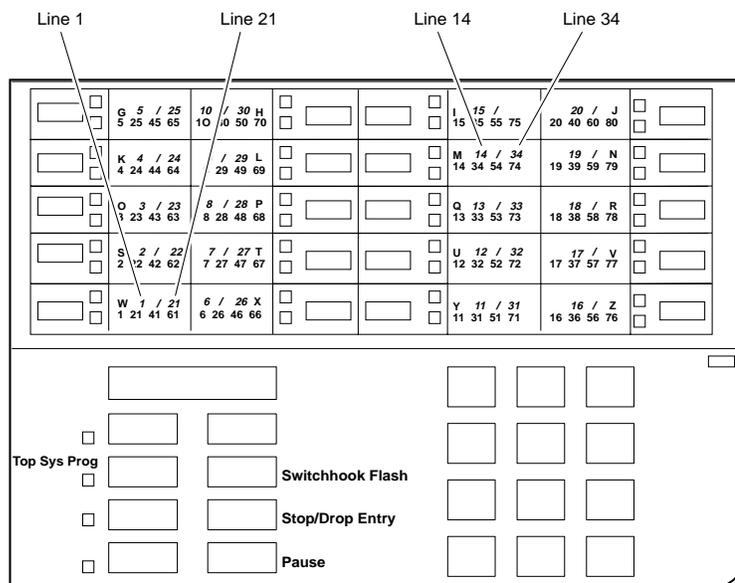


**Figure 1-6. MLX-20L System Programming Console Overlay**

The *Top Sys Prog* labeled function shown on the console overlay in Figure 1-6 does not appear on the 4424LD+ console overlay. The 4424LD+ does not provide a fixed HFAI (Hands Free Answer on Intercom) button for this feature; however, the HFAI feature can be programmed onto a line button on the 4424LD+ Telephone and then used for system programming.

When programming lines/trunks, you can select a block of 20 lines/trunks, as shown in Figure 1-7, and toggle the green or red LED associated with each line button on the console to program each line/trunk. The bottom line of numbers next to each line button on the console overlay represents the twenty lines/trunks associated with each line button (see Figure 1-6).

| OutTrunk Dial: |
| --- |
| Enter Trunks w/Touch Tone |
| Lines 01-20      Entry Mode |
| Lines 21-40 |
| Lines 41-60 |
| Lines 61-80 |
| Exit |

For a single-line, go to:
l Single-Line Procedure.

For a block of lines, go to:
u Block Procedure.
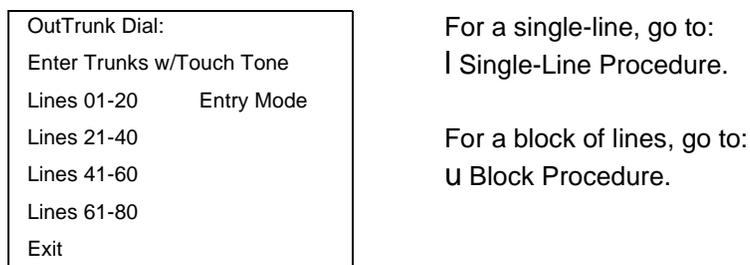
**Figure 1-7. Selecting a Block of Lines/Trunks**

## Console and DSS Lights

The red and green lights (LEDs) next to each of the 20 line buttons on the 4424LD+ and MLX-20L console, show the status of the line/trunk options. LEDs on the DSS show the status of features programmed on extensions.

### Console Lights

The green and red LEDs next to each button on the console display the status of the line/trunk option that is being programmed. For example, when you select Pools from the Lines Trunks menu, the red LED is off if the selected line is not in a pool or on if the line is in a pool.

### DSS Lights

The lights on the DSS (if one is attached to the console) show the status of features being programmed on the extensions. When you select a feature from a menu, the red LED next to the DSS button is on, off, or flashing, depending on whether the feature is already programmed on the corresponding extension. For example, when you select `Toll Restrict` from the Restrictions menu, the red LED next to the DSS button lights for each toll restricted extension.

# Programming Procedures

The programming procedures provide step-by-step instructions for programming the system. This section details how to make the best use of the programming procedures.

## Procedure Organization

The programming procedures in Chapter 3, "Programming Procedures," are organized into logical groups. The programming procedures associated with a specific aspect of the system are grouped together under one heading. For example, to assign network services for E1, you would go to the section titled "E1 Facilities" and then locate the network services procedure. For quick reference, see "Menu Hierarchy" in Appendix A.

## Procedure Contents

Each procedure begins with a general description of the feature, followed by a summary of programming information that includes the items listed below:

| | |
|---|---|
| Programmable by | Indicates who has permission to use the procedure. |
| Mode | Specifies which system mode supports the procedure: Key or Hybrid/PBX or a combination. |
| Idle condition | Specifies the idle state required before the procedure can be performed. |
| Planning form | Indicates the planning forms that provide information for the procedure. |
| Factory setting | Shows the factory settings, if any, for equipment or features affected by the procedure. |
| Valid entries | Specifies the characters, numbers, or values accepted during data entry. |
| Inspect | Specifies whether or not the feature status can be verified using the Inspect feature. |
| Copy option | Indicates whether or not the feature can be copied to another system component once it has been programmed. |
| Console Procedure | Provides a summary of the procedure steps using the system console. |
| PC Procedure | Provides a summary of the procedure steps using WinSPM. |

## Programming Screens

There are three types of system programming screens:

■ **Information Screens**. To view what is currently programmed on the system.

■ **Menu selection screens**. To select options from a menu.

■ **Data entry screens**. To enter values or to identify a specific extension or line/trunk you want to program.

Figure 1-8 shows a sample information screen. When you select Sys Program from the Main menu screen (shown in Figure 1-3 on page 1-7), the screen shown in Figure 1-8 appears with system setup information.

```
System Set-up
Review and Exit
Size: xxxx
Type: xxxx
Operator: xxxx xxxx xxxx xxxx
  xxxx xxxx
Back
```

Your system information appears in place of the x's.

**Figure 1-8. Information Screen**

You cannot make changes on an information screen. Select Back (or click F5 in the PC emulation display) to continue to the next screen in the procedure.

Figure 1-9 shows a sample menu selection screen.

```
System Programming:  >
Make a Selection
System          Extensions
SysRenumber     Options
Operator        Tables
LinesTrunks     AuxEquip
Back            NightSrvce
```

Screen title and More indicator (>)
Prompt
Options List

**Figure 1-9. Menu Selection Screen**

A menu selection screen prompts you to select one of the available options. The screen title is the first line on all screens. The second line contains a system prompt or instruction. The remaining lines of text vary, based on the selected option.

An angle bracket (>) appears in the upper right corner of menu selection screens that have additional option screens. Press ▶ or More (or click [PgUp] in the PC emulation display) to see the additional screens; continue to press or click these buttons to move through the screens and return to the original screen. Figure 1-10 shows a sample data entry screen.

```
┌──────────────────────────────┐
│ Assign Lines/Trunks:         │       Selected Option
│ Enter extension              │       Prompt
│                              │        Data Entry Area
│                              │
│                              │
│                              │
│ Backspace                    │
│ Back          Enter          │
└──────────────────────────────┘
```
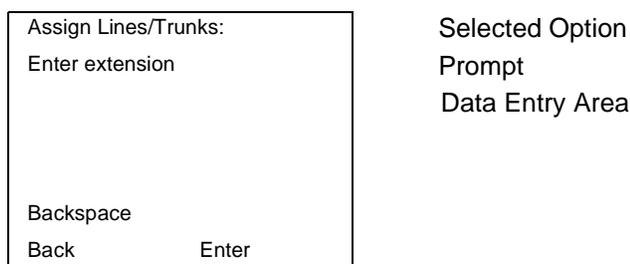
**Figure 1-10. Data Entry Screen**

A data entry screen prompts you to enter specific data or to make specific choices. Data to be entered are displayed with n's in the text. When n's appear on the data entry screen, they indicate data currently programmed for the feature. An exception is the slot/port number, which is displayed as sspp to distinguish the 2-digit slot number from the 2-digit port number. Slot is the slot number in the carrier and port is the port number on the module.

NOTE▶ The slot/port numbering for adjunct ports on MLX modules begins at 21. The slot/port numbering for adjunct ports on TDL modules begins at 25. For example, on an MLX module in slot 1 of the carrier, to access adjunct port 710, you would enter 0121 as the slot/port number (01 indicates slot 1 on the carrier), while, on a TDL module in slot 1 of the carrier, to access adjunct port 710, you would enter 0125.

Many screens show data entered on a previous screen, such as an extension or trunk number. Within the programming procedures, this type of variable information is shown with x's.

When information to be entered varies in the number of digits required (for example, a telephone number that can range from 7 to 20 digits), the data may be displayed as an uppercase X or N.

Data entry screens may also contain menu selections. Instead of entering data from the dialpad, you select options on the screen, such as Yes or No, to enable or disable a feature. To select this type of option, press either the unlabeled display button next to the option name, or the function key that corresponds to the option name. Then your selection is highlighted. To program or save the highlighted selection, press the unlabeled display button next to Enter (or click [F10] in the PC emulation display).

## Verifying Data Entry

You can use the Inspect feature to view the entries you save.

The Inspect button is fixed on an MLX-20L. To use the Inspect feature on a 4424LD+ Telephone, you must program a line button with the Inspect feature (refer to the *Feature Reference* for programming the Inspect button).

An example of how to use the Inspect feature begins with Figure 1-11. The figure shows a data entry screen with the adjunct extension number of an MLX port.

```
2B Data\Video: >                      Selected Option
Enter adjunct extension                Prompt
number of an MLX port


7108                                   Extension Entered
                Delete
Backspace
Back            Enter
```
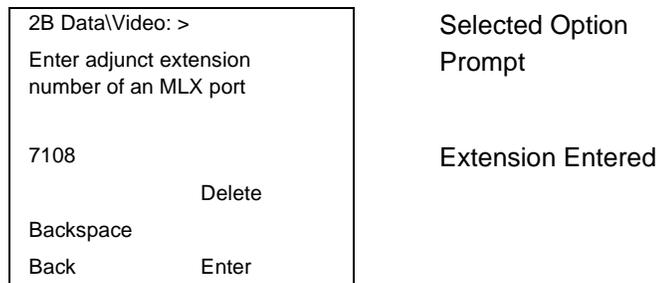
**Figure 1-11. Inspect Example**

After you enter and save `7108`, you can enter and save another extension; the extensions you enter appear one at a time on the screen as you enter and save them. However, if you press the Inspect button (`PgDn` in the PC emulation display), all extension numbers that you have programmed in this data entry screen appear. For example, if you entered 7108, 7109, and 7110, when you press the Inspect button, all the extension numbers appear as shown in the sample Inspect screen in Figure 1-12.

```
2B Data\Video:   >
7108  7109  7110                       Inspect Data Displayed




Back
```
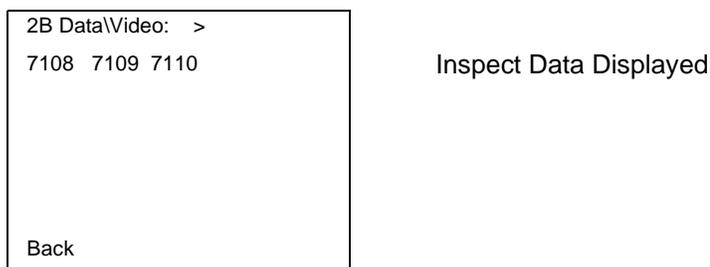
**Figure 1-12. Sample Inspect Screen**

Whenever you want to return to the previous screen, select `Back` (`F5` in the PC emulation display).

The Inspect feature also allows you to check a value that has already been programmed for a feature. This is helpful when you are changing or modifying features. You can also use it when you program sequential extensions or lines to verify the last number programmed. See the *Feature Reference* for details about the Inspect feature.

## Saving Entries and Moving among Screens

At the bottom of each screen, one or more screen keys may appear representing functions that allow you to change your entry, save your entry, or return to a previous screen. Various combinations of these screen keys appear on each programming screen. Figure 1-13 shows the QCC Priority screen with a typical display of screen keys.

| QCC Priority x: | | |
|---|---|---|
| Enter line/trunk number | | |
| xxx | | |
| | Delete | F8 |
| Backspace | Next | F9 |
| Back | Enter | F10 |

F4 — Backspace / Back
F5

x = QCC Priority entered in earlier step

xxx = line/trunk number (801–880)
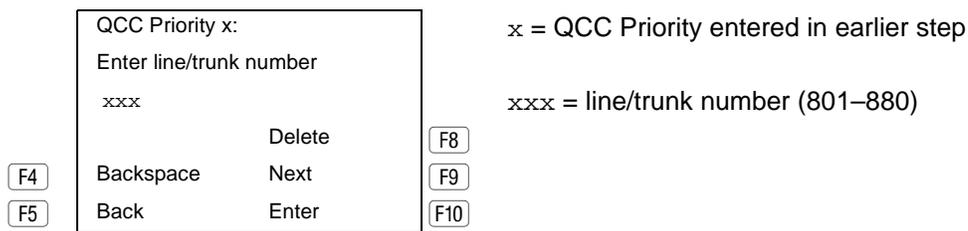
**Figure 1-13. Screen Keys**

The PC keys that correspond to the screen key selections are shown here for quick reference. These PC keys do not appear on the console display screen. Table 1-4 contains details on the use of the screen keys.

**Table 1-4. Screen Keys**

| Display | PC Key | Function |
|---|---|---|
| BackSpace | F4 or ← Bksp | **Change your entry**. Select Backspace (click F4 or ← Bksp in the PC emulation display) to correct your entry. Each time you select Backspace or click F4, the screen cursor moves backward to erase one character at a time. |
| Enter | F10 or Enter↵ | **Save your entry**. Typically, you select Enter (click F10 or Enter↵ in the PC emulation display) to complete a procedure and save the information. Occasionally, you must select Exit (click F5 in the PC emulation display) and return to a previous screen after you use Enter. If the entry is not valid, the system may beep and/or display an error message and does not save the entry. |
| Delete | F8 | **Delete a current entry**. Select Delete (click F8 in the PC emulation display). |

**Table 1-4.   Screen Keys**—*Continued*

| Display | PC Key | Function |
|---------|--------|----------|
| Next | F9 | **Program sequentially numbered items**. If you are programming a group of sequentially numbered extensions, lines, or trunks, you may optionally select Next (click F9 in the PC emulation display). This saves your entry and automatically provides the number of the next extension or trunk in the sequence. Typically, you remain at the same screen until you select Next. In a few cases, you may return to an earlier screen in the procedure. |
| Back | F5 | **Return to the previous screen**. Select Back (click F5 in the PC emulation display) when you complete a procedure, to move up one screen in the menu hierarchy. (Appendix A provides a reference to the entire System Programming menu hierarchy.) |
| | | **Exit a screen without changes**. In most cases, you select Back (click F5 in the PC emulation display) to exit from a screen without making any changes. Exceptions are noted as part of a procedure. |
| | | **Complete a procedure**. *In a few cases,* you return to the System Programming menu when you select Back. In most cases, you return to an intermediate step within the procedure. You can then select one of the options shown on the screen and continue programming, or you can continue to use Back until you return to the System Programming menu. |

## Using Enter

Pressing Enter to save your entry produces one of the following results:

■   The next screen in the procedure appears.

■   The screen does not change and you can enter another extension or line/trunk. In most of these cases, Delete is also an option. Enter is used either to assign the extension to a group or to assign a feature to the extension. Delete is used to remove the extension from a group or to remove the feature from the extension.

■   The procedure is complete and you return to a previous screen.

## Using Next

When you program a feature that applies to a sequence of extensions, lines/trunks, or groups, the screen key Next appears on the console display. Next (F9 in the PC emulation display) permits you to save your current entry and display the next number in the sequence. You can continue to press Next until you finish programming the entire sequence. When the last number in the

sequence displays on the screen, press `Enter` (`F10` in the PC emulation display) to save the final entry and move to the next step of the procedure. Procedures that allow the use of `Next` return you to the correct screen to continue programming.

## System Programming Hierarchy

For a complete listing of the options available under each of the System Programming Main menu options displayed on the system programming console, see the fold-out in Appendix A.

# Access to System Programming from the 4424LD+ or MLX-20L or Console

Follow the steps below to begin system programming. All of the procedures in Chapter 3, "Programming Procedures" begin at the System Programming menu shown in Step 3 of the following procedure.

For information about accessing system programming through a PC with WinSPM, see Chapter 2, "Programming with WinSPM."

1. Press menu to display the Main menu.

```
MENU MODE: Select Feature
Press HOME to Exit
Directory
Messages
Posted Msg        Sys Program
Alarm Clock       Maintenance
Timer             Ext Program
```

2. Select `System Programming`. The System Set-Up screen appears.

```
System Set-up:
Review and Exit
Type: xxxx
Mode: xxxx
Operator:      xxxx xxxx
xxxx xxxx      xxxx xxxx
Back
```

**NOTE** `Ext Program` does not appear on this screen if the programming console is a QCC.

On the System Set-up screen, system information appears in place of the `x`'s.
`Type = Voice/Data`
`Mode = Key, Hybrid/PBX,` or `Behind Switch`
`Operator = Position extension numbers`

3.  Select `Back`. The System Programming menu appears.

```
System Programming:   >
Make a selection
System          Extensions
SysRenumber     Options
Operator        Tables
Lines/Trunks    AuxEquip
Back            NightSrvce
```

Press the button next to
your selection.

## System Programming Menu

Figure 1-14 shows the two screens that make up the System Programming menu.

```
System Programming: >
Make a Selection
System          Extensions
SysRenumber     Options
Operator        Tables
Lines/Trunks    AuxEquip
Back            NightSrvce
```

```
System Programming:  >
Make a Selection
Labeling        Language
Data
Print
Cntr-Prg
Back
```

**Figure 1-14. System Programming Menu Screens**

Table 1-5 describes the options.

**Table 1-5.   System Programming Menu Options**

| Option | Description |
|---|---|
| System | Set system operating conditions. |
| SysRenumber | Select the system numbering plan and/or reassign extension numbers with 1- to 4-digit numbers that are more appropriate or convenient for your company. |
| Operator | Assign or remove operator positions, and program operator features (such as Operator Hold Timer or QCC options). |
| LinesTrunks | Program line/trunk options. |
| Extensions | Program extension features (such as line assignments). |
| Options | Program system-wide features (such as Transfer Return). |

**Table 1-5.  System Programming Menu Options**—*Continued*

| Option | Description |
|---|---|
| Tables | Program features that require entering information in a table (such as Allowed Lists and Disallowed Lists). |
| AuxEquip | Program auxiliary equipment connected to the system (such as loudspeaker paging and fax). |
| NightSrvce | Program Night Service features. |
| Labeling | Program the labels shown on display telephones (such as Posted Messages and entries in the System Directory). |
| Data | Specify extensions that need voice and data capability. |
| Print | Print system programming reports (such as system configuration and extension assignments). |
| Cntr-Prog | Perform centralized telephone programming (assign features to specific buttons on telephones). |
| Language | Select the language for: the system, 4400-Series or MLX display telephones, SMDR reports, and print reports. |

## Exiting System Programming

Use the information in Table 1-6 to return to the System Programming menu, the Main menu (Menu Mode screen), or the Home screen from within a programming screen.

**Table 1-6.  Exiting System Programming**

| To return to… | On the console, press… | On the PC display, click… |
|---|---|---|
| Previous menu | Back | F5 |
| Main menu | Menu | End |
| Normal Call-Handling | MLX-20L Console: Home<br>4424LD+ Console: Exit | Home<br>Exit |

Access to System Programming from the 4424LD+ or MLX-20L or Console

# Idle States

Some programming procedures can be started only when the entire system, or some part of it, such as a trunk or an extension, is idle (not in use). Some procedures require that a trunk or extension be idle only at the instant of programming. Lengthy procedures require the system, trunk, or extension to remain idle until programming is completed. These procedures wait for the system, trunk, or extension to become idle and then prevent the initiation of any new calls. This condition is called forced idle.

**NOTE▶** If a procedure requires an idle condition, do the programming outside of normal business hours.

For complete information, refer to "Idle States" in Chapter 2.

# Programming with WinSPM

# 2

## Contents

# Programming with WinSPM

# 2

## Overview

The Windows System Programming and Maintenance (WinSPM) software package offers an alternate method of programming the MERLIN MAGIX Integrated System by using a PC. This method frees the system programming console for other uses and also provides the following additional functions:

- Backing up system programming information

- Restoring system programming information from a backup

- Printing, viewing, and storing reports

- Programming the system remotely

- Programming in surrogate mode

- Creating button labels

- Storing print report data and/or user annotation notes using Notepad Editor

WinSPM provides two modes for programming your MERLIN MAGIX Integrated System:

- **Quick Access Mode**. A graphical user interface (GUI) for those tasks most commonly performed by the System Manager–for example, adding or deleting members of groups, performing system inventories, creating reports, programming multiple systems, making station labels shown on display telephones, and more.

- **Standard SPM Mode**. Provides an emulation display of the system programming console. It allows basic SPM programming of the MERLIN MAGIX system and supports SPM programming for options not included in Quick Access mode.

WinSPM is available on CD-ROM and floppy disks. You can use the WinSPM software directly from the floppy disks or CD-ROM on your PC. If your PC has a hard disk, however, you should install WinSPM from either the floppy disks or CD-ROM onto the hard disk.

This guide describes the use of WinSPM in Standard SPM Mode. If you are using Quick Access, refer to the documentation and online help provided with the WinSPM application for additional information.

# System Requirements

WinSPM is designed to function with:

- Windows 95, Windows 98, or Windows NT Release 4.0 or higher

- IBM-compatible Personal Computer with a Pentium 100 or higher (Pentium II or higher recommended)

- 40 MB or more of available space on the hard drive

- 32 MB of RAM (64 MB recommended)

- 1 COM Port

- Modem with auto baud capabilities (PEC 2569-839 recommended), with specific drivers loaded

- Video Card that supports at least 256 colors (65536 or more recommended)

  NOTE▶ From the Display Properties window on your Windows desktop, be sure to select Small Fonts for the Font Size option. See "Font Size Settings" under "Desktop Setup," later in this chapter.

Depending on how you connect the PC to the control unit, you also need the following items:

- Direct local connection if the PC is within 50 feet of the control unit:
  - Either a 355AF modular adapter (if there is a male connector on the interface cable) or a 355A modular adapter (if there is a female connector on the interface cable)
  - A four-pair modular cord (D8W)

- Direct local connection if the PC is more than 50 feet from the control unit:
  - 355AF adapter
  - EIA crossover cable
  - Two Z3A2 Asynchronous Data Units (ADUs)
  - ADU crossover cable
  - 400B2 power adapter
  - 2012D transformer
  - BR1A-4P adapter and either a 102 connecting block or 103 connecting block
  - 248B adapter
  - Eight-position wall jacks
  - Four-pair plug-ended cable
  - D8W cords
  - D6AP power cord
  - EIA-232-D cables

- Internal or External connection:
  - Modem that supports 1200- or 2400-bps connections
  - Modem cable

In addition, a parallel printer is useful for reports. The PC needs a parallel port for the connection.

**NOTE▶** WinSPM uses Interrupt 4 and I/O address 3F8 for COM1. It uses Interrupt 3 and I/O address 2F8 for COM2.

# Installing the WinSPM Software

The WinSPM software can be installed from either CD-ROM or floppy disks.

## CD-ROM

1. Insert the CD-ROM into your CD-ROM drive.
2. From the Start menu, select Run.
3. When prompted for the file or folder you want to open, type D:\setup.exe. (If your CD-ROM drive is set up as a different drive letter, replace D as necessary.)
4. Installation creates a program group named "Lucent Solutions." This group contains a folder titled "WinSPM," which contains an icon titled "WinSPM." Clicking on this icon starts the WinSPM application.

## Floppy Disks

Before installing or running WinSPM, it is recommended that you make a backup copy (see your operating system guide) of the WinSPM disk. Store the original in a safe place. Use the backup copy to run the installation program.

1. Insert diskette number 1 into your 3.5" floppy disk drive.
2. From the Start Menu, click Run.
3. When prompted for the file or folder you want to open, type A:\setup.exe.
4. Insert additional diskettes when prompted to do so.

# Getting Started

Upon installation of the WinSPM software, the following initial screen appears:
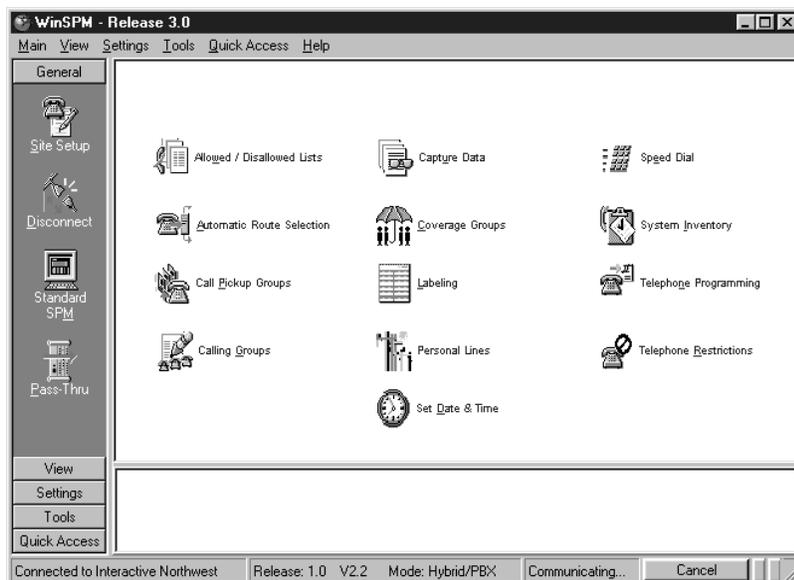


**Figure 2-1. WinSPM Main Screen**

The First Time User Wizard assists you through the following four steps:

1. Set up your desktop:

   ■ Font Size Settings

   ■ Modem Definition

   ■ Setting the Start Bar "Auto Hide" Property/Changing the Screen Resolution

2. Define your Password.

3. Set up your site:

   ■ Direct Connection

   ■ Internal Connection

   ■ External Connection

   ■ Manual Connection

4. Connect to the MERLIN MAGIX Integrated System:

   ■ Direct Connection

   ■ Internal Connection

   ■ External Connection

## Desktop Setup

### Font Size Settings

At present, WinSPM does not support large fonts. Some fonts may be virtually unusable if Large Fonts is selected on the settings tab of the Display Properties window. To correct this setting:

1. Anywhere on your desktop, right-click and select Properties on the pop-up menu. The Display Properties window appears.

2. Click the Settings tab.

3. In the Font Size field, select Small Fonts from the drop-down list box.

4. Click Apply.

5. To close the window, click OK.

### Modem Definition

If you are using a modem to connect to a MERLIN MAGIX Integrated System, and you have set the Maximum Speed to above 2400 bps, the modem in the MERLIN MAGIX Integrated System may time-out before your modem has enough time to step down to 2400 bps and establish communications. For this reason, it is suggested that you use a modem definition with a Maximum Speed of 2400 bps. You can create a new modem definition while retaining your original, higher speed definition if you choose.

#### Modifying an Existing Modem Definition

If your system is dedicated for connection with WinSPM to the MERLIN MAGIX Integrated System for programming and the modem on that system will *not* be used for any other purpose, do the following:

1. From the desktop, click Start.

2. Go to Settings and choose Control Panel.

3. Double-click the Modems icon. A list of modems configured in the system is displayed.

4. Highlight the name of the modem that is used to connect to the MERLIN MAGIX Integrated System and click the Properties button.

5. On the General tab, change the value in the drop-down list under Maximum Speed to 2400.

6. Verify the following settings:

   **Connection Preferences**

       Data Bits: 8

       Parity: None

       Stop Bits: 1

       [X] Wait for dial tone before dialing.

   **Advanced**

       [X] Use Flow Control

           [X] Hardware (RTS/CTS)

7. To save the new settings, click OK.

8. To close the Modem Properties dialog box, click Close.

9. From the Control Panel, click File, then choose Exit to close the Control Panel and return to the Windows desktop.

### Adding a New Modem Definition

If the system you are using is *not* dedicated for connection with WinSPM to the MERLIN MAGIX Integrated System for programming and the modem on that system can be used for other purposes, do the following:

1. From the Windows desktop, click Start.

2. Go to Settings and choose Control Panel.

3. Double-click the Modem icon. A list of modems configured in the system is displayed.

4. Take note of the name of the modem that is currently being used in the system to make connection to the MERLIN MAGIX Integrated System.

5. Press the Add button. The Install New Modem Wizard appears.

6. Select the "Don't detect my modem" check box and click Next.

7. Highlight the name of the modem manufacturer for your modem.

8. Highlight the name of your modem in the Models list and click Next.

9. Select the COM port that corresponds to the COM port used by your modem and click Next.

10. Once your modem is set up successfully, click Finish to complete the operation. The new modem now appears in the list of modems on the Modem Properties form (usually with the same name as the modem identified in Step 4) with a #2 after it.

11. Highlight the name of the new modem and click Properties.

12. On the General tab, change the value in the drop-down list under Maximum Speed to 2400.

13. Verify the following settings:

**Connection Preferences**

Data Bits: 8

Parity: None

Stop Bits: 1

[X] Wait for dialtone before dialing.

**Advanced**

[X] Use Flow Control

[X] Hardware (RTS/CTS)

14. To save the new settings, click OK.

15. To close the Modem Properties dialog box, click Close.

16. From the Control Panel, click File, then choose Exit to leave the Control Panel and return to the Windows desktop.

> **NOTE▶** Be sure to always select the new modem from the list presented during connection to WinSPM.

## Setting the Start Bar "Auto Hide" Property/Changing the Screen Resolution

Some WinSPM screens may be difficult to use in 640x480 resolution because they use the full height of the screen. For this reason, you must either turn "Autohide" on for the Taskbar or increase your screen resolution settings. If you cannot see the OK button at the bottom of the screen, perform one of the following procedures.

### Setting the Start Bar "Auto hide" Property

1. Right click an area of the Taskbar that is not a button. By default, the Taskbar is located at the bottom of the screen.

2. Select "Properties" from the pop-up menu.

3. On the Taskbar Properties dialog box, make sure that the "Auto hide" check box is selected.

4. Click Apply, then click OK. The Taskbar disappears. To bring up the Taskbar, simply move your mouse to the edge of the screen where it was previously displayed.

5. You should now be able to see the OK button. Simply click it to continue your first-time execution of WinSPM.

### Changing the Screen Resolution

1. On the Taskbar, click Start.

2. Select Settings, then Control Panel.

3. Click the Display icon.

4. When the "Display Properties" dialog box appears, click the Settings tab.

5. Move the Desktop Area slider so that the resolution setting is higher than 640 x 480.

6. Click Apply.

7. You should now be able to see the OK button. Simply click it to continue your first-time execution of WinSPM.

## Defining Your Password

There are two passwords in WinSPM:

■ **Application Password**. There is an application-level password that serves as a security measure for accessing the WinSPM software itself. You are prompted to enter this password during the application login. Any characters that can be entered with the keyboard are acceptable. An asterisk displays for each password character entered. Since the actual password characters are not displayed, you are prompted to reenter your password for confirmation.

■ **System Password**. A password is always required to establish a modem connection with the MERLIN MAGIX Integrated System. You can perform remote system programming only if you enter the correct password. (See "Password" on page 2-37 for details on establishing your system password.)

⚠ **SECURITY ALERT:**

■ *The password characters do not appear on the screen as you type them.*

■ *Use a minimum of five characters.*

■ *Passwords should consist of a random, non-repetitive, hard-to-guess sequence of characters.*

## Setting Up a Site

To use the WinSPM software, your PC must be connected to the MERLIN MAGIX Integrated System directly via a serial port on your PC; otherwise you must connect to the MERLIN MAGIX system's internal modem using your PC's modem.

Once you install WinSPM on your PC, the First-Time User Wizard guides you through setting up your application password and using the Site Setup option to create "sites" that correspond to the MERLIN MAGIX Integrated System that you are responsible for programming. Each site can be labeled with as much information as you need to differentiate one site from another.

When you set up a site, you must first determine how your PC will connect to the MERLIN MAGIX Integrated System you want to program. A site can have multiple connection types set up. There are four connection types available *(setup instructions for each type are provided on pages 2-9 through 2-12)*:

■ **Direct Connection**. A serial port on your PC is connected directly to the MERLIN MAGIX system programming jack—the lower modular RS-232 jack on the processor module.

■ **Internal Connection**. You are using a modem (either connected to or built into your PC) that is connected to the MERLIN MAGIX Integrated System (for example, via a 016 T/R module) to access the MERLIN MAGIX internal modem.

■ **External Connection**. You are using a modem (either connected to or built into your PC) and using a dial-up connection to access the MERLIN MAGIX internal modem. The External Connection type requires use of the Remote Access feature to allow you to connect to the MERLIN MAGIX programming port without manual intervention.

■ **Manual Connection**. You are using a modem (either connected to or built into your PC) and using a dial-up connection to access the MERLIN MAGIX internal modem. The Manual Connection is used when you must reach the MERLIN MAGIX programming port by placing a call to the site and the person who answers transfers your call to the programming port.

## Direct Connection

To set up a site for a Direct Connection, do the following:

1. From the Site Setup screen, click Add. The cursor moves to the Site Name field.

2. Type in the Site Name you wish to use and press the TAB key. Site Names are limited to 30 characters. You may only use characters that are acceptable for file names in the Windows environment.

3. Complete the following fields to help differentiate this site from any other site(s) you may want to add. These fields are not required; therefore, you may fill in as many or as few as you determine necessary:

   — Address
   — City
   — State
   — Postal Code
   — Country
   — Contact
   — Telephone
   — Notes

4. Click the Direct tab.

5. Select the Enabled check box. A check mark appears in the box and the COM Port drop-down list box is no longer grayed out.

6. Click the arrow located on the right-hand side of the COM Port drop-down list box to get a list of the available COM ports on your PC. Click once on the number that corresponds to the COM port on your PC that is connected to the MERLIN MAGIX administration port.

7. Set the COM port speed to 2400 (most instances).

8. If you want to add another site, click Add and begin on Step 2 in the process for the appropriate connection type for the next site.

9. When you finish adding sites, click OK.

**NOTES** ▶ ■ If you have multiple modems installed in your system, after clicking OK, you may be prompted to select the modem you want to connect with.

■ Clicking Cancel from the Connection Selection screen causes you to return to either the Main screen or the First-Time User Wizard, depending on from where the screen was started.

## Internal Connection

To set up a site for an Internal Connection, do the following:

1. From the Site Setup screen, click Add. The cursor moves to the Site Name field.

2. Type in the Site Name you wish to use and press the Tab key. Site Names are limited to 30 characters. You may only use characters that are acceptable for file names in the Windows environment.

3. Complete the following fields to help differentiate this site from any other site(s) that you may want to add. These fields are not required; therefore, you may fill in as many or as few as you determine necessary:

   — Address
   — City
   — State
   — Postal Code
   — Country
   — Contact
   — Telephone
   — Notes

4. Click the Internal tab.

5. Select the Enabled check box. A check mark appears in the box and the Dial String dialog box is no longer grayed out.

6. Be sure that the Dial String check box displays *10.

7. If you want to add another site, click Add and begin on Step 2 in the process for the appropriate connection type for the next site.

8. When you finish adding sites, click OK.

**NOTES** ▶ ■ If you have multiple modems installed in your system, after clicking OK, you may be prompted to select the modem you want to connect with.

■ Clicking CANCEL from the Connection Selection screen causes you to return to either the Main screen or the First-Time User Wizard, depending on from where the screen was started.

## External Connection

To set up a site for an External Connection, do the following:

1. From the Site Setup screen, click Add. The cursor moves to the Site Name field.

2. Type in the Site Name you wish to use and press the Tab key. Site Names are limited to 30 characters. You may use only characters that are acceptable for filenames in the Windows environment.

3. Complete the following fields to help differentiate this site from any other site(s) that you may want to add. These fields are not required; therefore, you may fill in as many or as few as you determine necessary:

   — Address
   — City
   — State
   — Postal Code
   — Country
   — Contact
   — Telephone
   — Notes

4. Click the External tab.

5. Select the Enabled check box. A check mark appears in the box and the Dial String dialog box is no longer grayed out.

6. Edit the contents of the Dial String dialog box for the exact dial string the modem will need to dial to access the remote MERLIN MAGIX administration port. The dial string must include the Remote Access line, the barrier code (if required), and the dial code for the MERLIN MAGIX admin port (*10). Use commas to create necessary pauses in the dial string.

   **Example**: You are connecting to a remote MERLIN MAGIX Integrated System via a modem through the Remote Access line 800 555-9999. The Remote Access line is set up with barrier code 1234 for access to the remote dial tone. The site from which you are dialing requires you to dial 9 to get an outside line. Using commas for pauses in the dial string, the dial string would be 918005559999,,,,,1234,*10.

7. If you want to add another site, click Add and begin on Step 2 in the process for the appropriate connection type for the next site.

8. When you finish adding sites, click OK.

**NOTES** ▶ ■ If you have multiple modems installed in your system, after clicking OK, you may be prompted to select the modem you want to connect with.

■ Clicking CANCEL from the Connection Selection screen causes you to return to either the Main screen or the First-Time User Wizard, depending on from where the screen was started.

## Manual Connection

To set up a site for a Manual Connection, do the following:

1. From the Site Setup screen, click Add. The cursor moves to the Site Name field.

2. Type in the Site Name you wish to use and press the Tab key. Site Names are limited to 30 characters. You may use only characters that are acceptable for filenames in the Windows environment.

3. Complete the following fields to help you differentiate this site from any other site(s) that you may want to add. These fields are not required; therefore, you may fill in as many or as few as you determine necessary:

    — Address
    — City
    — State
    — Postal Code
    — Country
    — Contact
    — Telephone
    — Notes

4. Click the Manual tab.

5. Click the Enabled check box. A check mark appears in the box and the Dial String dialog box is no longer grayed out.

6. When you try to connect using the Manual Connection type, WinSPM displays a dialog box with an OK button. Place a voice call to the system on a regular line and ask the operator to transfer you to the MERLIN MAGIX admin port by dialing *10. When you hear the modem answer tone, click OK to complete the connection and then hang up the handset.

7. If you want to add another site, click Add and begin on Step 2 in the process for the appropriate connection type for the next site.

8. When you finish adding sites, click OK.

> **NOTES** ▶
> - If you have multiple modems installed in your system, after clicking OK, you may be prompted to select the modem you want to connect with.
>
> - Clicking CANCEL from the Connection Selection screen causes you to return to either the Main screen or the First-Time User Wizard, depending on from where the screen was started.
>
> - While setting up a Manual Connection, you will also be prompted to set the Maximum Speed for connection. It is recommended that you select 2400.

## Connecting to a MERLIN MAGIX Integrated System

### Direct Local Connection

For a direct local connection, you must connect the PC to the system programming jack. This is the lower modular RS-232 jack on the processor module, as shown in Figure 2-2. (The upper jack is reserved for the SMDR printer.)

To connect a PC more than 50 feet from the control unit, see Figure 2-3.

For direct local connections, the system supports speeds of 1,200 and 2,400 bps.

**NOTE▶** You must use a direct local connection to program in Surrogate mode.
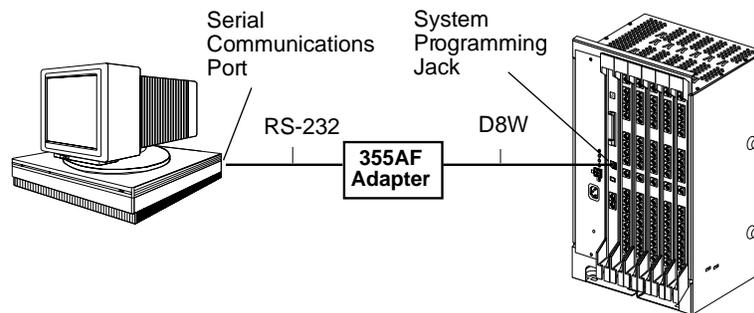


**Figure 2-2. Direct Connection**
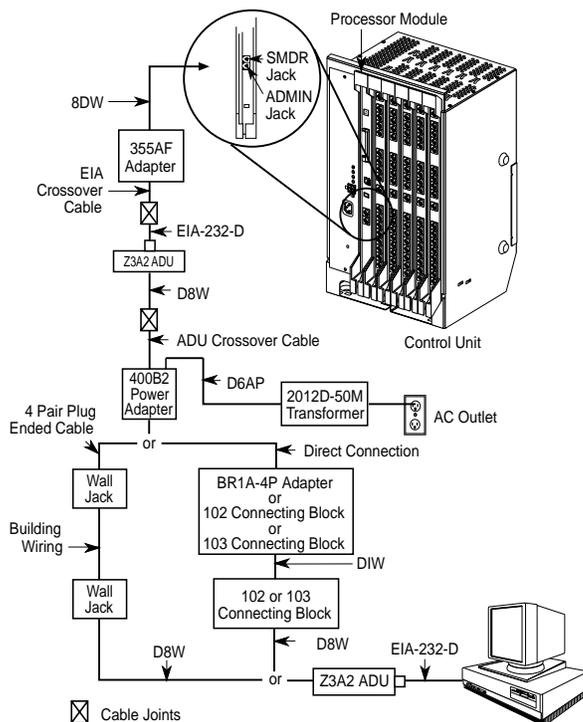
**Figure 2-3. Direct Connection, PC More Than 50 Feet Away**

## Internal Connection

For an internal connection, you must use a modem (either connected to, or built into, the PC) to access the internal modem in the control unit. Connect the modem to a T/R jack on a 016 (T/R) module, as shown in Figure 2-4.

The internal modem operates at speeds of 1200 and 2400 bps.
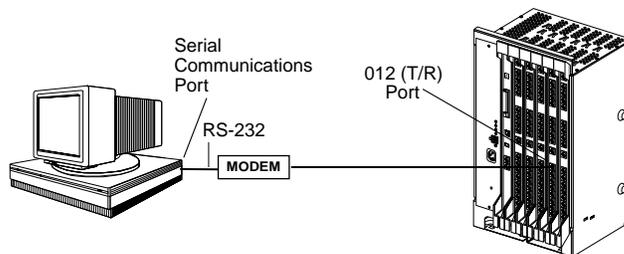


**Figure 2-4. Internal Connection**

## External Connection

For an external connection, you must use a modem (either connected to, or built into, the PC) to access the internal modem in the control unit. You must also use a dial-up connection, as shown in Figure 2-5.

The internal modem operates at speeds of 1200 and 2400 bps.
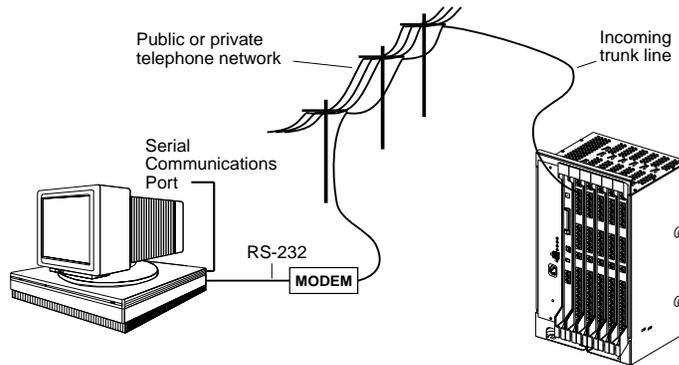


**Figure 2-5. External Connection**

# WinSPM Main Screen

When you connect your PC to the MERLIN MAGIX Integrated System and start the WinSPM application, the WinSPM Main screen shown in Figure 2-6 appears.
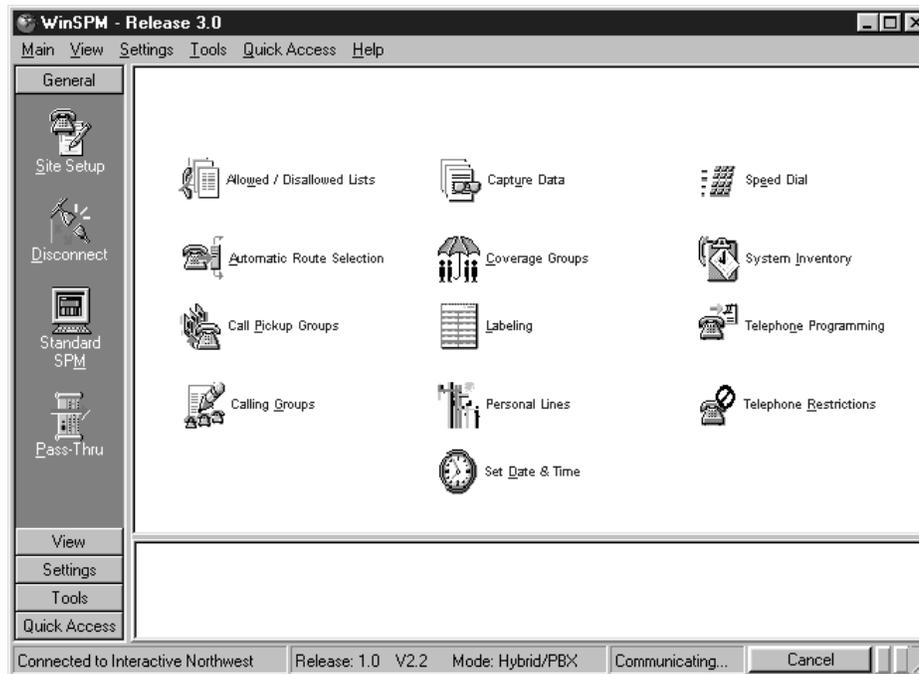


**Figure 2-6. WinSPM Main Screen**

The Main screen icons shown on the left-hand toolbar provide the following functionalities:

■ **Site Setup**. Launches the Site Setup screen which depicts all of the sites defined in the WinSPM application. Used to set up a new site or modify an existing site.

■ **Disconnect**. Disconnects you from a MERLIN MAGIX Integrated System once a connection has been established.

■ **Standard SPM**. Launches the Standard SPM Mode.

■ **Pass-Thru**. This icon is not used with MERLIN MAGIX R1.0i systems.

■ **View**. Enables you to access the Log Viewer and browse notes and reports.

■ **Settings**. Enables you to define password, options, and TAPT settings.

■ **Tools**. Enables you to access the backup, restore, and convert features.

■ **Quick Access**. Enables you to access many common features including: Allowed/Disallowed Lists, Automatic Route Selection, Call Pickup Groups, Calling Groups, Capture Data, Coverage Groups, Labeling, Personal Lines, Set Date & Time, Speed Dial, System Inventory, Telephone Programming, and Telephone Restrictions.

# Using Quick Access

The Quick Access interface allows you to complete common tasks in an extremely user-friendly manner. The Quick Access window (see Figure 2-6) displays a series of large graphic buttons representing each of the following supported Quick Access tasks:

— Allowed/Disallowed Lists
— Automatic Route Selection
— Call Pickup Groups
— Calling Groups
— Capture Data
— Coverage Groups
— Labeling
— Personal Lines
— Set Date and Time
— Speed Dials
— System Inventory
— Telephone Programming
— Telephone Restrictions

**NOTE**▶  For additional information on programming your MERLIN MAGIX Integrated Systems in Quick Access mode, refer to the documentation and online help provided with the WinSPM application. For information on programming your MERLIN MAGIX Integrated System in Standard SPM Mode, see page 2-26.

Descriptions of each of the Quick Access tasks are provided in the following sections.

## Allowed/Disallowed Lists

Used in conjunction with Calling Restrictions (Outward and Toll), an Allowed List is a list of numbers that the caller is allowed to dial, despite restrictions. For example, an Allowed List assigned to an outward-restricted extension can allow calls to specific local numbers, such as (911) or toll numbers. For toll-restricted extensions, 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 extension user is not allowed to dial, even if the extension 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. Disallowed Lists can also be used in conjunction with Remote Access to restrict calls made through the system from remote locations. In this case, Disallowed Lists can be assigned either to specific Remote Access barrier codes or (if barrier codes are not used) to specific types of lines/trunks (all Tie/ Direct Inward Dialing (DID) and all non-Tie/non-DID trunks). For more information, refer to "Allowed Lists," on page 132, and "Disallowed Lists," on page 133.

## Automatic Route Selection (ARS)

ARS allows outgoing calls to be dynamically routed over selected facilities after dialing an ARS access code. This enables the system to select the least expensive route for each call. ARS is available only in Hybrid/PBX mode.

Programmable lists, called tables, indicate the desired routes (line/trunk facilities) for specified area codes and/or exchanges. There is a different ARS table for each type of call (local, toll, special number, and so on). The tables are chosen according to the telephone number digits that are dialed by a user. Each ARS table has a particular pool to which it routes calls. For more information, refer to "Pickup Groups," on page 102.

## Call Pickup Groups

An extension that is a member of a Call Pickup Group can program a button on the telephone or dial a feature code to pick up a call ringing on the telephone of any other member extension in that group. There is a limit of 30 groups with15 extensions per group. An extension may be a member of only one Pickup Group. For more information, refer to "Automatic Route Selection," on page 146.

Call Pickup Groups contain the following:

■ **Available Extensions**. The list of extensions in the system. Double-click or use the right-arrow button to move extensions into the Selected Extension.

■ **Selected Extensions**. The list of extensions that are members of the Call Pickup Group that is selected with the tabs. Double-click or use the right-arrow button to remove extensions to the Available Extensions. Note that this list is limited to 15 extensions per group.

■ **Group Number**. Select the Call Pickup Group to display its members in the Selected Extensions list box.

## Calling Group

This feature is used to define the extensions that are members of a Calling Group, and to assign the lines/trunks pools that you want to ring directly into this Calling Group.

From the Calling Group Quick Access screen, you pick the Calling Group you wish to modify by highlighting it. There are seven tabs that can be modified for each Calling Group. These are: General, Primary Delay, Overflow, Queue, Members, Lines & Pools, and Coverage.

■ General:

— **Group Type**. Choose from the drop-down list box.
— **Hunt Type**. Allows you to specify whether the Hunt Type is circular, linear, or most available. Choose from the drop-down list box.

— **Secondary Delay Announcement**. Select from the drop-down list box the extension to be used as a secondary delay announcement.

— **Delay Interval**. Select an interval from 0-900 seconds for the secondary delay.

— **Delay Announce Repeat**. Select Yes or No if you wish the secondary delay.

— **Message Waiting Receiver Extension**. Select the extension at which you wish to light a message waiting light if the group is covered by a voice mail box.

- Primary Delay:

    — Select the extensions you want to provide primary delay announcements for the chosen Calling Group.

- Overflow:

    — **Overflow Coverage Calling Group Number or QCC LDN extension**. From the drop-down list box, choose a Calling Group or the QCC queue that you want to provide overflow coverage for this Calling Group.

    — **Overflow Threshold (Calls)**. Choose the number of calls (1-99) that are allowed to stay "queued" in this Calling Group before "overflowing."

    — **Overflow Threshold Time (seconds)**. Choose the number of seconds (0-900) the oldest waiting call must wait before overflowing.

    — **Prompt-Based Overflow**. Choose Yes or No to allow or disallow a waiting caller the ability to press the pound (#) key on their telephone to initiate overflow.

- Queue:

    — **Calls In Queue Alarm Thresholds (seconds)**. For each choice, choose the flash rate interval. For example:

        - If the number of waiting calls is fewer than the value programmed for Threshold 1 or drops below that level, the LED is unlit.

        - If the number of waiting calls is greater than or equal to the Threshold 1 value, but less than the Threshold 2 value, the LED flashes.

        - If the number of waiting calls is greater than or equal to the Threshold 2 value, but fewer than the value for Threshold 3, the LED winks.

        - If the number of waiting calls is greater than or equal to the highest value, Threshold 3, the LED lights steadily.

    An external alert only signals when the number of calls in the queue is greater than or equal to the programmed Threshold 3 value.

    — **External Alert for calls in Queue Alarm**. Choose the adjunct extension associated with the external alert device. There are two choices:

        - An LED on any 4400-Series or MLX telephones can be associated with a Calls-in-Queue Alarm button.

        - An external alert on an MLX telephone using a Multi-Function Module set for Supplemental Alert Adapter operation and programmed as the alert.

    — **Queue Control**. Choose the number of calls (0-99) allowed to back up in queue before sending a network busy signal.

- Members:

— Choose extensions from the list to place them into the selected Calling Group. Note that only the extensions for the tip/ring ports associated with a voice messaging system may be in VMI Calling Groups; there is a system maximum of 20 VMI Calling Groups, and any one Calling Group may have a maximum of 20 members. An extension may be a member of only one Calling Group.

## Capture Data

This feature allows you to read from the MERLIN MAGIX system in one large batch. This is useful if you are setting up the MERLIN MAGIX system for the first time or if you are making significant changes. Capture Data reads all of the data needed for each selected Quick Access form.

■ **Task Selection**. Check the items that you want to read from the MERLIN MAGIX system. Some of the items are for the whole Quick Access form, some are broken down into the individual tabs that appear on the Quick Access forms. As you check/uncheck items, the estimated number of minutes for completion changes to give you a "best guess" as to how long the reading will take.

■ **Baseline Values**. These values help calculate the estimated number of minutes for completion. Some of these values will be changed to the correct values if the data has been retrieved. Other values need to be entered manually. These values are not retained after the Capture Data form is closed.

## Coverage Groups

This feature is used to assign or remove an extension from a Coverage Group. A Coverage Group is a group of senders. Group Coverage is an arrangement where calls from a group of senders are redirected to one or more receivers. For more information, refer to "Group Coverage Member Assignments," on page 104.

Coverage Groups include the following:

■ **Available Extensions**. The list of extensions in the system. Double-click or use the right-arrow to move extensions into the Selected Extensions.

■ **Selected Extensions**. The list of extensions that are members of the Coverage Group that is selected with the tabs. Double-click or use the right-arrow to remove extensions to the Available Extensions.

■ **Group Number**. Select the Calling Group Number to display its members in the Selected Extensions list box.

## Labeling

This feature allows you to edit the various system labels. System Speed Dial changes are performed separately. A simple dialog box containing the following fields is available.

■   **Label Type**. A group of options including: System Directory, Extensions, Adjuncts, Lines and Trunks, Posted Messages, and Group Calling. Select the type for which you want to edit labels.

■   **Entry Number**. This field prompt changes to reflect the option you selected for Label Types. Use this field to select the extension number, line, trunk, posted message, or Calling Group that you want to change.

■   **Name**. Text for this label. Different label types are limited to different string lengths – for example, extensions and Calling Groups are limited to 7 characters.

> **NOTE** All labels are always printed in capital letters, exactly as they appear on the MERLIN MAGIX display telephones.

## Personal Lines

This feature allows you to add lines and pools to buttons on a telephone.

> **NOTE** By default, each added line or pool is programmed on available successive buttons starting with the lowest button on the telephone, and overwrites any programming that may already exist on these buttons.

⚠ **CAUTION:**
*After you click the Apply button, you will be able to see where the lines and pools were placed on the telephone. Keep in mind that adding a line that is a member of a pool results in a pool being assigned to the button on the telephone. You cannot assign the same line or pool to more than one button on the telephone twice. Also remember that lines and pools are added on the buttons immediately following the System Access buttons and overwrites any other feature programmed to those buttons.*

## Set Date and Time

This feature sets the current time and date on the MERLIN MAGIX Integrated System. The dialog box contains the following:

■   The PC's date and time.

■   The MERLIN MAGIX system date and time, which can be edited and applied back to the MERLIN MAGIX system.

- A Synchronize button that gives you the ability to set the MERLIN MAGIX system date and time to match the PC's.

- An OK button that applies any changes you made to the MERLIN MAGIX system date and time.

## Speed Dial

This feature allows you to modify System Speed Dial entries. It consists of a simple display grid containing the following:

- **Speed Dial Code**. A number field defining the system speed dial code (in the range of 600 to 729).

- **Company/Name**. A description of the directory entry.

- **Number**. The number to dial.

- **Display Number**. Select Yes to display the Name when dialing; select No to display the number being dialed.

Use the following buttons to edit the System Speed Dial entries:

- **Add**. Adds a new entry.

- **Modify**. Modifies an existing entry.

- **Delete**. Removes an existing entry.

## System Inventory

This feature offers a report on the MERLIN MAGIX Integrated System hardware configuration. Starting with the processor (installed in slot zero), it obtains the characteristics of the hardware components available in each slot in the MERLIN MAGIX system carrier.

By default, the Hardware Inventory screen lists the Board Type, Hardware Vintage, Firmware Vintage, and Application Vintage of each available control unit module (scroll down for more). To quickly obtain the specifications of a given module, click the module's image. To obtain a total report, click the corresponding Print button.

Use the Print button to view the printed report on the screen (Print Preview). You can either print a paper copy of the report or save the report to a file.

## Telephone Programming

Telephone programming allows the centralized programming of a subscriber's telephone. When you select this feature, a window is displayed containing the following elements:

- A list of extensions, labels (if read), and logical IDs. To sort this list, click the arrow on the header bar for the column you want to sort by.

- Notes window. Use this window to create or edit annotations.

- OK button. Highlight the extension you wish to program and click OK. (Double-click the extension to go to the next screen.)

- Print button. Use this button to print the list of extensions, labels, and LIDs.

- Cancel button. Use this button to cancel and return to the previous menu.

- Help button. Use this button to display Help information.

## Telephone Restrictions

This feature is used to configure Calling Restrictions for an extension. Calling Restrictions include extension restrictions, Automatic Route Selection (ARS) restriction level, and Forced Account Entry. This feature is also used to assign Allowed Lists and Disallowed Lists to an extension.

This feature includes the following:

- **Authorization Code**. Enter a unique 2 to 11-digit Access code for this extension. (Optional)

- **Restriction Level**. Select Unrestricted, Outward Restrict, or Toll Restrict.

- **Facility Restriction Levels**. Select ARS restriction level (0-6).

- **Delayed Call Forwarding Rings**. Select the number of rings (0-9) before a call is forwarded using the Forward or Follow Me Feature.

- **Allow Trunk-to-Trunk Transfers**. If checked, the extension user must enter an account code before making an outside call.

- **Remote Call Forwarding**. Allows the extension user to forward all calls to an outside telephone number.

- **Pool Dial-Out Codes**. The list of trunk pools that the extension user is allowed to use to make outside calls. A list box appears, plus two buttons (>>> and <<<). To add pools, highlight the pool dial-out code in the Available box and then click the >>> button. To remove pools, highlight one or more in the Selected list box and then click the <<< button.

- **Allowed Lists**. Use to assign one or more Assigned Lists to the extension. Use the Allowed List tab to view the current extensions in that list. Use the 'Is User' check box to add/remove the selected extension from the lists. Allowed List defines area codes and exchange prefixes that this extension user is allowed to dial when making an outside call.

■ **Disallowed Lists**. Use to assign one or more Unassigned Lists to the extension. Use the allowed list tab to view the current extensions in that list. Use the 'Is User' check box to add/remove the selected extension from the lists. Disallowed List defines area codes and exchange prefixes that this extension user is *not* allowed to dial when making an outside call.

■ **Show Number List**. If checked, the Allowed or Disallowed List is read from the MERLIN MAGIX system and displayed for the currently selected Allowed/Disallowed List.

**NOTES** ▶ ■ The Standard SPM Mode Interface must be used to define Night Service Coverage.

■ Automatic Route Selection (ARS) allows outgoing calls to be dynamically routed over selected facilities after dialing an ARS access code (usually 9). This enables the MERLIN MAGIX Integrated System to select the least expensive route for each call based on the area code and prefix that the extension user dials.

## WinSPM Help

To access the WinSPM Help screens, perform one of the following:

■ Press [F1].

■ Press [Alt]+[H].

■ Click the Help button (when available).
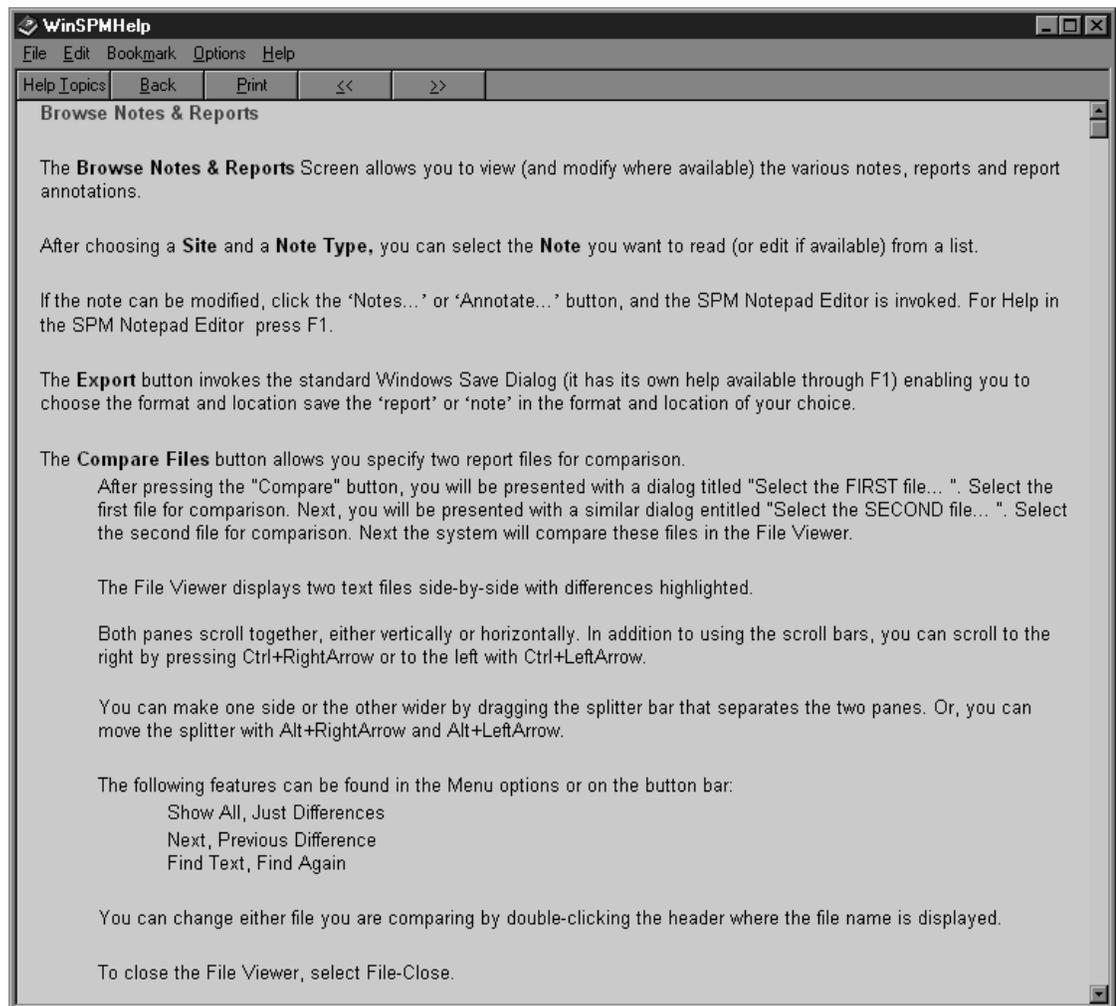


**Figure 2-7. Sample WinSPM Help Screen**

# Using Standard SPM Mode

This section describes how to use the Standard SPM Mode screens.

NOTE▶ If you are using Quick Access, Backup and Restore can be selected from the Main menu. The System Inventory option in the Quick Access mode provides a graphical representation of your system inventory, which includes all modules and versions. All of the options listed above are available in the Standard SPM Mode. For additional information on using Quick Access, refer to the documentation and online Help provided with WinSPM.

## SPM Screens

Standard SPM Mode screens simulate the system programming console. Each Standard SPM Mode screen includes a 7-line by 24-character console simulation window that corresponds to the display area of the MLX-20L or 4424LD+ telephone. To the right and left of this console simulation window are columns that list the keys corresponding to similarly located buttons on the MLX-20L or 4424LD+ telephone. Figure 2-8 illustrates the Standard SPM Mode display screen.
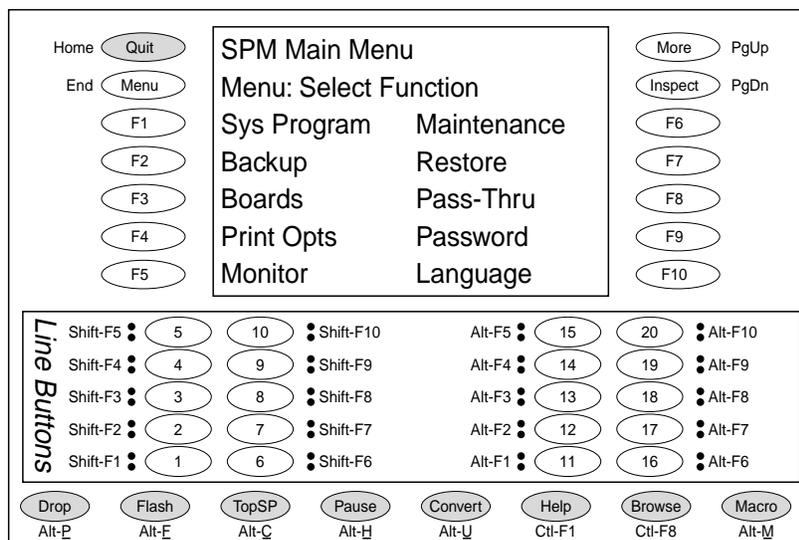


**Figure 2-8. Standard SPM Mode Display**

F1 through F5 and F6 through F10 display on either side of the console simulation screen. They represent the function keys to use when you select screen options. When a screen contains several choices, click the function key identified by the label next to your choice. (If you were programming on the console, you would press the telephone button next to your choice.)

Below the console simulation window are 20 simulated line buttons. The 20 line buttons can be selected by clicking on the appropriate button. By clicking PgDn (the Inspect feature), you can determine the status of each line and the features programmed on each line according to the letter that appears next to the line number.

The labels along the bottom of the screen correspond to buttons on the 4424LD+ or MLX-20L telephone. Table 2-1 describes the function of PC keys in WinSPM.

**Table 2-1. Function of PC Keys in WinSPM**

| PC Key | MLX-20L | 4424LD+ | WinSPM Function |
|--------|---------|---------|-----------------|
| Home | Home | Exit | Quit. Exit from WinSPM when you finish with system programming. If you are using a modem, the call is disconnected. |
| End | Menu | Menu | Return to the WinSPM Main menu. |
| PgUp | More | > | Display more menu items (when there is another screen and the > symbol appears next to the key). |
| PgDn | Inspct (MLX-20L only) | | Display the current information that has been programmed for a feature or button. *(There is no fixed Inspct button on the 4424LD+ console. This button must be programmed onto a feature key on the 4424LD+ console.)* |
| Alt + P | Drop | Drop | Enter a stop in a speed-dialing sequence. This combination also deletes an entry in a field on any screen, except the one in which you are entering a speed-dialing sequence. |
| Alt + F | Conf | Conf | Flash. Enter a switchhook flash in a speed-dialing sequence. |
| Alt + C | n/a | n/a | TopSP. Return to the top of the System Programming menu. |
| Pause | Hold | Hold | Pause. Enter a pause in a speed-dialing sequence. |
| Alt + N | n/a | n/a | Toggle modem speed between 1200 and 2400 bps. |
| Ctrl + F1 | n/a | n/a | Help. Display a Help screen about WinSPM operations. |
| Ctrl + F5 | n/a | n/a | Reset. Reset the communications port. For example, if the information on the screen is garbled, try exiting from and then re-entering the screen. If the screen remains garbled, use Ctrl + F5 to clear the screen and return to the WinSPM Welcome screen. Note that using Ctrl + F5 drops the modem connection. |

**Table 2-1.   Function of PC Keys in WinSPM**—*Continued*

| PC Key | MLX-20L | 4424LD+ | WinSPM Function |
|--------|---------|---------|-----------------|
| Ctrl + F8 | n/a | n/a | Browse. View print reports saved with Print Opts. |
| Enter↵ | Enter | Enter | The Enter↵ key on your PC can be used instead of F10 when Enter appears as a choice in the console simulation window. |
| ← Bksp | Backspace | Backspace | The Bksp key on your PC can be used instead of F9 (Backspace) when Backspace appears as a choice in the console simulation window. |
| Del | Delete | Delete | The Del key on your PC can be used instead of F8 (Delete) when Delete appears as a choice in the console simulation window. |
| ↑ ↓ ← → | n/a | n/a | The up, down, left, and right arrow keys can be used to highlight selections in a menu and to select the 20 line buttons below the console simulation window. |

## Basic System Management Procedures

This section demonstrates how to complete the following procedures using WinSPM operating in Standard Mode or the WinSPM menu:

■   Backup

■   Boards

■   Browse

■   Language

■   Maintenance

■   Monitor

■   Pass-Thru

■   Password

■   Print Options

■   Restore

■   System Programming

Table 2-2 gives a brief description of each procedure.

**Table 2-2.   Management Procedures**

| Option | Function |
|---|---|
| Sys Program | To program the system. |
| Backup[1] | To make a backup copy of your system programming and store it on a floppy disk or on hard disk. |
| Boards[1] | To show which modules (port boards) are in each slot of the control unit and allows you to assign boards to slots. |
| Print Opts[1] | To direct reports to printer or to the PC for storage on a floppy disk or on hard disk. |
| Monitor | Restricted to use by your technical support organization. |
| Maintenance | Restricted to use by your technical support organization and qualified technicians. |
| Restore[1] | To restore your system programming from floppy disk or from hard disk. |
| Pass-Thru | Not used with MERLIN MAGIX Integrated System Release 1.0i. |
| Password | To change the password for remote entry into the system. |
| Language | To select a language (U.S. English, Canadian French, Latin American Spanish, or Brazilian Portuguese) for the console simulation window on the PC. (There is also a Language option available on the System Programming menu that allows you to set the System Language.) |

1   WinSPM option only. Not available on the system programming console. To be used only by qualified service personnel.

## Backup

The Backup procedure is used by qualified service personnel to create a file of system programming information either in a specified directory (on the hard drive of the PC) or on a floppy disk.

NOTE▶ Back up your system programming information on a regular basis. A current backup file allows you to quickly and easily restore your system, if the need arises.

## Considerations

Review the following items before you begin the backup procedure:

■ The system does not have to be idle during backup; however, extension programming is blocked.

■ Any objects that are in a maintenance-busy state are stored in that state. When you restore system programming, these objects are busied out, even if they have since been released from the maintenance-busy state.

■ If you plan to store your backup file on a floppy disk, format a DOS disk.

■ Uncompressed backup files are 100,000 to 210,000 bytes in size; compressed files are about 70,000 to 85,000 bytes.

■ Maintenance data (error logs and other data used by qualified service technicians) is not saved in the backup file.

To perform the backup procedure, follow the steps below:

**Standard SPM** [F2]→Select GOTO FLOPPY or GOTO HARD DISK→[Enter ←]→ Specify default filename or Make new file name→[Enter ←]→[C] to continue or [Esc] to abort→[Esc] to abort or [Enter ←] to return to the Standard SPM Main menu

**WinSPM**

1. From the WinSPM Main window Outlook bar, select **Tools**.

2. From the Outlook bar, click the **Backup** icon.

   *A selection dialog box displays.*
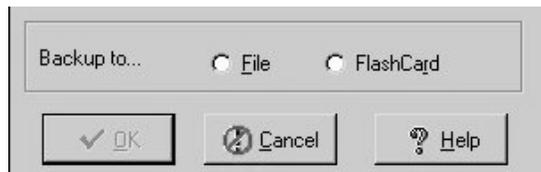
   

3. Select the File option.

4. Click **Ok**.

*The Save dialog box displays.*
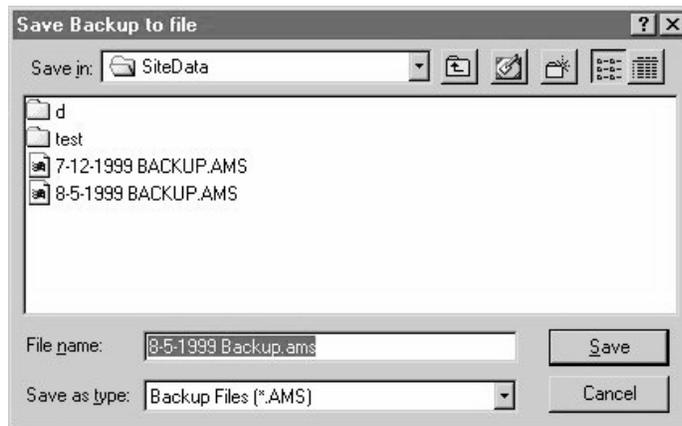


5.  Enter the name and location of the file to be saved.

6.  Click **Save**.

    *The progress dialog box displays.*
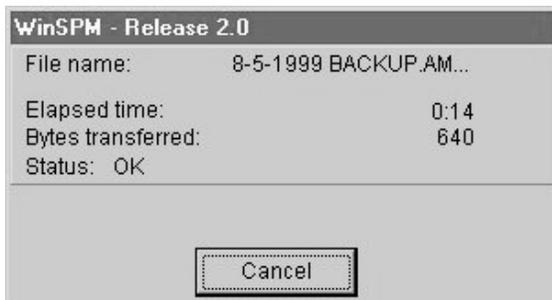


7.  Click **Cancel** to exit.

## Boards

The Boards option allows qualified service personnel to add a board to the next available slot. The system must be idle to use this option. This option is not available from the system programming console.

The Boards option is also available in Surrogate mode. In Surrogate mode, you can assign trunk and extension modules (boards) to slots, even though the boards have not actually been installed. This type of board is referred to as a "phantom" or "null" board.

You cannot use the Boards option to change an actual board type. All boards assigned with the Boards option, including phantom boards, are cleared (unassigned) if you perform a board renumber (System→Board Renum).

■ You must assign phantom boards to higher slot numbers than those you assign to any real boards. If you assign a phantom board to a lower slot number than a real board, the control unit does not recognize the real board or boards that follow the phantom board.

■ If you remove a board but do not replace it, and then perform a board renumber, the control unit will not recognize any boards that follow the empty slot. You must reseat all of the boards to fill the empty slot before you perform the board renumber.

The Inspect function (PgDn) lets you see which modules have been assigned to slots on the control unit. Note that both phantom boards and real boards display if you use the Inspect feature. Table 2-3 shows the type of boards that you can select. To see only real board assignments, you must print the System Information report: System→More→Print→SysSet-up.

**Table 2-3. Board Types**

| Board Type | Description |
| --- | --- |
| 024TDL | 24 digital extension jacks with 8 Touch-Tone Receivers |
| 016MLX | 16 MLX extension jacks (32 endpoints); upgradable with PCMCIA card |
| 008MLX | 8 MLX extension jacks (16 endpoints) |
| 016ETR | 16 ETR extension jacks with 4 Touch-Tone Receivers |
| 016TRR | 16 tip/ring extension jacks with 4 Touch-Tone Receivers |
| MsgOPT | 008 OPT - 8 tip/ring extension jacks with 2 Touch-Tone Receivers<br><br>or<br><br>MERLIN Messaging - 7 internal tip/ring extension jacks with 2 Touch-Tone Receivers; MERLIN Messaging System resides on this module |
| 100E | 32 channels ("virtual" lines/trunks); upgradable with PCMCIA card |
| 800DID | 8 DID line jacks |
| 800LTD<br><br>*Reviewers: What is the designation here?* | 8 loop-start line jacks with dial tone detection and Call Progress Tone detection. |
| MFC06 | 6 Multifrequency Compelled Register Signaling generators/receivers |

Follow the steps below to assign modules:

1. At the Standard SPM Mode Main menu, click ⌜F3⌝ to select `Boards`.

```
        SPM Main Menu
Menu: Select Function

Sys Program      Maintenance

Backup           Restore

Boards           Pass-Thru

Print Opts       Password

Monitor          Language
```

2. Click the function key that corresponds to the module you want to select.

```
Boards:          >

Make a selection

412LUP           016ETR

024UPO           016TTR

016MLX           MsgOPT

008MLX           100D

Back             800BRI
```

3. If the module you want to assign is not shown on the first screen of the Boards menu, click ⌜PgUp⌝ to display the next menu screen.

```
Boards:

Make a selection

408GLM           400E&M

100R

800DID

800LID

Back
```

4. Type the control unit slot number (`01` through `17`) in which the module is to be installed.

```
module name

Enter slot numbers

(01−17)



                 Delete

Backspace        Next

Back             Enter
```

`module name` = option selected in Step 2

5. Assign or remove the module from the slot entered in the previous Step.

| | |
|---|---|
| module name | |
| Enter slot numbers | |
| (01–17) | |
| | |
| nn | |
| | Delete |
| Backspace | Next |
| Back | Enter |

`module name` = option selected in Step 2

`nn` = slot entered in Step 5 (second digit will not display.

- To remove the module type from the specified slot number, click F8 (Delete). The Boards menu reappears.

- To assign the module type to the specified slot number and assign that same module type to another slot, click F9 (Next).

- To assign the module type to the specified slot number and assign a different module type to another slot, click F10 (Enter).

- To terminate the procedure and assign a different module, click F5 (Back) and repeat Steps 2 through 4.

- To view types of modules assigned to all slots, click PgDn (Inspect).

6. To save your entry, click F5 (Back).

The programming session terminates and the system restarts.

## Browse

The Browse option allows you to browse through reports and notes saved in WinSPM.

**Standard SPM**  Ctrl + F8 →Select hard disk or floppy→F10→Select a Report→ F10 → Esc to Exit

To view the next page of a report, click PgDn.

To view the previous page of a report, click PgUp.

To return to the beginning of a report, click Home.

**WinSPM**

1. From the WinSPM Main window Outlook bar, select **View**.

2. From the Outlook bar, click the **Browse Notes & Reports** icon.

*The Browse Notes & Reports dialog box displays.*
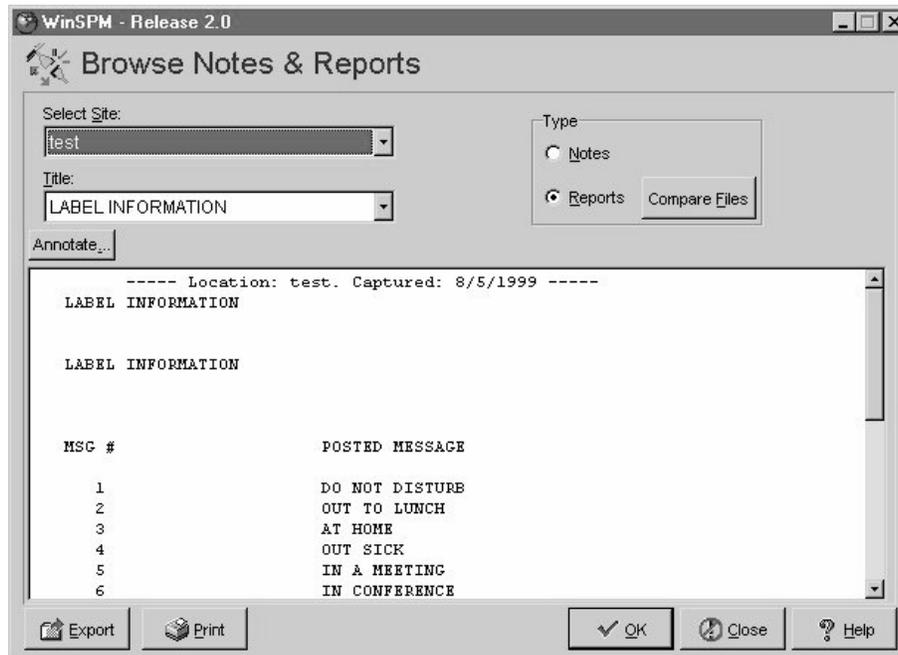


3.  From the Type field, select whether you want to view reports or notes.

4.  From the drop-down list, select the report/notes you want to view.

5.  Click **Print** to print the report to your default printer.

    or

    Click **Export**.

    *The Save dialog box displays.*
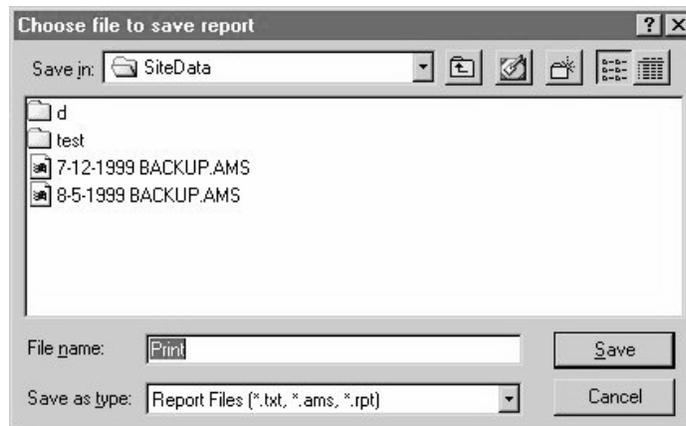


6.  Enter the name and location of the file to be saved.

7.  Click **Save**.

8.  Click **Close** to exit the Browse Notes and Reports dialog box.

## Language

A Language attribute in WinSPM specifies whether WinSPM menus, pop-up windows, and other messages are presented in U.S. English, Canadian French, Latin American Spanish, and Brazilian Portuguese. A Second Language selection option affects messages from the control unit to WinSPM, and controls the display on the console simulation window for the duration of the session. These two language options operate independently of each other.

The following discussion refers to the console window language.

## Console Window Language

By default, the language used in the console simulation window is the language specified in the ams.cfg file; however, you can select a different language for this window for the duration of the current session.

To select a different language for the current session, follow the steps below:

1.  At the Standard SPM Mode Main menu, click F10 to select Language.

| SPM Main Menu | |
|---|---|
| Menu: Select Function | |
| Sys Program | Maintenance |
| Backup | Restore |
| Boards | Pass-Thru |
| Print Opts | Password |
| Monitor | **Language** |

2.  Click the function key that corresponds to your language selection.

| Display Language |
|---|
| Make a Selection: |
| English |
| French |
| Spanish |
| Portuguese |
| Back |

The Display Language screen reappears with the language you selected.

3.  Click F5 (Back) to return to the Standard SPM Mode Main menu or select another language.

## Maintenance

⚠️ **CAUTION:**

*This option is for use by qualified technicians only. Maintenance procedures are provided in the documentation for qualified technicians.*

⚠️ **CAUTION:**

*This is a password-protected option and is for use by your technical support organization only.*

## Pass-Thru

The Pass-Thru option is not used with MERLIN MAGIX Integrated System Release 1.0i.

## Password

The Password option is used by qualified service personnel to change the modem connection password. A password is always required to establish a connection with the built-in modem. The password always consists of seven characters. You can perform remote system programming only if you enter the password correctly. A default password is set at the factory. You must obtain this password from your system consultant (SC).

To change the modem connection password, follow the steps below:

1. At the Standard SPM Mode Main menu, click ⌷F9⌷ to select `Password`.

| SPM Main Menu | |
|---|---|
| Menu: Select Function | |
| Sys Program | Maintenance |
| Backup | Restore |
| Boards | Pass-Thru |
| Print Opts | **Password** |
| Monitor | Language |

2. Type the old (current) password. Do *not* press Enter⏎.

```
Password:
Enter Old Password



```

If you type the old password incorrectly, the bottom of the screen displays the message, Not Equal. Repeat Step 2.

If you fail to enter the password correctly after three attempts, the bottom of the screen displays the message Old Password in Use, and the procedure terminates. Press Enter⏎ to return to the Standard SPM Mode Main menu.

3. Type the new password (any seven characters). Do *not* press Enter⏎

```
Password
Enter New Password



```

⚠ **SECURITY ALERT:**

- *The password does not appear on the screen as you type it.*

- *Always use the longest length password allowed on the system.*

- *Passwords should consist of a random, non-repetitive, hard-to-guess sequence of characters.*

4. Type the new password again. Do not press Enter⏎.

```
Password
Enter New Password again




New Password in use
```

5. To return to the Standard SPM Mode Main menu, click F5 (Back).

## Print Options

The `Print Opts` option allows qualified service personnel to direct the output of system programming reports either to the PC (where you can save them, browse through them, or print them with the system programming Print option) or to the SMDR printer.

To direct the output of the system programming reports, follow the steps below:

1.  At the Standard SPM Mode Main menu, click `F4` to select `Print Opts`.

    | SPM Main Menu |  |
    | --- | --- |
    | Menu: Select Function |  |
    | Sys Program | Maintenance |
    | Backup | Restore |
    | Boards | Pass-Thru |
    | **Print Opts** | Password |
    | Monitor | Language |

2.  Select the target device for the reports.

    | Printer Options |
    | --- |
    | Make a selection |
    | SMDR Port |
    | PC Port |
    |  |
    |  |
    | Back |

3.  To return to the Standard SPM Mode Main menu, click `F5` (`Back`).

### SMDR Port Output

See "Printing System Reports," on page 3-163, for more information about the print procedure using the system console and the SMDR port.

### PC Port Output

See "Printing Reports," on page 2-45, for more information about the print procedure using WinSPM and the PC port.

## Restore

The Restore option allows qualified service personnel to load system programming from either a disk or from the hard disk into the processor module memory.

This procedure is used either to program a new system if a disk was created through surrogate mode programming, or to restore information (using a backup disk) lost through system failure. It is also part of the upgrade procedure.

### Considerations

Review the following items before you begin the restore procedure:

■    The system will be forced idle during a restore procedure.

■    You must have a backup file containing system programming before you use this procedure. See "Management Procedures'' on page 2-29.

■    Features that were not programmed when the backup file was created are reset to factory settings.

■    The data restored reflects the number of extensions and lines available on the system at the time the backup was created. The remaining extensions and lines are set to the factory settings that are initialized during a Restart (cold start).

■    Restore is terminated under the following conditions:

—    If fewer boards are listed on the backup disk than on the control unit.

—    If any real board is out of sequence with the boards listed on the backup disk.

—    If phantom boards are not listed last.

—    If the operating mode of the system being restored is Hybrid/PBX, but the control unit processor module has been modified to operate only in Key mode.

■    A successful restore is followed automatically by a Restart (cold start).

## ⚠ WARNING:

*An unsuccessful or terminated restore results in a System Erase (frigid start). All calls are dropped. The system configuration is erased. All system programming is lost and the system returns to the factory settings. If the restore is being done remotely, the connection is dropped immediately. If this happens, attempt to reconnect to the control unit and immediately perform another restore. If this is not successful, programming must be restored on site.*

**Standard SPM**    [F7]→Select Restore→Select hard disk or floppy→[F10]→ Select a file→[Enter ⏎]→[Ctrl][F5] to abort→[Enter ⏎]

**WinSPM**

1.    From the WinSPM Main window Outlook bar, select **Tools**.

2.    From the Outlook bar, click the **Restore** icon.

*A selection dialog box displays.*

| Restore from... | ○ File | ○ FlashCard |
|---|---|---|
| ✓ OK | ⊘ Cancel | ? Help |
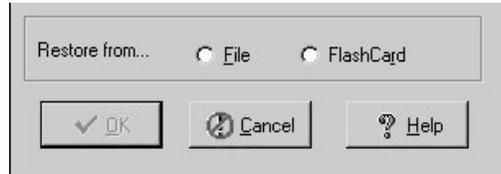
3. Select the File option.

4. Click **Ok**.

   *The Restore dialog box displays.*

   **Restore Backup from file**

   Look in: SiteData

   d
   test
   7-12-1999 BACKUP.AMS
   8-5-1999 BACKUP.AMS

   File: 8-5-1999 BACKUP.AMS
   Release: 128
   Size: 6
   Date: 8/5/1999
   Compressed: Yes

   File name: 8-5-1999 BACKUP.AMS    Open
   Files of type: Backup Files (*.AMS)    Cancel
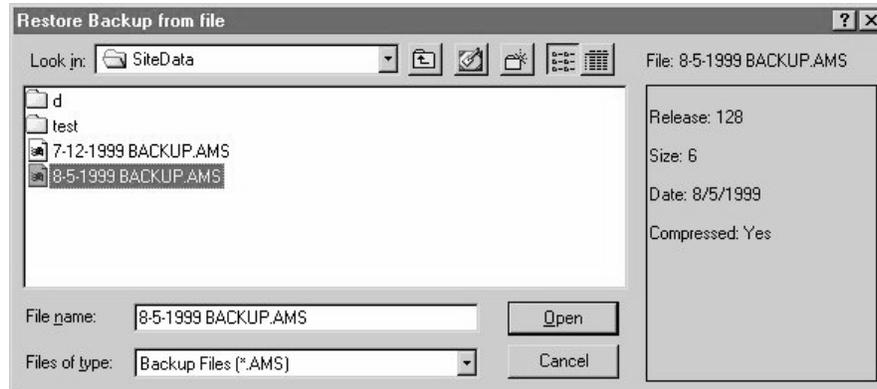
5. Enter the name and location of the file to be restored.

6. Click **Open**.

   *The progress dialog box displays.*

   **WinSPM - Release 2.0**

   | File name: | 1-1-1996 BACKUP.AM... |
   |---|---|
   | File size: | 91264 |
   | Remaining time: | 12:37 |
   | Bytes remaining: | 87168 |
   | Status: | OK |

   Progress:
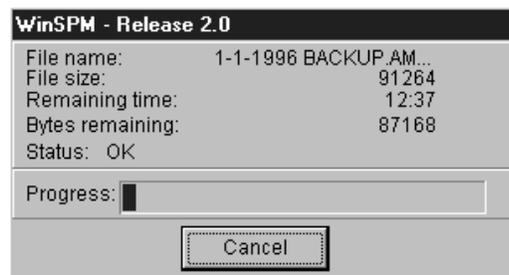
   Cancel

7. Click **Cancel** to exit.

# System Programming

A primary function of WinSPM is to provide a method for programming the system. The Sys Program option gives you access to all of the system programming features available from the system programming console.

## Basic Programming Information

To begin programming, you must perform one of the following to display the System Programming menu on the MLX-20L or 4424LD+ console, or on the PC:

On the console:                   Menu→Sys Program →Back
On the PC:                       Type spm →[Enter←]→Press any key→[F1]→[F5]

In most cases, you can click [F5] (Back) to exit from a screen without making any changes. Exceptions to this are noted as part of a procedure. When you complete a procedure and click [F5] (Back), you usually move up one screen in the menu hierarchy. Occasionally, when you click [F5] (Back), you return to the previous screen. In a few cases, clicking [F5] (Back) brings you back to the System Programming menu, where you can select another option to program or exit from system programming.

To complete a procedure and save the information you have programmed, click [F10] (Enter).

If you are programming a group of sequentially numbered extensions or trunks, you may have the option of clicking [F8] (Next). This saves your entry and automatically provides the number of the next extension or trunk in the sequence, thus saving you a couple of steps. If Next displays on the screen, you can use it with the current option.

In most cases, you will be at an intermediate step in the procedure you have just completed. At that point, you can select one of the options shown on the screen and continue programming, or you can click [F5] (Back) again. This usually takes you back to the System Programming menu. If not, you again can continue programming on the current screen or click [F5] (Back) again.

## Idle States

A few of the programming procedures can be started only when the entire system or some part of it, such as a trunk or an extension, is idle (not in use). Some procedures require that the trunk or extension be idle only at the instant of programming. Other procedures, which take longer, require the system, trunk, or extension to be forced to remain idle until programming is completed. These procedures wait for the system, trunk, or extension to become idle and then prevent the initiation of any new calls. This condition is called forced idle.

NOTE▶ If a procedure requires an idle condition, perform the programming outside of normal business hours.

If a procedure requires that the system be in an idle state and the system is busy when you begin, the screen shown below displays.

```
System Busy   Pls Wait


Dial Code:    nnnn
Slot/Port:    ss/pp




Exit
```

The screen changes to the appropriate programming screen when the system is no longer busy.

## System Forced Idle

When the entire system is forced idle, no calls can be made or received. The procedures listed below can be performed only when the entire system (every line and every extension) is idle:

- Select system mode

- Identify system operator positions

- Renumber boards

- Renumber system

- Restore system programming information

- Identify the Music-On-Hold jack

When the system is forced idle, the following occurs: multiline telephone users hear a reminder tone that indicates the telephone cannot be used; display telephone users see the message Wait: System Busy; single-line telephone users do not hear a dial tone.

## Line or Trunk Idle

Since these procedures require the line or trunk to be idle only at the instant of programming, the line or trunk is not forced idle. The following procedures can be performed only when the line or trunk being programmed is idle:

- Identify loudspeaker paging line jack

- Assign trunks to pools

- Specify incoming or outgoing DID/DIOD- or tie-trunk type

- Specify tie-trunk direction

- Specify tie-trunk E&M signal

***Reviewers: Should these tie-trunk bullets be removed since Release 1.0i does not support the 400EM module?***

## Extension Forced Idle

When an extension is forced idle, no calls can be made or received on that extension. The following procedures can be performed only when the extension being programmed is idle:

■  Assign call restrictions

■  Assign pool dial-out restrictions

■  Copy extension assignments

■  Assign lines, trunks, or pools to extensions

■  Assign labels to a personal directory

■  Use centralized telephone programming

When the extension is forced idle, the following occurs: multiline telephone users hear a reminder tone that indicates the telephone cannot be used; display telephone users see the message `Wait: System Busy`; single-line telephone users do not hear a dial tone.

## Forced Idle Reminder Tone

The forced idle reminder tone is a high-low "door-telephone" tone $\rightarrow$ 400 ms of 667 Hz tone followed by 400 ms of 571 Hz tone. The tone is provided under the following circumstances:

■  At the extension, to remind the user that the system or the extension is in the forced idle state.

■  At the programming console or at a PC running WinSPM, to remind the System Manager that the system (or at least one extension) is in the forced idle state because of administrative activity.

Forced idle reminder tones occur every 20 seconds. You can adjust the volume of these tones with the volume control on the system console or PC.

## 100E 100R Module Idle

The following procedures can be performed only when the 100E module is idle:

■  Specify board type

■  Specify frame format

■  Specify board signaling format

■  Specify board suppression format

■  Specify board facility compensation

## Accessing System Programming

Follow the steps below to access system programming.

1. At the Standard SPM Mode Main menu, click `F1` to select `Sys Program`.

```
         SPM Main Menu
Menu: Select Function

Sys Program       Maintenance

Backup            Restore

Boards            Pass-Thru

Print Opts        Password

Monitor           Language
```

2. Click the function key next to the option you want.

| | | | | | | |
|---|---|---|---|---|---|---|
| | System Programming:   > | | | | System Programming:   > | |
| | Make a selection | | | | Make a selection | |
| `F1` | System | Extensions | `F6` | `F1` | Labeling        Language | `F6` |
| `F2` | SysRenumber | Options | `F7` | `F2` | Data | |
| `F3` | Operator | Tables | `F8` | `F3` | Print | |
| `F4` | LinesTrunks | AuxEquip | `F9` | `F4` | Cntr-Prg | |
| `F5` | Back | NightSrvce | `F10` | `F5` | Exit | |

3. If the option you want does not appear on the first screen of the System Programming menu, click `PgUp` to display the second screen of the menu.

## Printing Reports

Use the following procedure to print system reports using WinSPM at the PC. The WinSPM Print Opts must be set to PC Port. See "Print Options" on page 2-39 for details about setting the printer output port.

1. At the second page of the System Programming menu, click `F3` to select `Print`.

```
System Programming:   >
Make a selection
Labeling
Data
Print
Cntr-Prg
Back
```

2. Click the function key that corresponds to the report to be printed.

```
Print (English):      >

Make a selection

All               Trunk Info

SysSet-up         T1 Info

Dial Plan         Pri Info

Labels            RmoteAccess

Back              Oper Info
```

3. Use one of the methods shown after this procedure to print the report or reports.

```
Please enter file name

to store print
(default is print.ams)


  Press Esc to Abort.
```

```
LPT1:

GOTOFLOPPY

MAKE NEW FILE PRINT.AMS
```

4. View the print status screen.

```
Print in Progress ...







Back
```

To interrupt printing and return to the Standard SPM Mode Main menu, press ⌷F5⌷.

## Print Hard Copy

To print a hardcopy of the report, use the arrow keys to highlight LPT1: and press ⌷Enter ←⌷.

## Print to Hard Disk

To print the reports to the hard disk if the print file does not exist, use the arrow keys to highlight MAKE NEW FILE and press ⌷Enter ←⌷.

■  To save to the default print filename (print.ams), press ⌷Enter ←⌷.

■  To save to the filename of your choice, type [filename] and press ⌷Enter ←⌷.

To print the reports to the hard disk if the print file already exists, use the arrow keys to highlight the filename and press ⌷Enter ←⌷.

**Print to Floppy Disk**

Use the arrow keys to highlight GOTO FLOPPY: and press Enter↵. Use one of the methods shown below.

■ To print the reports to a floppy disk if the print file does not exist, use the arrow keys to highlight MAKE NEW FILE and press Enter↵.

— To save to the default print filename (print.ams), press Enter↵.

— To save to the filename of your choice, type [filename] and press Enter↵.

■ To print the reports to a floppy disk if the print file already exists, use the arrow keys to highlight the filename and press Enter↵.

# Surrogate Mode Programming

Surrogate mode allows qualified service personnel to perform system programming at an offsite service location. The actual system hardware does not have to be installed — the programmer needs a power supply, carrier, processor, and a direct connection from the PC to the processor module. By following a customer's set of completed planning forms, the system can be programmed as if the appropriate modules, trunks, telephones, and other communications equipment have been installed. When system programming is completed, a system backup is performed to save the information on disk. This backup disk is then taken to the new installation site and used with the Restore option to provide complete system programming for a new system.

# Programming Procedures

# 3

## Contents

# Programming Procedures

# 3

## Overview

This chapter contains all of the procedures required for programming each of the features and options that is available for the MERLIN MAGIX Integrated System.

Each of the procedures begins at the System Programming menu. Use one of the methods shown below to display the System Programming menu.

- At the console: Menu→Sys Program→Back

- At a PC with WinSPM using Standard SPM Mode, do the following:

  1. On your desktop, double-click the WinSPM icon. (Depending on options selected during installation, you might select WinSPM from your Start Menu or Lucent Solutions folder.)

  2. Enter your user name and password, then click OK. *The WinSPM main screen appears.*

  3. On the toolbar on the left side of the WinSPM main screen, click the Connect button. *The Connection Selection screen appears.*

  4. From the Connection Selection screen, click the site name for the site you want to connect to.

  5. Click the Connection Type for the session, then click OK.

  6. On the toolbar on the left side of the WinSPM main screen, click the Standard SPM icon. *The system programming console appears in the emulation window.*

  7. Click `F1`, then `F5`.

Before you begin any of the procedures in this chapter, you should read and understand all of the information presented in Chapter 1, "Programming Basics."

# Basic System Operating Conditions

The procedures in this section are all related to the system, rather than to the operation of telephones, operator positions, lines, or trunks. These are operating conditions that must be set only once—when the system is new or when you reset the factory settings.

**NOTE▶** You must reset the system time when Daylight Savings Time begins and ends.

This section contains the following programming procedures:

- System Restart
- System Programming Position Assignment
- System Language
- Board Renumbering
- Mode of Operation
- Automatic Maintenance Busy
- System Date
- System Time
- Rotary Break Timer
- Special Numbers Table
- Digits Prepended to Special Numbers
- Match Delay Timer

## System Restart

⚠️ **CAUTION:**

*This procedure is to be performed by qualified support personnel only.*

Use this procedure to perform a System Restart (cold start). All calls are dropped when you perform this procedure. Existing system programming is saved. Telephones with the Extension Status feature may lose Toll Restrictions as a result of a System Restart.

### Summary: System Restart

| | |
|---|---|
| **Programmable by** | Qualified support personnel |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | Not applicable |

| Factory Setting | None |
|---|---|
| Valid Entries | None |
| Inspect | No |
| Copy Option | No |
| Console Procedure | System→Restart→Yes |
| PC Procedure | F1 → F1 → F1 |

## System Programming Position Assignment

Use this procedure to reassign the extension used for system programming. This extension should not be the same extension used for the operator position. The system programming position can be reassigned only to one of the first five extension jacks on the first TDL Module if you are using a 4424LD+ telephone, or the first MLX Module if you are using a MLX-20L telephone. Only one system programming console is allowed per system.

If you are programming on the 4424LD+ or MLX-20L console, be aware of the following:

■ The console must be connected to the extension currently assigned for system programming.

■ As soon as you change the system programming extension, the system programming session is terminated. To proceed with system programming, you must connect the system programming console to the newly assigned extension and enter system programming again.

### Summary: System Programming Position Assignment

| Programmable by | System Manager |
|---|---|
| Mode | All |
| Idle Condition | Not required |
| Planning Form | 1, System Planning |
| Factory Setting | First extension jack on the first TDL module if you are using a 4424LD+ telephone, or the MLX module if you are using a MLX-20L telephone (also set as an operator position) |
| Valid Entries | Extension number of one of the first five extension jacks on the first TDL or MLX module |
| Inspect | No |
| Copy Option | No |
| Console Procedure | System→SProg Port→Drop→Dial ext. no.→ Enter→Back |
| PC Procedure | F1 → F2 → Alt +P→Type ext. no.→F10 → F5 |

## System Language

Your system offers you a choice of four languages (U.S. English, Canadian French, Latin American Spanish, and Brazilian Portuguese) for the following options:

- **System Language.** For system programming.

- **Station Message Detail Recording (SMDR) Reports.** See "SMDR Language" on page 3-123.

- **Print Reports**. See "Report Language" on page 3-159.

- **Extensions**. See "Optional Extension Features" on page 3-75.

Use this procedure to set the system language. See the sections listed above to set a different language for SMDR reports and print reports, as well as for 4400-Series or MLX display telephones.

### Summary: System Language

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 1, System Planning |
| **Factory Setting** | U.S. English |
| **Valid Entries** | U.S. English, Canadian French, Latin American Spanish, Brazilian Portuguese |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | More→Language→SystemLang→Yes→<br>Select a language (English, French, Spanish or Portuguese)→Enter |
| **PC Procedure** | PgUp → F6 → F1 → F3 →Select a language (English, French, Spanish, or Portuguese)→F10 |

## Board Renumbering

⚠ **CAUTION:**
  *This procedure is to be performed by qualified support personnel only.*

Use this procedure to renumber boards that have already been installed. This procedure restarts the system (system programming is not lost). Note that this is not the same procedure used with the Boards option, which is available to qualified service personnel with WinSPM only.

Board Renumbering is a system programming procedure that is required only when an existing module is replaced by a different type of module. When a Board Renumbering is performed, the system reassigns the logical ID numbers to the extension and line ports sequentially from left to right in the control unit and from bottom to top of each module.

## Summary: Board Renumbering

| | |
|---|---|
| **Programmable by** | Qualified support personnel only |
| **Mode** | All |
| **Idle Condition** | System idle |
| **Planning Form** | Not applicable |
| **Factory Setting** | None |
| **Valid Entries** | Not applicable |
| **Inspect** | Not applicable |
| **Copy Option** | Not applicable |
| **Console Procedure** | System→Board Renum→Yes |
| **PC Procedure** | F1 → F4 → F2 |

## Mode of Operation

The system mode—Key, or Hybrid/PBX—determines how the system operates and directly affects the following operations:

■   How lines and/or trunks are provided to users

■   Types of operator consoles allowed

■   Features available

Changing this option causes a system restart and terminates the programming session. You must enter system programming again to program other features.

**NOTES** ■ The Behind Switch mode of operation is shown on the Select Mode screen but is not supported in MERLIN MAGIX Integrated System Release 1.0i.

■ The Hybrid/PBX option is not available if the control unit processor module has been modified to operate in Permanent Key mode only. See the *Feature Reference* for more information.

The following options cannot be programmed for Key systems:

■   Automatic Route Selection (ARS)

■   Pools

■   Queued Call Consoles (QCCs) and associated features

■ Direct Inward Dialing (DID) or Direct Inward or Direct Outward Dialing (DIOD) Trunks

■ System Access buttons

## Summary: Mode of Operation

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | System idle |
| **Planning Form** | 1, System Planning |
| **Factory Setting** | Hybrid/PBX |
| **Valid Entries** | Key, Hybrid/PBX |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | System→Mode→Select mode (Key or Hybrid/PBX)→Enter |
| **PC Procedure** | F1 → F3 →Select mode (Key or Hybrid/PBX)→F10 |

## Automatic Maintenance Busy

Automatic Maintenance Busy allows the system to take a malfunctioning trunk out of service for outgoing calls (incoming calls are never blocked). This prevents faulty outside facilities from causing disruptions in outgoing calling patterns.

For optimal performance, enable Automatic Maintenance Busy for Hybrid/PBX systems with pooled trunks.

**NOTE** No more than half of the trunks in a trunk pool are allowed to be placed in the Maintenance Busy state at one time, unless the central office has failed to disconnect a trunk (which prevents anyone from using that trunk) or an entire trunk module is manually taken out of use (a Maintenance-Busy state deliberately caused by the user).

## Summary: Automatic Maintenance Busy

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 1, System Planning |
| **Factory Setting** | Disabled |
| **Valid Entries** | Enabled, Disabled |
| **Inspect** | No |

| | |
|---|---|
| **Copy Option** | No |
| **Console Procedure** | To disable Automatic Maintenance Busy:<br>`System→MaintenBusy→Disable→Enter→`<br>`Back` |
| | To enable Automatic Maintenance Busy<br>excluding tie trunks:<br>`System→MaintenBusy→Enable→Enter→Back` |
| | To enable/disable with tie trunks:<br>`System→MaintenBusy→Enable→Enter→`<br>`Enable or Disable→Enter→Back` |
| **PC Procedure** | To disable Automatic Maintenance Busy:<br>[F1]→[F6]→[F2]→[F10]→[F5] |
| | To enable Automatic Maintenance Busy excluding tie trunks:<br>[F1]→[F6]→[F1]→[F10]→[F5] |
| | To enable/disable with tie trunks:<br>[F1]→[F6]→[F1]→[F10]→`Enable or Disable`→[F10]→[F5] |

## Set System Date

The System Date feature allows you to set the month, day, and year that appear on 4400-Series and MLX display telephones as well as on Station Message Detail Recording (SMDR) reports.

**NOTE▶** If you plan to use the SMDR feature, make sure the current date is set.

### Summary: Set System Date

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 1, System Planning |
| **Factory Setting** | 01-01-00 |
| **Valid Entries** | Month: 01 to 12<br>Day: 01 to 31<br>Year: 00 to 99 |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | `System→Date→Drop→Dial current date` (Month: 01–12;<br>Day: 01–31; Year: 00–99)→`Enter→Back` |

| | |
|---|---|
| **PC Procedure** | $\boxed{F1} \rightarrow \boxed{F7} \rightarrow \boxed{Alt} + \boxed{P} \rightarrow$ Type current date (Month: 01–12; Day: 01–31; Year: 00–99)$\rightarrow \boxed{F10} \rightarrow \boxed{F5}$ |

## Set System Time

**NOTES** ■ The System Time feature allows you to set the time that appears on 4400-Series, MLX, and ETR display telephones and on SMDR reports.

■ If you are planning to use the SMDR feature, make sure the system time is set accurately. If you change the system time while the system is in Night Service mode, Night Service is deactivated and must be manually reactivated. If you have installed applications such as MERLIN Messaging or Intuity AUDIX, you may need to set the time in the applications software whenever you reset the system time.

### Summary: Set System Time

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not Required |
| **Planning Form** | 1, System Planning |
| **Factory Setting** | 0000 |
| **Valid Entries** | 0000 to 2359 |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | System$\rightarrow$Time$\rightarrow$Drop$\rightarrow$Dial current time (0000–2359)$\rightarrow$ Enter$\rightarrow$Back |
| **PC Procedure** | $\boxed{F1} \rightarrow \boxed{F8} \rightarrow \boxed{Alt} + \boxed{P} \rightarrow$ Type current time (0000–2359)$\rightarrow \boxed{F10} \rightarrow \boxed{F5}$ |

## Rotary Break Timer

The Rotary Break Timer increases the compatibility between the MERLIN MAGIX system and the local exchange by improving the timing signaling when digits are outpulsed over analog loop-start central office lines connected to an 800 LS/CPTD module. This module supports up to eight loop-start lines and provides Dial Tone Detection and Call Progress Tone Detection.

**NOTE** See for information on programming the digital E1 Rotary Break Timer.

The MERLIN MAGIX system uses the Rotary Break Timer value to calculate automatically the Make Timer value (Make Timer value = 100 − Break Timer value).

**Summary: Rotary Break Timer**

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Factory Setting** | 60 ms |
| **Valid Entries** | 60-80 ms in 5 ms increments |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | System→CO Interface→Break Timer→Drop→Dial duration for Rotary Break Timer (50-80 ms in increments of 5 seconds)→ Enter→Back→Back |
| **PC Procedure** | F1 →F10 → F1 → Alt + P →Type duration for Rotary Break Timer (50-80 ms in increments of 5 seconds)→F10 → F5 → F5 |

## Special Numbers Table

The Special Numbers Table is a programmable table of telephone numbers that is separate from ARS and can be accessed in the Key and Hybrid/PBX mode. These "special numbers" include emergency numbers, directory assistance, and repair service numbers. Because these special numbers vary in different countries, the table of special numbers is fully programmable. (Release 1.0 of the MERLIN MAGIX system contained a fixed Special Numbers Table as part of the Automatic Route Selection feature.)

The facility restriction level (FRL) of the Special Numbers Table is fixed at 0, thereby allowing all users to dial any number programmed in this table. Use Disallowed Lists to deny access to certain non-emergency numbers (for example, directory assistance) contained in this table. Give users unrestricted toll access so they may dial emergency numbers that begin with "1" or "0."

The Special Numbers Table may consist of 1 to 20 entries, with 1 to 6 digits per entry.

**Summary: Special Numbers Table**

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Factory Setting** | Not Applicable |
| **Valid Entries** | Not Applicable |
| **Inspect** | Yes |
| **Copy Option** | No |

| | |
|---|---|
| **Console Procedure** | System→Tables→SpeclNumbers→Table Input→Dial entry number (1-20)→Enter→Drop→Dial 6-digit special number→Enter→Back→Back |
| **PC Procedure** | F1 → F8 → F8 → F1 → F5 →Type entry number (1-20)→ F10 → Alt + P →Type 6-digit special number→ F10 → F5 → F5 |

## Special Numbers Other Digits

Use this procedure to specify other (extra) digits that the system must dial before it dials out a number in the Special Numbers Table.

A maximum of 20 digits can be added in any combination of the digits 0 through 9.

Special characters such as switchhook flash, Stop, and # cannot be included as extra digits. Pause is allowed in every position but the first.

### Summary: Special Numbers Other Digits

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Factory Setting** | 0 |
| **Valid Entries** | Up to 20 digits (any combination of 0 to 9) |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | System→Tables→SpeclNumbers→Other Digit→Drop→Dial digits to be added (up to 20 digits; any combination of 0–9)→Enter→Back→Back |
| **PC Procedure** | F1 → F8 → F8 → F2 → Alt + P →Type digits to be added (up to 20 digits; any combination of 0–9)→ F10 → F5 → F5 |

## Match Delay Timer

To provide faster connection to special numbers dialed, Release 1.0i of the MERLIN MAGIX system contains a Match Delay Timer. The Match Delay Timer resets the inter-digit timer to the value of the Match Delay Timer when a match is found between digits already dialed and numbers in the Special Numbers Table. For example, the standard emergency number in Mexico is 060. As soon as someone dials 060 and a match is made between the dialed number and the number in the Special Numbers Table, the Match Delay Timer cuts through so that the digits can be sent quickly to the central office, instead of waiting for the inter-digit timer's delay.

Set the value for the Match Delay Timer to be less than the value for the Inter-Digit Timer.

Consider the parameters for your specific central office when you program the Match Delay Timer.

The Match Delay Timer value ranges from 1 to 90 seconds.

**Summary: Match Delay Timer**

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Factory Setting** | 5 seconds |
| **Valid Entries** | 1 to 90 seconds |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | System→Tables→SpeclNumbers→Match Delay→Drop→ Dial number of seconds for Match Delay Timer (1-90)→Enter→ Back→Back |
| **PC Procedure** | F1 → F8 → F8 → F2 → Alt + P →Type number of seconds for Match Delay Timer (1-90)→ F10 → F5 → F5 |

## System Renumbering

The procedures in this section are used to assign the 2-digit, 3-digit, and Set-Up-Space numbering plans for the local MERLIN MAGIX Integrated System.

Do not attempt to assign a numbering plan without Planning Forms 2a, System Numbering: Extension Jacks; 2b, System Numbering: Digital Adjuncts; and 2d, System Numbering: Special Renumbers. Form 6a, Optional Operator Features, is needed to assign a DSS Page button. This section contains the following programming procedures:

■  Select System Numbering Plan

■  Single Renumbering

■  Block Renumbering

■  Direct Station Selector (DSS) Page Button Assignment

For the local system, you then select only one of the numbering plans (2-digit numbering, 3-digit numbering, or Set-Up-Space numbering). In addition, you may need to perform single and/or block renumbering. You do not need to assign DSS Page buttons unless the system programming console or one of the operator positions is connected to a DSS. No matter which procedures you need to perform, assign the numbering plan first, then do single and/or block renumbering, and finally, assign DSS Page buttons (if necessary).

Use the single renumbering procedure whenever the extension numbers you are changing *from or to are not sequential*.

Block renumbering is quicker, but you can use block renumbering only when the extension numbers you are changing *from and to are sequential*.

When trunk or extension modules are removed from the control unit, the remaining modules must be rearranged so that no empty slots remain. The system does not acknowledge any modules installed after an empty slot; therefore, if the system is renumbered, extensions are not assigned to extension jacks after the empty slots.

NOTE▶ Figure 3-1, Figure 3-2, and Figure 3-3 show the factory settings in the gray spaces. Extensions can be renumbered to any number shown in the white spaces.

| 0 | Operator Console (not flexible) 0 | | | | |
|---|---|---|---|---|---|
| 1 | Extensions 10–19 | | | | |
| 2 | Extensions 20–29 | | | | |
| 3 | Extensions 30–39 | | | | |
| 4 | Extensions 40–49 | | | | |
| 5 | Extensions 50–59 | | | | |
| 6 | Extensions | Extra Extensions | | Extra 4400-Series Adjuncts/ MFMs/ Terminal Adapters | |
| | 60–66 | 6700–6842 | 6843–6849 | 6850–6992 | 6993–6999 |
| 7 | Main Pool | Adjuncts | | Calling Groups | Paging Groups |
| | 70 | 710–766 | 767– 769 | 770–791,7920–7929 | 793–799 |
| 8 | | Lines/Trunks | | Park | | Pools |
| | 800[1] | 801–880 | | 881–888 | 889[2] | 890–899 |
| 9 | ARS Access (Hybrid/PBX mode)/Idle Line Access 9 | | | | |

1   LDN (QCC Queue)

2   Remote Access

**Figure 3-1. 2-Digit Numbering**

| 0 | Operator Console (not flexible) 0 | | | | |
|---|---|---|---|---|---|
| 1 | Extensions 100–199 | | | | |
| 2 | Extensions 200–299 | | | | |
| 3 | 4400-Series/MLX Adjuncts 300–399 | | | | |
| 4 | 4400-Series/MLX Adjuncts 400–499 | | | | |
| 5 | 500–599 | | | | |
| 6 | 600–699 | | | | |
| 7 | Main Pool 70 | 71–76 | Calling Groups 770–791, 7920–7929 | | Paging Groups 793–799 |
| 8 | 800[1] | Lines/Trunks 801–880 | Park 881–888 | 889[2] | Pools 890–899 |
| 9 | ARS Access (Hybrid/PBX mode)/Idle Line Access 9 | | | | |

1   LDN (QCC Queue)

2   Remote Access

**Figure 3-2. 3-Digit Numbering**

| 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 | Extensions 7100–7299 | 4400-Series/ MLX Adjuncts 7300–7499 | 7500–7699 | Calling Groups 770–791, 7920–7929 | Paging Groups 793–799 |
| 8 | 800[1] | Lines/Trunks 801–880 | | Park 881–888 | 889[2] | Pools 890–899 |
| 9 | ARS Access (Hybrid/PBX mode)/Idle Line Access 9 | | | | | |

1   LDN (QCC Queue)

2   Remote Access

**Figure 3-3. Set-Up-Space Numbering**

## Select System Numbering Plan

### ⚠ WARNING:

*To avoid possible loss of system programming information, renumber the system before you program the rest of the options described in this chapter.*

The three available local system numbering plans listed below appear on System Planning Form 2a.

■ **Two-Digit**. This plan is for systems with fewer than 50 extensions and no plans to exceed that number in the foreseeable future. Each of the first 58 extension jacks is assigned a 2-digit extension number, beginning with 10 and ending with 67. Any remaining extensions are assigned 4-digit numbers, starting with 6700 and ending with 6842.

■ **Three-Digit**. This plan is for systems with 50 or more extensions or plans to grow to that number in the foreseeable future. All extensions are assigned a 3-digit number, starting with 100 and ending with 299.

■ **Set-Up-Space**. This plan is for systems with a need to customize extension numbers or use extension numbers of varying lengths (one to four digits). All extensions are assigned 4-digit numbers in the 7000 range. Extension numbers 1000–6999 are also available for use when you renumber.

In all three local numbering plans, the system assigns 3-digit extension numbers to pools (Hybrid/ PBX only), Calling Groups, Paging Groups, Remote Access codes, the Listed Directory Number, park codes, and Idle Line Access (Key only). In addition, the system assigns 9 for Automatic Route Selection (Hybrid/PBX only) and Idle Line Access (Key only). Zero (0) represents a special extension number—actually a fixed dial code—for the primary operator or QCC queue. Any extension number except 0 can be renumbered.

Extension numbers can be composed of any combination of digits; however, no number can begin with 0. Trunk numbers (801–880) are considered to be extensions and can be renumbered.

The system does not provide a message to indicate a successful renumber when either the 2-digit or 3-digit numbering plan is selected. For the Set-Up-Space numbering plan, the system provides a message indicating that all extensions are in the 7000 range.

### ⚠ CAUTION:

*Select* Back *on the console, or click* F5 *on the PC display, when you have finished selecting the numbering plan. If you press Exit (4424LD+ console) or Home (MLX-20L console), extensions may remain in the forced idle condition (indicated when the LED next to each DSS button is on). To restore extensions to their normal operating state, restart the system.*

**Summary: Select System Numbering Plan**

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | System idle |
| **Planning Form** | 2a, System Numbering: Extension Jacks |
| **Factory Setting** | 2-Digit |
| **Valid Entries** | 2-Digit, 3-Digit, SetUp-Space |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | SysRenumber→Default Numbering→ Select numbering plan (2-Digit, 3-Digit, SetUp-Space)→Back→Back |
| **PC Procedure** | [F2]→[F1]→Select numbering plan (2-Digit, 3-Digit, SetUp-Space)→ [F5]→[F5] |

## Single Renumbering

Use this procedure to assign a specified extension number to a telephone, accessory, line, pool (Hybrid/PBX only), Calling Group, Paging Group, or Listed Directory Number. Single renumbering is also used for Remote Access, Park, Idle Line Access (Key only), and Automatic Route Selection (Hybrid/PBX only).

### ⚠ CAUTION:

*Select* Back *on the console, or click* [F5] *on the PC display, after renumbering extensions. If you press Exit (4424LD+ console) or Home (MLX-20L console), extensions may remain in the forced idle condition (indicated when the LED next to each DSS button is on). To restore extensions to their normal operating state, restart the system.*

When required, this procedure should be performed immediately following the selection of a system numbering plan.

**Summary: Single Renumbering**

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | System idle |
| **Planning Form** | 2a, System Numbering: Extension Jacks<br>2b, System Numbering: Digital Adjuncts<br>2d, System Numbering: Special Renumbers |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Old and new extension numbers |

System Renumbering

| | |
|---|---|
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | SysRenumber→Single→Select item→Dial old ext. no.→ Enter→Dial new ext. no.→Enter→Back→Back |
| **PC Procedure** | F2 → F2 →Select item→Type old ext. no.→F10 → Type new ext. no.→F10 → F5 → F5 |

## Block Renumbering

Use this procedure to assign extension numbers to a group of extensions, accessories, or lines. Both the original numbers and the numbers they are being changed to must be sequentially numbered.

When required, this procedure should be performed immediately following the selection of a system numbering plan.

⚠️**CAUTION:**
*Select* Back *on the console, or click* F5 *on the PC display, when you have finished renumbering extensions. If you press Exit (4424LD+ console) or Home (MLX-20L console), extensions may remain in the forced idle condition (indicated when the LED next to each DSS button is on). To restore extensions to their normal operating state, restart the system.*

### Summary: Block Renumbering

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | System idle |
| **Planning Form** | 2a, System Numbering: Extension Jacks<br>2b, System Numbering: Digital Adjuncts<br>2d, System Numbering: Special Renumbers |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Old and new extension numbers |
| **Inspect** | Yes |
| **Copy Option** | Yes |
| **Console Procedure** | SysRenumber→Block→Select type of group→ Dial no. of first group member→Enter→ Dial no. of last group member→Enter→Dial new beginning no.→ Enter→Back→Back→Back |
| **PC Procedure** | F2 → F3 →Select type of group→Type no. of first group member→F10 →Type no. of last group member →F10 → Type new beginning no.→F10 → F5 → F5 → F5 |

# Direct Station Selector (DSS) Page Buttons

Use this procedure to set the three Page buttons on the DSS to correspond to the system numbering plan. This procedure assigns extension numbers to DSS buttons. The procedure is the same for MLX DSS and DSS 4450 when used with 4424LD+ and 4424D+ telephones. You cannot program individual buttons on a DSS; this is the only method for programming DSS buttons.

Page button assignment should be sequential. If only one DSS is attached, each Page button assignment sets the console for a range of 50 extension numbers: Page 1: 0 to 49; Page 2: 50 to 99; Page 3: 100 to 149.

If two DSSs are attached, each Page button assignment sets the console for a range of 100 extension numbers. If two DSSs are attached to the console, change the factory setting so that the difference between extension numbers assigned to the range is at least 100. For example, assign Page 1 to begin with extension 10, Page 2 to begin with extension 110, and Page 3 to begin with extension 210.

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

## ⚠ CAUTION:

*Select* `Back` *on the console, or click* `F5` *on the PC display, when you have finished this procedure. If you press Exit (4424LD+ console) or Home (MLX-20L console), extensions may remain in the forced idle condition (the LED next to each DSS button is on), and the system may have to be restarted.*

### Summary: Assign Direct Station Selector Page Buttons

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | Form 6a, Optional Operator Features |
| **Factory Setting** | Page 1=0; Page 2=50; Page 3=100 |
| **Valid Entries** | 1, 2, 3 |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | SysRenumber→Single→More→DSS Buttons→ Dial page no. (1–3)→Enter→Dial first ext. no.→ Enter→Back→ Back |
| **PC Procedure** | F2 → F2 →PgUp→ F1 →Type page no. (1–3)→F10→ Type first ext. no.→F10 → F5 → F5 |

# System Operator Positions

A system operator position, for a Queued Call Console (QCC) operator or a Direct-Line Console (DLC) operator, should be programmed before you program lines or trunks.

Use the following procedures to add an operator position or change an existing operator position.

The QCC operator position is available only for Hybrid/PBX systems. The DLC operator position is available in any mode and must be programmed if you have Call Management Systems connected to any operator extension jacks.

Table 3-1 shows the maximum number of operator positions allowed for any one system.

**Table 3-1.  Maximum Number of Operator Positions**

| Position Type | Type of Telephone | Maximum Positions |
|---|---|---|
| QCC | 4424LD+ | 4 |
| | MLX-20L | |
| DLC | 4424D+ | 8 |
| | 4424LD+ | |
| | MLX-20L | |
| | MLX-28D | |
| Total QCC + DLC | | 8 |

Any combination of operator positions can be assigned as long as no more than four operator positions are QCCs and the total number of operator positions does not exceed eight.

If you want to designate a new operator position and the system already has the maximum number of operator positions, you must change an existing operator position to a nonoperator position before you designate a new operator position.

NOTE▶ When you change an extension to an operator position, or vice versa, the system returns the port (extension jack) type of that extension to the factory setting. You must reprogram lines and any features for that telephone or console. You may also need to change any attached accessory equipment and optional features.

## Primary Operator Positions

The primary operator position is the extension to which your call is directed when 0 is dialed on a System Access button. The first extension jack on the first TDL or MLX module in your system is assigned as the primary operator position. If your system has QCC operator positions, this position must be changed from the factory setting (DLC) to a QCC operator position. (The primary operator extension cannot be changed from the first extension on the first TDL or MLX module.)

## QCC System Operator Positions

This procedure applies to Hybrid/PBX systems only. Note that both QCC and DLC operator positions can be assigned with this procedure, although its primary purpose is to assign QCC operator positions.

QCC operators serve as central answering positions for all incoming calls. Incoming calls are held in the QCC queue and are directed to each QCC operator in a prioritized sequence. The calls are received one at a time, regardless of the number of incoming calls to the system.

Additional QCC operator positions can be assigned only to the first and fifth extension jacks of the 008 MLX module. You can also assign QCC operator positions to the first, fifth, thirteenth, and seventeenth extension jacks of the 024 TDL modules or to the first, fifth, ninth, and thirteenth extension jacks of the 016 MLX modules. A maximum of four QCC operator positions can be assigned. Use this procedure to specify QCC operator positions that serve as central answering positions for all incoming calls.

**NOTE** If you want to add or remove QCC operator positions, the following conditions apply:

- If other QCC positions remain in your system, the primary QCC operator position cannot be removed.

- When QCC operator positions are added, the primary QCC operator position should be the first one added.

- If QCC operator positions are being removed, the primary QCC operator position must be the last one removed.

### Summary: QCC Operator Positions

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | System idle |
| **Planning Form** | 2a, System Numbering: Extension Jacks |
| **Factory Setting** | Type: DLC |

| | |
|---|---|
| **Valid Entries** | First or fifth extension jack on the 008 MLX module (maximum: two per module; four QCCs per system). First, fifth, thirteenth, or seventeenth extension jack on an 024 TDL module. First, fifth, ninth, or thirteenth extension jack on an 016 MLX module. |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | Operator→Positions→Queued Call→Dial ext. no.→ Enter or Delete→Store All |
| **PC Procedure** | F3 → F1 → F2 →Type ext. no.→F10 or F8 → F3 |

## DLC Operator Positions

DLC operator positions can be assigned to the first and fifth extension jacks on the first 008 MLX module with extension jacks. You also can assign DLC operator positions to the first, fifth, thirteenth, or seventeenth extension jacks on the 024 TDL module or to the first, fifth, ninth, and thirteenth extensions jacks on the 016 MLX modules. A maximum of eight DLC operator positions can be assigned. Any combination of operator positions can be assigned as long as there are no more than four QCC operator positions and no more than a total of eight operator positions.

Use this procedure to specify extensions that serve as central answering positions for all incoming calls or as Calling Group supervisor extensions. (You do not need to use this procedure in a Key system unless you have more than one DLC position.) For a new system, remove the factory-set DLC operator position assignment for any telephone not used as an operator position.

Lines and trunks are assigned to individual buttons.

### Summary: Identify or Remove DLC Operator Positions

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | System idle |
| **Planning Form** | 2a, System Numbering: Extension Jacks |
| **Factory Setting** | Type: DLC |
| **Valid Entries** | First or fifth extension jack on the 008 MLX module (maximum: two per module; eight DLCs per system). First, fifth, thirteenth, or seventeenth extension jack on an 024 TDL module First, fifth, ninth, or thirteenth extension jack on the 016 MLX module. |
| **Inspect** | Yes |
| **Copy Option** | No |

| **Console Procedure** | Operator→Positions→Direct Line→Dial ext. no.→ Enter or Delete→Store All |
|---|---|
| **PC Procedure** | F3 → F1 → F1 →Type ext. no.→F10 or F8 → F3 |

## Lines and Trunks

The procedures in this section are used to assign optional features to individual lines and trunks. The following optional features can be assigned:

- Outmode Signaling for Loop-Start Trunks

- Rotary Trunk Digit Transfer

- Disconnect Signaling Reliability

- Toll Type

- Hold Disconnect Interval

- Ring Disconnect Timer

- Dial Tone Detection Options

- Glare Guard

- Principal User for Personal Line

- QCC Queue Priority

- QCC Operator to Receive Calls

- Incoming Call Line Identification Delay

- Trunks to Pools Assignment

The Copy Options feature (described at the end of this section) allows you to copy several optional features from an idle trunk. This option eliminates the need to individually enter each feature.

A slot is the physical location of the individual module on the control unit. There is a maximum of 17 slots, which are numbered as follows:

- Basic carrier: slots 1 through 5

- First expansion carrier: slots 6 through 11

- Second expansion carrier: slots 12 through 17

A port is a line or trunk jack on the module. Individual modules support different numbers of ports. On any module, port 1 is the lowest physical jack position.

## Outmode Signaling for Loop-Start Trunks

Use this procedure to identify either touch-tone signaling or rotary-dial signaling for outgoing calls placed by using the specified loop-start trunk.

**NOTE▶** Since the factory setting is Touch-Tone, this procedure is not required if your system has only Touch-Tone lines/trunks.

### Summary: Outmode Signaling for Loop-Start Trunks

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Loop-Start: All |
| **Idle Condition** | Not required |
| **Planning Form** | 2c, System Numbering: Line/Trunk Jacks |
| **Factory Setting** | Touch-Tone |
| **Valid Entries** | Touch-Tone, Rotary |
| **Inspect** | No |
| **Copy Option** | Yes |
| **Console Procedure** | To program a single-line/trunk:<br>LinesTrunks→TT/LS Disc→Outmode→Select entry mode (Touch-Tone or rotary)→Dial no. of line/trunk→Enter or Delete→Back→Back→Back<br><br>To program a block of lines/trunks:<br>LinesTrunks→TT/LS Disc→OutMode→Select block of lines/trunks→Toggle LED On/Off→Enter or Delete→Back→Back→Back |
| **PC Procedure** | To program a single-line/trunk:<br>F4 → F3 → F1 → F6 (Touch-Tone or rotary)→Type no. of the line/trunk→F10 or F8 → F5 → F5 → F5<br><br>To program a block of lines/trunks:<br>F4 → F3 → F1 →Select block of lines/trunks→Toggle letter G On/Off→F10 or F8 → F5 → F5 → F5 |

## Rotary Trunk Digit Transfer

Use this procedure to designate whether dialed digits on rotary-dial lines/trunks are sent one by one as they are dialed (no delay), or are stored and sent when dialing is completed (delay). Contact your service provider for more information about the appropriate setting.

**Summary: Rotary Trunk Digit Transfer**

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | Form 8a, System Features |
| **Factory Setting** | No Delay |
| **Valid Entries** | Delay, No Delay |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Options→More→Rotary→Select option (Delay or No Delay)→Enter→Back |
| **PC Procedure** | F7 →PgUp→ F4 →Select option (Delay or No Delay)→F10→ F5 |

## Ringing Frequency

Use this procedure to program the ringing frequency on an 016 (T/R) module. Contact your service provider for more information about the appropriate setting.

**Summary: Ringing Frequency**

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | Form 8a, System Features |
| **Factory Setting** | 20 Hz |
| **Valid Entries** | 20 Hz, 25 Hz |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Options→More→Ringing Freq→Dial slot no. (1–17)→Select 20Hz or 25Hz→Enter→Back |
| **PC Procedure** | F7 →PgUp→ F8 →Type slot no. (1–17)→Select 20Hz or 25Hz→F10→ F5 |

## Second Dial Tone Timer

Use this procedure to program the second dial tone timer. The second dial tone timer sets a delay in providing a dial tone after a star code is dialed to obtain special services from the central office.

Lines and Trunks

See the *Feature Reference* for information about programming the second dial tone timer to prevent toll fraud.

## Summary: Second Dial Tone Timer

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 8a, System Features |
| **Factory Setting** | 0 ms |
| **Valid Entries** | 0–5,000 ms, in increments of 200 ms |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Options→More→SecDT→Drop→Dial second dial tone timer value (0–5000 ms, in increments of 200 ms)→Enter→Back |
| **PC Procedure** | F7 →PgUp→ F9 → Alt + P →Type second dial tone timer value (0–5000 ms, in increments of 200 ms)→F10 → F5 |

## Disconnect Signaling Reliability

Use this procedure to classify the disconnect signal sent by the central office on loop-start trunks as one of the following:

■   **Reliable**. Signal sent within a short time.

■   **Unreliable**. Signal may not be provided.

## ⚠ SECURITY ALERT:

*Toll fraud can occur if you have loop-start trunks with unreliable disconnect. In this situation, if someone calls you and you hang up, the central office could send dial tone before the caller hangs up, allowing the caller to place another call as if it originated at your company.*

The setting selected applies to all trunks in the system because trunks cannot be programmed individually. The reliable/unreliable setting does not apply to loop-start trunks emulated on a T1 facility. If you specify a reliable disconnect for trunks programmed with a short hold disconnect interval (see "Hold Disconnect Interval" on page 3-26), active calls, as well as trunks on hold, may be disconnected. For more information about reliable and unreliable disconnect and its implications, see the *Feature Reference*.

NOTE▶ Certain features (Remote Call Forwarding and Transfer to outside numbers) and applications (MERLIN Messaging System, Octel 100, and Intuity AUDIX) are not recommended with loop-start trunks. See "Hold Disconnect Interval" on page 3-26.

Lines and Trunks

## Summary: Disconnect Signaling Reliability

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 2c, System Numbering: Line/Trunk Jacks |
| **Factory Setting** | Unreliable |
| **Valid Entries** | Unreliable, Reliable |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | LinesTrunks→TT/LS Disc→LS Disconnect→ Select Yes or No→Enter→Back→Back |
| **PC Procedure** | F4 → F3 → F2 →Select Yes or No→F10→ F5 → F5 |

## Toll Type

Use this procedure to specify whether users have to dial a toll prefix (1 or 0) before dialing an area code and telephone number. (Your local telephone company should verify toll prefix requirements for each line/trunk.)

This setting is used by the system to classify calls as local or long distance, so that appropriate Toll Restrictions can be applied.

NOTE▶ This option applies only to loop-start trunks; it does not apply to tie trunks or DID trunks.

## Summary: Toll Type

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 2c, System Numbering: Line/Trunk Jacks |
| **Factory Setting** | Toll prefix required |
| **Valid Entries** | Required, Not required |
| **Inspect** | No |
| **Copy Option** | Yes |
| **Console Procedure** | To program a single-line/trunk:<br>LinesTrunks→Toll Type→Select entry mode→<br>Dial no. of the line/trunk→Enter or Delete→Back→Back→Back |

To program a block of lines/trunks:
LinesTrunks→Toll Type→Select block of lines/trunks→
Toggle LED On/Off→Enter or Delete→Back→Back→Back

**PC Procedure**

To program a single-line/trunk:
[F4]→[F10]→[F6]→Type no. of the line/trunk→[F10] or [F8]→
[F5]→[F5]→[F5]

To program a block of lines/trunks:
[F4]→[F10]→Select block of lines/trunk→Toggle letter G→On/Off→
Select Enter or Delete→[F5]→[F5]→[F5]

## Hold Disconnect Interval

Use this procedure to specify the number of milliseconds before a loop-start line/trunk is released when a caller on hold hangs up and abandons the call. This can be specified as either a long interval (450 ms) or a short interval (50 ms). The hold disconnect interval applies to loop-start trunks; it does not apply to emulated loop-start trunks (E1 facility).

**NOTES**
- If the disconnect interval is longer than the telephone company setting, the line is not released when a caller on hold hangs up.

- Do not program a short interval unless the local telephone company's central office is the crossbar type.

- Do not program a reliable disconnect for lines/trunks with a short hold disconnect interval. This can cause active calls as well as lines/trunks on hold to be disconnected. See "Disconnect Signaling Reliability" on page 3-24.

For more information on Hold Interval Disconnect and Reliable and Unreliable Disconnect, see the *Feature Reference*.

### Summary: Hold Disconnect Interval

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 2c, System Numbering: Line/Trunk Jacks |
| **Factory Setting** | Long interval (450 ms) |
| **Valid Entries** | Long interval, Short interval |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | To program a single-line/trunk:<br>LinesTrunks→More→HoldDiscnct→Select entry mode→<br>Dial no. of the line/trunk→ Enter→Back→Back |

To program a block of lines/trunks:
LinesTrunks→More→HoldDiscnct→Select block of lines/
trunks→Toggle LED On/Off→Enter→Back→Back

**PC Procedure**

To program a single-line/trunk:
[F4]→[PgUp]→[F1]→[F6]→Type no. of the line/trunk→
[F10]→[F5]→[F5]

To program a block of lines/trunks:
[F4]→[PgUp]→[F1]→Select block of lines/trunks→
Toggle letter G On/Off→[F10]→[F5]→[F5]

## Ring Disconnect Timer

Use this procedure to activate and set the amount of time in seconds for a system-wide time interval for calls on trunks that do not have Reliable Disconnect. The Ring Disconnect Timer is applied only to those calls that are using a facility that has its Reliable Disconnect parameter set to "no."

The Ring Disconnect Timer begins for each call that is ringing at an extension where no internal user is active (off-hook, speakerphone, delay announcement) on the call. Also, it starts only after all other system actions have taken place (such as all coverage paths or the Transfer Return interval). The Ring Disconnect Timer stops every time the call is answered at a MERLIN MAGIX extension.

The Ring Disconnect Timer can be set in the range of 50 to 300 seconds in 5-second increments. The factory setting is 50 seconds.

### Summary: Hold Disconnect Interval

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Factory Setting** | Activation: On<br>Ring Disconnect Timer duration: 50 seconds |
| **Valid Entries** | Activation: On or Off<br>Ring Disconnect Timer duration: 50 to 300 seconds in 5-second intervals |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | To turn the Ring Disconnect Timer on or off:<br>Options→More→Ring Disc→Activation→Select On or Off→ Enter→Back→Back→Back→Back |

To set the Ring Disconnect Timer duration:
`Options`→More→`Ring Disc`→`Timer`→Dial number of seconds
for Ring Disconnect Timer (50-300 in increments of 5 seconds)→
`Enter`→`Back`→`Back`→`Back`

**PC Procedure**

To turn the Ring Disconnect Timer on or off:
`F7`→`PgUp`→`F4`→`F1`→`F1` or `F2`→ `F10`→`F5`→`F5`→`F5`→`F5`

To set the Ring Disconnect Timer duration:
`F7`→`PgUp`→`F4`→`F2`→Type number of seconds for Ring
Disconnect Timer (50-300 in increments of 5 seconds)→
`F10`→`F5`→`F5`→`F5`

## Dial Tone Detection

Dial Tone Detection prevents the MERLIN MAGIX system from dialing out digits to the public network central office before the public network central office provides dial tone. Users of trunks with Dial Tone Detection enabled always hear internal dial tone, but the digits they dial are held by the system until it detects a dial tone from the public network central office. Dial Tone Detection enables users to go off-hook, hear internal dial tone, dial an external number, and stay off-hook and wait for the system to dial the number when the public network central office provides dial tone.

You can specify the following Dial Tone Detection options:

■ Whether the Dial Tone Detection feature is activated for the entire system (Yes or No). The factory setting is No.

■ If you activate Dial Tone Detection for the entire system, you can specify which loop-start trunks connected to an 800 LS/CPTD module require Dial Tone Detection. The factory setting is no Dial Tone Detection on any trunks.

■ Dial codes that require a second dial tone (for example, long distance calls). The list of numbers should not contain ambiguous entries. The system does provide an error beep or error message is you enter an ambiguous entry.

■ The number of calls waiting for dial tone that can be placed on hold for each extension. The factory setting is one call per extension.

> **NOTE▶** Single-line telephones (tip/ring), 4400, and 4400D telephones can have a maximum of one call waiting for Dial Tone Detection. If you set the number to more than one, the system ignores the setting and allows a maximum of one.

■ The length of time that the system waits for dial tone from the public network central office before timing out. The default is 240 seconds. After time-out, the system does not dial the number to the public network central office.

■ What the system does after the time-out interval is exceeded. The system can either disconnect the call (Reorder Tone—Disconnect setting) or connect the caller to the public network central office (Cut-through setting). The factory setting is Reorder Tone-Disconnect, and the trunk is disconnected from the public network central office when the user hangs up or after a 15-second timeout.

■ Whether a trunk with Dial Tone Detection activated is automatically busied out if the time-out interval is exceeded four consecutive times

## Summary: Dial Tone Detection

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Factory Setting** | Activation: No<br>Loop-start trunks requiring Dial Tone Detection: None<br>Dial codes requiring second dial tone: None<br>Limit of Dial Tone Detection calls on hold: One call per extension<br>Dial Tone Detection Timeout Interval: 240 seconds<br>After timeout action: Reorder tone-disconnect<br>Dial Tone Detection Maintenance Busy: Disable |
| **Valid Entries** | Activation: Yes or No<br>Loop-start trunks requiring Dial Tone Detection: Required, not required<br>Dial codes requiring second dial tone: 1 to 10 entries, with 1 to 10 digits per entry<br>Limit of Dial Tone Detection calls on hold: 0-80<br>Dial Tone Detection Timeout Interval: 1 to 2000 seconds<br>After timeout action: Cut-through or Reorder tone-disconnect<br>Dial Tone Detection Maintenance Busy: Enable or Disable |
| **Inspect** | Loop-start trunks requiring Dial Tone Detection: Yes<br>Dial codes requiring second dial tone: Yes<br>All other options: No |
| **Copy Option** | All options: No |
| **Console Procedure** | To activate or deactivate Dial Tone Detection system-wide:<br>`LinesTrunks`→More→More→`DialTone Det`→`Activation`→ Select `Yes` or `No`→`Enter`→`Back`→`Back`→`Back`→`Back`<br><br>To program Dial Tone Detection for a single-line/trunk:<br>`LinesTrunks`→More→More→`DialTone Det`→`Lines/ Trunks`→Select entry mode→ Dial no. of the line/trunk→ `Enter`→`Back`→`Back`→`Back`→`Back`<br><br>To program Dial Tone Detection for a block of lines/trunks:<br>`LinesTrunks`→More→More→`DialTone Det`→`Lines/ Trunks`→Select block of lines/trunks→Toggle LED On/ Off→`Enter`→`Back`→`Back`→`Back`→`Back` |

To set the Dial Tone Detection Timeout Interval:
LinesTrunks→More→More→DialTone Det→Time-out→
Drop→Dial interval (1-2000 seconds)→Enter→Back→Back→
Back→Back

To set the system action after time-out:
LinesTrunks→More→More→DialTone Det→AfterTimeOut
→Select Cut-through or ReorderTone - Disconnect→
Enter→Back→Back→Back→Back

To program dial codes requiring second dial tone:
LinesTrunks→More→More→DialTone Det→Second
DT→Dial entry number (1-10)→ Enter→ Dial digits of dial code
requiring second dial tone (0-9, maximum of 10)→
Enter→Back→Back→Back→Back

To program limit of Dial Tone Detection calls on hold for extensions:
LinesTrunks→More→More→DialTone Det→DT on
Hold→Dial extension number→ Enter→Drop→Dial number of
calls waiting Busy Tone Detection that can be put on hold for this
extension (1-80)→ Enter→Back→Back→Back→Back

To enable or disable Dial Tone Detection Maintenance Busy:
LinesTrunks→More→More→DialTone Det→
MaintenBusy→Select Enable or Disable→Enter→
Back→Back→Back→Back

**PC Procedure**

To activate or deactivate Dial Tone Detection system-wide:
[F4] →[PgUp]→[PgUp]→[F2]→[F1]→[F1] or [F2]→ [F10]→[F5]→[F5]→
[F5]→[F5]

To program Dial Tone Detection for a single-line/trunk:
[F4] →[PgUp]→[PgUp]→[F2]→[F2]→[F6]→Type no. of the line/trunk→
[F10]→[F5]→[F5]→[F5]→[F5]

To program Dial Tone Detection for a block of lines/trunks:
[F4] →[PgUp]→[PgUp]→[F2]→[F2]→Select block of lines/trunks→
Toggle letter G On/Off→[F10]→[F5]→[F5]→[F5]→[F5]

To set the Dial Tone Detection Timeout Interval:
[F4] →[PgUp]→[PgUp]→[F2]→[F3]→[Alt]+[P]→Type interval (1-2000
seconds)→ [F10]→[F5]→[F5]→[F5]→[F5]

To set the system action after time-out:
[F4] →[PgUp]→[PgUp]→[F2]→[F4]→[F1] or [F2]→ [F10]→[F5]→[F5]→
[F5]→[F5]

To program dial codes requiring second dial tone:
[F4] →[PgUp]→[PgUp]→[F2]→[F6]→[F6]→Type entry number (1-20)→
[F10]→Type digits of dial code requiring second dial tone (0-9,
maximum of 10)→ [F10]→[F5]→[F5]→[F5]→[F5]

To program limit of Dial Tone Detection calls on hold for extensions:
F4 →PgUp →PgUp → F2 → F7 →Type extension number→
F10 → Alt +P →Type number of calls waiting Busy Tone Detection
that can be put on hold for this extension (1-80)→ F10 → F5 → F5 →
F5 → F5

To enable or disable Dial Tone Detection Maintenance Busy:
F4 →PgUp →PgUp → F2 → F8 → F1 or F2 → F10 → F5 → F5 →
F5 → F5

## Glare Guard

The Glare Guard feature helps reduce the occurrence of glare. Glare occurs when a user goes off-hook (such as picking up the handset of the telephone) to make an outgoing call and is connected to an incoming call instead of receiving dial tone to place a call. This incoming call arrives at the user's telephone without ringing. Glare is caused by the public network central office and the user accessing the same trunk at the same time.

Use this procedure to set the Glare Guard Duration Timer, which is programmed on a system-wide basis and applies to all 800 LS/CPTD modules. The Glare Guard Duration Timer ranges from 0 to 25500 milliseconds (ms). The factory setting is 1500 ms.

**NOTE** Glare Guard does not apply to E1 facilities that are programmed to emulate loop-start trunks.

### Summary: Glare Guard

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Factory Setting** | 1500 milliseconds (ms) |
| **Valid Entries** | 0 to 25500 milliseconds (ms) in 100-ms increments |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | LinesTrunks→More→More→Glare Guard→Drop→Dial duration of Glare Guard Timer (0-25500 ms in increments of 100 ms→ Enter→Back→Back |
| **PC Procedure** | F4 →PgUp →PgUp → F4 → Alt +P →Type duration of Glare Guard Timer (0-25500 ms in increments of 100 ms)→ F10 → F5 → F5 |

## Busy Tone Detection

Busy Tone Detection is a built-in feature on the 800 LS/CPTD module. Busy Tone Detection allows the MERLIN MAGIX system to automatically recognize an in-band busy signal from the public network central office as a disconnect signal. When the busy signal is received, the MERLIN MAGIX system releases the analog loop-start trunk. The feature can be set to On or Off for each loop-start trunk connected to the 800 LS/CPTD module. The default is On for all available ports on the module.

The Busy Tone Detection feature is activated when the MERLIN MAGIX user finishes dialing an outside number or when a MERLIN MAGIX system user answers an incoming call. The feature operates as follows:

You can program the following parameters for the Busy Tone Detection feature to ensure that the MERLIN MAGIX system can recognize the busy tone as a signal to disconnect the call:

■ Assign or remove Busy Tone Detection to each trunk on the 800 LS/CPTD module

■ Specify the cadence of the busy tone

■ Specify the level (intensity) of the busy tone

■ Set the duration of the Busy Tone Detection Threshold Timer

Table 3-2 shows the busy tone characteristics for the three MERLIN MAGIX R1.0i countries.

**Table 3-2.   Busy Tone Characteristics**

| Country | Frequency (in Hz) | Intensity (in dB) | Cadence (in ms) |
|---------|-------------------|-------------------|-----------------|
| Argentina | 450 (+/–5%) | –5 to 0 | On 250, Off 250 ms |
| Brazil | 425 (+/–5%) | –20 to –5 | On 250, Off 250 (+/– 10%) |
| Mexico | 425 (+/–25) | –10 (+/–5) | On 250, Off 250 |

## Summary: Busy Tone Detection

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Factory Setting** | Cadence:<br>On duration: 250 ms; Off duration: 250 ms<br>Level: Medium (-6 dB)<br>Busy Tone Detection Timer: 0 seconds |
| **Valid Entries** | Cadence:<br>On duration: 100 ms–1000 ms in 10-ms increments<br>Off duration: 100 ms–1000 ms in 10-ms increments<br>Level: High (0 dB), Medium (-6 dB), Low (-10 dB),<br>Very Low (-12.5 dB)<br>Busy Tone Detection Timer: 0–60 seconds in 1 second increments |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | To program Busy Tone Detection for a single-line/trunk:<br>`LinesTrunks`→More→More→`Busy Tone Det`→`BTD Trunk`<br>`Status/Change`→Select entry mode→ Dial no. of the line/trunk→<br>`Enter`→`Back`→`Back`→`Back`→`Back`<br><br>To program Busy Tone Detection for a block of lines/trunks:<br>`LinesTrunks`→More→More→`Busy Tone Det`→`BTD Trunk`<br>`Status/Change`→Select block of lines/trunks→Toggle LED On/<br>Off→`Enter`→`Back`→`Back`→`Back`→`Back`<br><br>To specify cadence of the busy tone<br>`LinesTrunks`→More→More→`Busy Tone Det`→`BTD`<br>`Feature`→`Cadence`→Select cadence (on duration or off<br>duration)→Drop→Dial new duration (100-1000 ms in increments of<br>10 ms)→ `Enter`→`Back`→`Back`→`Back`→`Back`<br><br>To specify level (intensity) of the busy tone<br>`LinesTrunks`→More→More→`Busy Tone Det`→`BTD`<br>`Feature`→`Level`→Select level (High, Medium, Low, or Very<br>Low)→ `Enter`→`Back`→`Back`→`Back`→`Back`<br><br>To program Busy Tone Detection Threshold Timer<br>`LinesTrunks`→More→More→`Busy Tone Det`→`BTD`<br>`Feature`→`BTD Threshold Timer`→Drop→Dial new duration (1-<br>60 seconds in increments of 1 second)→ `Enter`→`Back`→`Back`→<br>`Back`→`Back` |
| **PC Procedure** | To program Dial Tone Detection for a single-line/trunk:<br>F4 →PgUp→PgUp→ F6 → F2 → F6 →Type no. of the line/trunk→<br>F10 → F5 → F5 → F5 → F5<br><br>To program Dial Tone Detection for a block of lines/trunks:<br>F4 →PgUp→PgUp→ F6 → F2 →Select block of lines/trunks→<br>Toggle letter G On/Off→F10 → F5 → F5 → F5 → F5 |

To specify cadence of the busy tone:
[F4] →[PgUp] →[PgUp] →[F6] →[F1] →[F1] →Select cadence (on duration
or off duration)→[Alt]+[P] →Type new duration (100-1000 ms in
increments of 10 ms)→ [F10] →[F5] →[F5] →[F5] →[F5]

To specify level (intensity) of the busy tone:
[F4] →[PgUp] →[PgUp] →[F6] →[F1] →[F2] →Select level (High, Medium,
Low, or Very Low)→ [F10] →[F5] →[F5] →[F5] →[F5]

To program Busy Tone Detection Threshold Timer:
[F4] →[PgUp] →[PgUp] →[F6] →[F1] →[F3] →[Alt]+[P] →Type new duration
(1-60 seconds in increments of 1 second)→ [F10] →[F5] →[F5] →
[F5] →[F5]

# Principal User for Personal Line

Use this procedure to assign or remove one telephone as principal user for a Personal Line. When a telephone with Remote Call Forwarding activated is assigned as principal user, calls received on the Personal Line are forwarded to an outside telephone number. In addition, calls received on that line are sent to that telephone's individual and/or Group Coverage receivers unless the Personal Line button is set to No Ring.

The principal user assignment must be removed before the trunk can be removed from a button on the telephone.

When no principal user is assigned for a Personal Line, calls received on the Personal Line are not forwarded to outside telephone numbers; calls received on the Personal Line follow the coverage patterns for all users who share the line.

## Summary: Principal User for Personal Line

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 4l, Extension Copy: Multiline 4400-Series Telephone Template<br>4m, Multiline 4400-Series Telephone<br>4d, MLX Telephone<br>4e, MFM Adjunct: MLX telephone<br>4f, Tip/Ring Equipment<br>5b, Direct Line Console<br>5c, MFM Adjunct: DLC |
| **Factory Setting** | No principal user |
| **Valid Entries** | Not applicable |
| **Inspect** | No |
| **Copy Option** | No |

| | |
|---|---|
| **Console Procedure** | LinesTrunks→More→PrncipalUsr→Dial line/trunk no.→Enter→Dial ext. no.→Enter or Delete→Back→Back |
| **PC Procedure** | F4→PgUp→F2→Type line/trunk no.→F10→ Type ext. no.→ Select Enter or Delete→F5→F5 |

## QCC Queue Priority Level

Use this procedure to assign QCC queue priority level values (1 to 7) to each loop-start and automatic-in tie trunk in your system. The value assigned determines the order in which calls are sent to the QCC operator positions. Call priority 1 is the highest priority, and 7 is the lowest priority.

**NOTE** This procedure applies to Hybrid/PBX mode only in a system that includes QCC operator positions.

### Summary: QCC Queue Priority Level

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 2c, System Numbering: Line/Trunk Jacks |
| **Factory Setting** | 4 |
| **Valid Entries** | 1 to 7 |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | To program a single-line/trunk: LinesTrunks→More→QCC Prior→Dial priority level (1–7)→ Enter→Select entry mode→Dial trunk no.→Enter→Back→Back

To program a block of lines/trunks: LinesTrunks→More→QCC Prior→Dial priority level (1–7)→ Enter→Select block of lines→Toggle LED On/Off→Enter→ Back→Back |
| **PC Procedure** | To program a single-line/trunk: F4→PgUp→F3→Type priority level (1–7)→Select entry mode→ Type trunk no.→F10→F5→F5

To program a block of lines/trunks: F4→PgUp→F3→Type priority level (1–7)→F10→ Select block of lines→Toggle letter G On/Off→F10→F5→F5 |

## QCC Operator to Receive Calls

Use this procedure to specify whether or not incoming calls on each line/trunk ring into the QCC queue and to identify the QCC system operator positions that receive incoming calls on each line/trunk.

**NOTES** ▶
- This procedure applies to Hybrid/PBX mode only in a system that includes QCC operator positions.

- Each loop-start, or automatic-in tie trunk programmed to ring into the QCC queue can be associated with one or more QCC operator positions.

- If a trunk assigned to ring into the QCC queue is also used for shared Remote Access, see "Remote Access Features'' on page 3-133 for instructions. You must assign Remote Access before you assign a QCC system operator to receive calls. See "QCC Operator to Receive Call Types'' on page 3-95 for more information.

- Do not change the factory setting of No QCC Operator Assigned to Receive Calls for trunks dedicated to incoming calls for Calling Groups, trunks used as Personal Lines, DID trunks, unequipped DS1 trunks, or dial-in tie trunks.

### Summary: QCC Operator to Receive Calls

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 2c, System Numbering: Line/Trunk Jacks |
| **Factory Setting** | No QCC operator is assigned to receive calls. |
| **Valid Entries** | Extension number of first or fifth extension jack |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | To program a single-line/trunk: LinesTrunks→More→QCC Oper→Dial ext. no.→Enter→ Select entry mode→Dial line/trunk no.→Enter→Back→Back |
| | To program a block of lines/trunks: LinesTrunks→More→QCC Oper→Dial ext. no.→Enter→ Select block of lines/trunks→Toggle LED On/Off→Enter→Back→ Back |

| **PC Procedure** | To program a single-line/trunk: |
|---|---|
| | [F4]→[PgUp]→[F4]→Type ext. no.→[F10]→[F6]→Type line/trunk no.→[F10]→[F5]→[F5] |
| | To program a block of lines/trunks: |
| | [F4]→[PgUp]→[F4]→Type ext. no.→[F10]→ |
| | Select block of lines/trunks→Toggle letter G On/Off→[F10]→[F5]→[F5] |

## Clock Synchronization

Use this procedure to specify the primary, secondary, and tertiary clock source. See the *Feature Reference* for more information about the appropriate setting. If the clock is taken from a 100E module, you can also specify whether the clock is synchronized to the outside endpoint (loop) or to the clock reference source (local).

**NOTE** This procedure is necessary only if your system includes more than one 100E module.

### Summary: Clock Synchronization

| **Programmable by** | System Manager |
|---|---|
| **Mode** | All |
| **Idle Condition** | Not required |
| **Factory Setting** | Primary clock: the first 100E module in the control unit carrier |
| **Valid Entries** | Primary, Secondary, Tertiary, Loop/Local |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | LinesTrunks→More→ClockSync→Primary→ Dial slot no. (1–17)→Enter→Dial port no. or select source of synchronization→Enter→Secondary→ Dial slot no. (1–17)→ Enter→Dial port no. or select source of synchronization→ Enter→Tertiary→Dial slot no. (1–17)→Enter→Dial port no. or select source of synchronization→Enter→Back→Back |
| **PC Procedure** | [F4]→[PgUp]→[F7]→[F1]→Type slot no. (1–17)→[F10]→ Type port no. or select source of synchronization→[F10]→[F2]→ Type slot no. (1–17)→[F10]→Type port no. or select source of synchronization→[F10]→[F3]→Type slot no. (1–17)→[F10]→ Type port no. or select source of synchronization→[F10]→[F5]→[F5] |

## Trunks to Pools Assignment

Use this procedure to create trunk pools (groups of outside lines/trunks connected to the system). Trunk pools are used to specify preferred routes for Automatic Route Selection (ARS). In addition, trunk pools enable users to select a line/trunk by dialing a pool dial-out code or by pressing a single button on the telephone. (A separate button for each line/trunk is not needed.) Each pool should contain trunks of the same type (for example, loop-start or DIOD trunks). A maximum of 11 trunk pools is allowed. A trunk can be assigned to only one pool.

Do not mix different service areas of WATS (Wide Area Telecommunications Service) trunks or FX (Foreign Exchange) lines to different cities. Do not include both incoming-only and outgoing-only lines/trunks in the same pool.

If you want to reassign a line/trunk to a different pool, you must remove it from the current pool before you assign it to the new pool. Once you assign a line/trunk to a pool, it can be assigned to a button only on a direct-line console operator position; individual lines intended for personal use on telephones other than the DLC console should not be assigned to pools.

DID trunks cannot be grouped in pools. Loop-start trunks are automatically placed in pools and must be removed manually if used for paging loudspeakers, Music-On-Hold, or maintenance alarms.

Dial-in tie trunks should not be grouped in pools if you intend to assign Pool buttons on telephones.

If you are using Automatic Route Selection, the main pool (factory-set dial-out code 70) must contain loop-start trunks.

The system provides an error tone when a line/trunk is in use, or if a loudspeaker paging system, Music-On-Hold, or maintenance alarm is already assigned; however, the system does not indicate the reason for the error tone.

NOTE▶  This procedure applies to Hybrid/PBX mode only.

### Summary: Trunks to Pools Assignment

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Trunk idle |
| **Planning Form** | 2c, System Numbering: Line/Trunk Jacks |
| **Factory Setting** | All loop-start trunks are assigned to the main trunk pool (factory-set extension number 70); all tie trunks are assigned to the trunk pool with the factory-set extension number 891. |
| **Valid Entries** | Line numbers |
| **Inspect** | Yes |

| | |
|---|---|
| **Copy Option** | Yes |
| **Console Procedure** | To program a single-line/trunk:<br>`LinesTrunks`→`Pools`→Dial pool dial-out code→Select entry mode→Dial no. of the line/trunk→`Enter`→`Back`→`Back` |
| | To program a block of lines/trunks:<br>LinesTrunks→`Pools`→Dial pool dial-out code→Select block of lines/trunks→Toggle LED On/Off→`Enter`→`Back`→`Back` |
| **PC Procedure** | To program a single-line/trunk:<br>[F4]→[F9]→Type pool dial-out code→[F10]→[F6]→Type no. of the line/trunk→[F10]→[F5]→[F5] |
| | To program a block of lines/trunks:<br>[F4]→[F9]→Type pool dial-out code→[F10]→Select block of lines/trunks→Toggle letter R On/Off→[F10]→[F5]→[F5] |

## Copy Options for Lines/Trunks

Use this procedure to copy options assigned to loop-start trunks, tie trunks, DIOD, or DID trunks. Note that many of these options apply to Hybrid/PBX systems only. The following information is copied for each line/trunk type:

■   Loop-Start Trunks (including those emulated on E1 facilities). Toll type, signaling type, and trunk pool assignment (Hybrid/PBX only).

■   Tie Trunks. Direction, tie trunk type, E&M signal, dial mode, dial tone, answer supervision time, disconnect time, and trunk pool assignment (Hybrid/PBX only).

■   DIOD and DID Trunks (Hybrid/PBX only). Block assignment and disconnect time.

To find out whether there is an optional feature assigned that you would like to copy, use Inspect from the system programming console, or click [PgDn] in the console emulation display on the PC.

**NOTES** ▶ ■ You can copy options to a block of lines/trunks only if they are all of the same type (loop-start, Tie, DIOD, or DID). If you attempt to copy assignments and there is a mismatch in line/trunk type, information is copied to that point only. You receive no error message.

■ If you are copying options to a block of lines/trunks, they must be sequentially numbered.

■ If the block you are copying to includes an invalid line/trunk type, the copying process stops at the invalid type. Only the lines/trunks that were copied to before the invalid type was found are copied successfully.

■ If you are copying assignments to a block of lines/trunks and one of the lines or trunks is in use, you see the message `Trunk Busy - Pls wait` on your display. The copying for the rest of the lines/trunks in the block is delayed until the busy line/trunk becomes idle. If you exit without waiting for the copying to complete, the copying done up to that point is not cancelled.

■ The Inspect feature must be programmed on a line button on the 4424LD+ telephone and is a fixed button on the MLX-20L telephone.

## Summary: Copy Options for Lines/Trunks

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All (but note differences) |
| **Idle Condition** | Not required |
| **Planning Form** | 2c, System Numbering: Line/Trunk Jacks<br>3c, Incoming Trunks: TIE<br>3d, Incoming Trunks: DID |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Not applicable |
| **Inspect** | No |
| **Copy Option** | Not applicable |
| **Console Procedure** | To copy individual lines/trunks:<br>LinesTrunks→Copy→Single→Dial copy-from trunk no.→<br>Enter→Dial copy-to trunk no.→Enter→Back→Back→Back<br><br>To copy blocks of lines/trunks:<br>LinesTrunks→Copy→Block→Dial copy-from trunk no.→<br>Enter→Dial first copy-to trunk no. in block→Enter→<br>Dial last copy-to trunk no. in block→Enter→Back→Back→Back |

| | |
|---|---|
| **PC Procedure** | To copy individual lines/trunks:<br>`F4` → `F7` → `F1` → Type copy to trunk no. → `F10` →<br>Type copy-from trunk no . → `F10` → `F5` → `F5` → `F5` |
| | To copy blocks of lines/trunks:<br>`F4` → `F7` → `F2` → Type copy-from trunk no. →<br>Type first copy-to trunk no. in block → `F10` → `F5` →<br>Type last copy-to trunk no. in block → `F10` → `F5` → `F5` → `F5` |

# E1 Facilities

Use the procedures in this section to program the following options for E1 facilities connected to a 100E module:

■ Type of E1 facility

   — Loop start

   — TIE

   — Direct Inward Dial (DID)

   — Direct Inward/Outward Dial (DIOD)

■ Line Code (Suppression)

## Type of E1 Facility

Use this procedure to specify the type of channel emulation for the E1 channels on a 100E module. The system supports the following types of trunk emulation in any combination:

■ Loop start

■ TIE

■ Direct Inward Dial (DID)

■ Direct Inward/Outward Dial (DIOD)

If the type of channel emulation is tie trunk, you must specify whether the lines/trunks are TIE-PBX, Toll, or Switched 56 Data service. The valid settings are as follows:

■ **TIE-PBX**. Select when emulated tie trunks are used to connect to another system (such as PBX or Centrex). The transmit/receive gain is set to 0/4.

■ **Toll**. Select when emulated tie trunks are used for network services. Note that unused channels must be specified as unequipped. The transmit/receive gain is set to 0/6.

### Summary: Type of E1 Facility

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | 100E module idle |

| | |
|---|---|
| **Factory Setting** | Unequipped |
| **Valid Entries** | Loop Start, TIE, DID, DIOD, All Loop, All TIE, All DID, All DIO, Unequipped, All Unequipped |
| **Inspect** | Yes |
| **Copy Option** | No |

**Console Procedure**

To select All Loop, All DID, or All DIOD:
LinesTrunks→Modules→Dial slot no. (1–17)→Enter→ Type→Select type of emulation→Enter→Back→ Back→Back

To select All Unequip:
LinesTrunks→Modules→Dial slot no. (1–17)→Enter→ Type→More→All Unequip→Enter→Enter→ Back→Back→Back

To select Loop Start, DID or DIOD for individual channels:
LinesTrunks→Modules→Dial slot no. (1–17)→Enter→ Type→Select type of emulation→Enter→Dial channel no. (2-32; channels 1 and 17 are reserved for signaling)→Enter or Delete→Back→Back→Back→Back

To select All TIE:
LinesTrunks→Modules→Dial slot no. (1–17)→Enter→ Type→All TIE→Enter→TIE-PBX or Toll→Enter→ Back→Back→Back→Back

To select TIE for individual channels:
LinesTrunks→Modules→Dial slot no. (1–17)→Enter→ Type→TIE→Enter→TIE-PBX or Toll→Enter→Dial channel no. (1-32; channels 1-17 are reserved for signaling)→Enter or Delete→Back→Back→Back→Back

**PC Procedure**

To select All Loop, All DID or All DIOD:
[F4]→[F1]→Type slot no. (1–17)→[F10]→[F1]→Select type of emulation→[F10]→[F5]→[F5]→[F5]

To select All Unequip:
[F4]→[F1]→Type slot no. (1–17)→[F10]→[F1]→[PgUp]→[F6]→[F10]→ [F5]→[F5]→[F5]

To select Loop Start, DID or DIOD for individual channels:
[F4]→[F1]→Type slot no. (1–17)→[F10]→[F1]→Select type of emulation→[F10]→Type channel number (1-32; channels 1-17 are reserved for signaling)→[F10] or [F8]→[F5]→[F5]→[F5]→[F5]

To select All TIE:
[F4]→[F1]→Type slot no. (1–17)→[F10]→[F7]→[F1] or [F2]→[F10]→[F5]→[F5]→[F5]→[F5]

To select TIE for individual channels:
[F4]→[F1]→Type slot no. (1–17)→[F10]→[F1]→[F1]→[F1] or [F2]→[F10]→Type channel no. (1-32; channels 1-17 are reserved for signaling)→[F10] or [F8]→[F5]→[F5]→[F5]→[F5]

E1 Facilities

## Line Code Suppression

Use this procedure to specify the type of line coding suppression mechanism for the 100E module as Alternate Mark Inversion (AMI) or Alternate Mark Inversion with High Density Bipolar of Order 3 (HDB3). Your selection must match the suppression at the far end of the DS1 facility.

### Summary: Zero Code Suppression

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | 100E module idle |
| **Factory Setting** | HDB3 |
| **Valid Entries** | AMI or HDB3 |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | LinesTrunks→Module→Dial slot no. (1–17)→ Enter→ Suppression→AMI or HDB3→ Enter→Back→Back |
| **PC Procedure** | $\boxed{\text{F4}}$→$\boxed{\text{F1}}$→Type slot no. (1–17)→$\boxed{\text{F10}}$→$\boxed{\text{F2}}$→$\boxed{\text{F1}}$ or $\boxed{\text{F2}}$→$\boxed{\text{F10}}$→$\boxed{\text{F5}}$→$\boxed{\text{F5}}$ |

# Channel Associated Signaling

Use these procedures to program the following Channel Associated Signaling options for E1 facilities:

■ Select a country code

— 1=Mexico (default)

— 2=Argentina

— 3=Brazil

**NOTE▶** Setting the country code automatically sets the values for the following options and it is usually not necessary to change the settings.

■ Line Signaling Timing

■ MFC Dialing (See MFC Register Signaling)

■ Pulse Dialing

■ Tariff Pulse Meter

■ Encoding

## Country Code

Use this procedure select a specific channel associated signaling protocol by selecting the country code that most closely matches your country.

### Summary: Country Code

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | 100E module idle |
| **Factory Setting** | 1 - Mexico |
| **Valid Entries** | 1 = Mexico, 2 = Argentina, or 3 = Brazil |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | LinesTrunks→More→More→R2/CaS Signl→CountryCode→ Dial a country code (1 = Mexico, 2 = Argentina, or 3 = Brazil)→ Enter→Back→Back→Back→Back |
| **PC Procedure** | F4 →PgUp→PgUp→ F3 → F1 →Type a country code (1 = Mexico, 2 = Argentina, or 3 = Brazil)→F10 → F5 → F5 → F5 → F5 |

## Line Signaling Timing

Use this procedure set the following line signaling timers:

- ■ out seize
- ■ clear forward
- ■ clear back
- ■ disconnect guard
- ■ answer validation
- ■ dialing delay

### Summary: Line Signaling Timing

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | 100E module idle |
| **Factory Setting** | Values defined by country code chosen; if a specific country code is not chosen, the factory settings are as follows:<br>Out Seize: 200 ms<br>Clear Forward: 220 ms |

Clear Back: 250 ms
Disconnect Guard: 500 ms
Answer Timeout: 20 ms
Dialing Delay: 0 ms

| | |
|---|---|
| **Valid Entries** | Out Seize: 0 ms to 10000 ms in increments of 100 ms<br>Clear Forward: 20 ms to 1000 ms in increments of 20 ms<br>Clear Back: 20 ms to 1000 ms in increments of 20<br>Disconnect Guard: 0 ms to 2000 ms in increments of 50<br>Answer Timeout: 20 ms to 500 ms in increments of 10<br>Dialing Delay: 0 ms to 1000 msms in increments of 100 |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | LinesTrunks→More→More→R2/CaS Signl→<br>Timing→Select the timer you want to change→Drop→Dial the new setting for the timer (see valid entries above for each timer)→Enter→<br>Back→Back→Back→Back |
| **PC Procedure** | F4 →PgUp→PgUp→ F3 → F2 →Select the timer you want to change→ Alt + P →Type the new setting for the timer (see valid entries above for each timer)→ F10 → F5 → F5 → F5 → F5 |

## Pulse Dialing

Use this procedure to set the following pulse dialing parameters:

- Pulse dialing bit - used for selecting the bit used for pulse dialing

- Break timer - used for the make/break ratio of pulse dialing

### Summary: Pulse Dialing

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | 100E module idle |
| **Factory Setting** | Values defined by country code chosen; if a specific country code is not chosen, the factory settings are set as follows:<br>Pulse Dialing Bit: Bit B<br>Break Timer: 60 ms |
| **Valid Entries** | Bit A, Bit B, Bit C<br>Break Timer: 50 ms to 80 ms in increments of 10 ms |
| **Inspect** | No |
| **Copy Option** | No |

| | |
|---|---|
| **Console Procedure** | To set the Pulse Dialing Bit:<br>`LinesTrunks`→**More**→**More**→`R2/CaS Signl`→<br>`Pulse Dial`→`Dialing Bit`→Select `Bit A`, `Bit B` or `Bit C`→<br>`Enter`→`Back`→`Back`→`Back`→`Back` |
| | To set the Break Timer:<br>`LinesTrunks`→**More**→**More**→`R2/CaS Signl`→<br>`Pulse Dial`→`Break Timer`→`Drop`→Dial the duration of the<br>Break Timer (50-80 ms in increments of 10 ms→<br>`Enter`→`Back`→`Back`→`Back`→`Back` |
| **PC Procedure** | To set the Pulse Dialing Bit:<br>`F4`→`PgUp`→`PgUp`→`F3`→`F4`→`F1`→`F1` or `F2`→`F10`<br>→`F5`→`F5`→`F5`→`F5` |
| | To set the Break Timer:<br>`F4`→`PgUp`→`PgUp`→`F3`→`F4`→`F2`→`Alt`+`P`→Type the duration<br>of the Break Timer (50-80 ms in increments of 10 ms→`F10`<br>→`F5`→`F5`→`F5`→`F5` |

## Tariff Pulse Meter

Use this procedure to activate tariff pulse metering on E1 trunks and set the following Tariff Pulse Meter parameters:

■ Tariff Pulse Meter activation

■ meter bit

■ minimum pulse

■ minimum pause

### Summary: Tariff Pulse Meter

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | 100E module idle |
| **Factory Setting** | Values defined by country code chosen; if a specific country code is not chosen, the factory settings are as follows:<br>Activation: Off<br>Meter Bit: Bit B<br>Minimum Pulse Duration: 100 ms<br>Minimum Pause Duration: 40 ms |
| **Valid Entries** | Activation: On or Off<br>Meter Bit: Bit A, Bit B or Bit C<br>Minimum Pulse Duration: 20 ms to 1000 ms in increments of 10 ms<br>Minimum Pause Duration: 20 ms to 1000 ms in increments of 10 ms |
| **Inspect** | No |

| | |
|---|---|
| **Copy Option** | No |
| **Console Procedure** | To turn Tariff Pulse Metering on or off:<br>LinesTrunks→More→More→R2/CaS Signl→<br>Tariff Pulse→On/Off→Select On or Off→<br>Enter→Back→Back→Back→Back |
| | To select the Meter Bit:<br>LinesTrunks→More→More→R2/CaS Signl→<br>Tariff Pulse→Meter Bit→Select Bit A, Bit B or Bit<br>C→Enter→Back→Back→Back→Back |
| | To set the Minimum Pulse Duration:<br>LinesTrunks→More→More→R2/CaS Signl→<br>Tariff Pulse→Min Pulse→Drop→Dial the Minimum Pulse<br>Duration (200-1000 ms in increments of 10 ms) →Enter→Back<br>→Back→Back→Back |
| | To set the Minimum Pause Duration:<br>LinesTrunks→More→More→R2/CaS Signl→<br>Tariff Pulse→Min Pause→Drop→Dial the Minimum Pause<br>Duration (20-1000 ms in increments of 10 ms) →Enter→Back<br>→Back→Back→Back |
| **PC Procedure** | To turn Tariff Pulse Metering on or off:<br>F4 →PgUp →PgUp → F3 → F7 → F1 → F1 or F2 →F10<br>→ F5 → F5 → F5 → F5 |
| | To select the Meter Bit:<br>F4 →PgUp →PgUp → F3 → F7 → F2 → F1 , F2 ☐ or F3 →→F10<br>→ F5 → F5 → F5 → F5 |
| | To set the Minimum Pulse Duration:<br>F4 →PgUp →PgUp → F3 → F7 → F3 → Alt + P →Type the Minimum<br>Pulse Duration (200-1000 ms in increments of 10 ms) →F10<br>→ F5 → F5 → F5 → F5 |
| | To set the Minimum Pause Duration:<br>F4 →PgUp →PgUp → F3 → F7 → F4 → Alt + P →Type the Minimum<br>Pulse Duration (20-1000 ms in increments of 10 ms) →F10<br>→ F5 → F5 → F5 → F5 |

## Encoding

Use this procedure to specify the encoding algorithm that the system uses to interface with the public-switched telephone network. Most countries expect the A-law.

> **NOTE** ▶ if A-law is selected, the information selected and received to and from the network will be in A-law and then a conversion is done to Mu-law since the system backplane works in Mu-law.

### Summary: Encoding

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | 100E module idle |
| **Factory Setting** | Values defined by country code chosen; if a specific country code is not chosen, the factory setting is A-law |
| **Valid Entries** | Mu-law or A-law |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | LinesTrunks→More→More→R2/CaS Signl→ Encoding→Select Mu-law or A-law→Enter→Back→Back→ Back |
| **PC Procedure** | F4 →PgUp →PgUp → F3 → F6 → F1 or F2 →F10 → F5 → F5 → F5 |

# MultiFrequency Compelled (MFC) Register Signaling

Use these procedures to program the following MultiFrequency Compelled (MFC) Register Signaling options for E1 facilities:

- Signals
- Send Signals
- Expect Digit
- Number to Send

Use this procedure to map forward and backward signals to their meanings.

### Summary: Signals

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | 100E module idle |
| **Factory Setting** | Values defined by country code chosen; if a specific country code is not chosen, the factory setting is the settings required for operation in Mexico; see *Feature Reference* for details. |
| **Valid Entries** | Group I, Group III, Group A, or Group B |
| **Inspect** | No |
| **Copy Option** | No |

| | |
|---|---|
| **Console Procedure** | LinesTrunks→More→More→R2/CaS Signl→ MFC Dialing→Signals→Dial the signal number you want to set→Drop→Enter→Select the appropriate meaning for the signal→Enter→Back→Back→Back→Back |
| **PC Procedure** | [F4]→[PgUp]→[PgUp]→[F3]→[F2]→[F1]→Type the signal number you want to set→[Alt]+[P]→[F10]→Select the appropriate meaning for the signal→[F10]→[F5]→[F5]→[F5]→[F5] |

■  Specify the number of digits the system expects for incoming TIE calls using MFC Dialing.

**NOTE** The number of digits the system expects for incoming DID calls is specified during DID trunks programming.

## Send Signals

Use this procedure to specify what signal the system sends in certain points of the dialing protocol. You can set the following signals:

■  End of Number

■  II Response

■  End of Address

■  Group A Congestion

■  Ringing

■  Busy

■  Reorder 1

■  Reorder 2

■  Reorder 3

■  End of ANI

The settings are not normally changed. Check with your representative before changing the settings.

### Summary: Send Signals

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | 100E module idle |
| **Factory Setting** | Values defined by country code chosen; if a specific country code is not chosen, the factory setting is the settings required for operation in Mexico; see *Feature Reference* for details. These settings are not normally changed. |
| **Valid Entries** | See *Feature Reference* |

| | |
|---|---|
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | LinesTrunks→More→More→R2/CaS Signl→<br>MFC Dialing→Send Signals→Select the send signal you want<br>to change→Drop→Dial the new setting→Enter→Back→Back<br>→Back→Back |
| **PC Procedure** | [F4]→[PgUp]→[PgUp]→[F3]→[F2]→[F2]→Select the send signal you<br>want to change→[Alt]+[P]→Type the new setting→[F10]→[F5]→[F5]<br>→[F5]→[F5] |

## Expected Digits

Enables you to specify the number of digits the system expects for incoming TIE calls using MFC Dialing.

NOTE▶ Expected digits for DID trunks are set under DID programming.

## Summary: Expected Digits

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | 100E module idle |
| **Factory Setting** | Values defined by country code chosen; if a specific country code is not chosen, the factory setting is the settings required for operation in Mexico. |
| **Valid Entries** | 1-4 |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | LinesTrunks→More→More→R2/CaS Signl→<br>MFC Dialing→ExpectDigit→Drop→Dial the number of digits to<br>expect (1-4)→Enter→Back→Back→Back→Back |
| **PC Procedure** | [F4]→[PgUp]→[PgUp]→[F3]→[F2]→[F3]→[Alt]+[P]→Type the number of<br>digits to expect (1-4)→[F10]→[F5]→[F5]→[F5]→[F5] |

## Number to Send

Use this procedure to specify which number the system sends in response to a "send ANI" request. You can specify the system to send one of the following numbers:

- Extension Only

- Extension and Base (only one base telephone number is permitted per system)

- Line Telephone Number

### Summary: Number to Send

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | 100E module idle |
| **Factory Setting** | Extension Only |
| **Valid Entries** | Extension Only, Extension and Base, or Line Telephone number |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | To specify Extension Only:<br>LinesTrunks→More→More→R2/CaS Signl→ MFC Dialing→NumberToSend→Extension Only→Enter→Back→Back→Back→Back |
| | To specify Extension and Base:<br>LinesTrunks→More→More→R2/CaS Signl→ MFC Dialing→NumberToSend→Extension and Base→Drop→Dial the base telephone number (maximum 12 digits)→Enter→Back→Back→Back→Back |
| | To specify Line Telephone Number:<br>LinesTrunks→More→More→R2/CaS Signl→ MFC Dialing→NumberToSend→Line Telephone Number→Enter→Dial the line number (1-80)→Enter→Drop→ Dial the telephone number to send on outgoing calls (maximum 12 digits)→Enter→Back→Back→Back→Back |
| **PC Procedure** | To specify Extension Only:<br>F4 →PgUp→PgUp→ F3 → F2 → F4 → F1 →F10→ F5 → F5 → F5 → F5 |
| | To specify Extension and Base:<br>F4 →PgUp→PgUp→ F3 → F2 → F4 → F2 → Alt + P →Type the base telephone number (maximum 12 digits)→F10→ F5 → F5 → F5 → F5 |

To specify Extension and Base:
[F4]→[PgUp]→[PgUp]→[F3]→[F2]→[F4]→[F3]→[F10]→Dial the line number (1-80)→[F10]→[Alt]+[P]→Type the telephone number to send on outgoing calls (maximum 12 digits)→[F10]→[F5]→[F5]→[F5]→[F5]

# Tie Trunks

**Reviewers: Is this section still valid since Release 1.0i does not support the 400EM module? Does this procedure apply to the emulated tie trunks for the 100E module?**

This section covers programming procedures for the following tie trunk options:

■   Direction

■   Tie Trunk Seizure Type

■   E&M Signal

■   Dial Mode

■   Tie Trunk Dial Tone

■   Tie Trunk Answer Supervision Time

■   Disconnect Time

## Direction

Use this procedure to specify whether tie trunks operate in a one- or two-way direction. For one-way tie trunks, you must also specify whether the direction is out or in.

### Summary: Direction

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Tie trunk idle |
| **Planning Form** | 3c, Incoming Trunks: Tie |
| **Factory Setting** | Two-way |
| **Valid Entries** | Two-way, Outgoing, Incoming |
| **Inspect** | No |
| **Copy Option** | Yes |
| **Console Procedure** | LinesTrunks→TIE Lines→Direction→Dial trunk no.→ Enter→Specify direction (Two-way, Outgoing, or Incoming)→ Enter→Back→Back |

**PC Procedure**    $\boxed{\text{F4}}\rightarrow\boxed{\text{F2}}\rightarrow\boxed{\text{F1}}\rightarrow$Type trunk no.$\rightarrow\boxed{\text{F10}}\rightarrow$
Specify direction (Two-way, Outgoing, or Incoming)$\rightarrow\boxed{\text{F10}}\rightarrow\boxed{\text{F5}}\rightarrow\boxed{\text{F5}}$

## Tie Trunk Seizure Type

Use this procedure to specify whether the seizure type of incoming or outgoing tie trunk is wink, delay, immediate, automatic, R2/CaS Automatic, or R2/CaS Dial.

### Summary: Tie Trunk Seizure Type

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Tie trunk idle |
| **Planning Form** | 3c, Incoming Trunks: Tie |
| **Factory Setting** | R2/CaS Automatic |
| **Valid Entries** | Wink, Delay, Immediate, Automatic, R2/CaS Automatic, or R2/CaS Dial |
| **Inspect** | No |
| **Copy Option** | Yes |
| **Console Procedure** | LinesTrunks→TIE Lines→Intype or Outtype→ Dial trunk no.→Enter→Specify seizure type (Wink, Delay, Immediate, Automatic, R2/CaS Automatic, or R2/CaS Dial)→Enter→Back→Back |
| **PC Procedure** | $\boxed{\text{F4}}\rightarrow\boxed{\text{F2}}\rightarrow\boxed{\text{F2}}$ or $\boxed{\text{F3}}\rightarrow$Type trunk no.$\rightarrow\boxed{\text{F10}}\rightarrow$ Specify seizure type (Wink, Delay, Immediate, Automatic R2/CaS Automatic, or R2/CaS Dial)$\rightarrow\boxed{\text{F10}}\rightarrow\boxed{\text{F5}}\rightarrow\boxed{\text{F5}}$ |

## E&M Signal

Use this procedure to specify the type of tie trunk signal, as follows:

- E&M Mode:

    — **1S, Type 1 Standard**. Tie trunks that are connected through the local telephone company.
    — **1C, Type 1 Compatible**. Tie trunks that are connected directly to a system that uses 1S signaling.

- Simplex Mode:

    — **5, Type 5 Simplex**. Tie trunks that are connected to a system using Type 5 signaling.

**Summary: E&M Signal**

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Tie trunk idle |
| **Planning Form** | 3c, Incoming Trunks: Tie |
| **Factory Setting** | 1S |
| **Valid Entries** | 1S, 1C, 5 |
| **Inspect** | No |
| **Copy Option** | Yes |
| **Console Procedure** | LinesTrunks→TIE Lines→E&M Signal→Dial trunk no.→ Enter→Specify signaling type (1S, 1C, or 5)→Enter→Back→ Back |
| **PC Procedure** | F4 → F2 → F4 →Type trunk no.→F10 → Specify signaling type (1S, 1C, or 5)→F10 → F5 → F5 |

## Dial Mode

Use this procedure to specify whether an incoming or outgoing tie trunk is Touch-Tone, Rotary, or MFC.

Touch-Tone cannot be programmed for incoming immediate signaling tie trunks. Users of Touch-Tone single-line telephones cannot make calls by using individual trunks programmed for rotary operation. The Touch-Tone signals generated from the telephone while the user is dialing are transmitted to the central office at the same time the rotary signals are sent to the system. The central office receives both signals and cannot process the call.

**Summary: Dial Mode**

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 3c, Incoming Trunks: Tie |
| **Factory Setting** | MFC |
| **Valid Entries** | Rotary, Touch-Tone, MFC |
| **Inspect** | Yes |
| **Copy Option** | Yes |

| | |
|---|---|
| **Console Procedure** | To program a single-line/trunk: |
| | LinesTrunks→TIE Lines→Inmode or Outmode→ |
| | Entry Mode→Dial line/trunk no.→ Enter or Delete→Back→ |
| | Back→Back |
| | To program a block of lines/trunks: |
| | LinesTrunks→TIE Lines→Inmode or Outmode→ |
| | Select block of lines→Toggle LED On/Off→Back→Back→Back |
| **PC Procedure** | To program a single-line/trunk: |
| | F4 → F2 → F6 or F7 → F6 →Type line/trunk no.→F10 or F8 → |
| | F5 → F5 → F5 |
| | To program a block of lines/trunks: |
| | F4 → F2 → F6 or F7 →Select block of lines→ |
| | Toggle letter G On/Off→ F5 → F5 → F5 |

## Tie Trunk Dial Tone

Use this procedure to specify whether the system provides dial tone for people calling in on a tie trunk. The settings are remote (system provides dial tone) and local (system does not provide dial tone).

### Summary: Tie Trunk Dial Tone

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 3c, Incoming Trunks: Tie |
| **Factory Setting** | Remote |
| **Valid Entries** | Remote, Local |
| **Inspect** | Yes |
| **Copy Option** | Yes |
| **Console Procedure** | To program a single-line/trunk: |
| | LinesTrunks→TIE Lines→Dialtone→Entry Mode→ |
| | Dial trunk no.→Enter or Delete→Back→Back→Back |
| | To program a block of lines/trunks: |
| | LinesTrunks→TIE Lines→Dialtone→ |
| | Select block of lines/trunks→Toggle LED On/Off→Back→ |
| | Back→Back |

**PC Procedure**
To program a single-line/trunk:
[F4]→[F2]→[F8]→[F6]→Type trunk no.→[F10] or [F8]→[F5]→[F5]

To program a block of lines/trunks:
[F4]→[F2]→[F8]→Select block of lines→Toggle letter G On/Off→
[F5]→[F5]→[F5]

## Tie Trunk Answer Supervision Time

Use this procedure to specify the tie trunk answer supervision time in milliseconds. This is the time limit for the called system to respond.

### Summary: Tie Trunk Answer Supervision Time

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 3c, Incoming Trunks: Tie |
| **Factory Setting** | 300 ms |
| **Valid Entries** | 20 to 4,800 ms, in increments of 20 ms |
| **Inspect** | No |
| **Copy Option** | Yes |
| **Console Procedure** | LinesTrunks→TIE Lines→AnsSupvr→Dial trunk no.→ Enter→Drop→Dial no. of ms (20–4,800)→Enter→Back→Back |
| **PC Procedure** | [F4]→[F2]→[F9]→Type trunk no.→[F10]→[Alt]+[P]→ Type no. of ms (20–4,800)→ [F10]→[F5]→[F5] |

## Disconnect Time

Use this procedure to specify the tie trunk disconnect time limit in milliseconds.

### Summary: Disconnect Time

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 3c, Incoming Trunks: Tie |
| **Factory Setting** | 300 ms |
| **Valid Entries** | 140 to 2,400 ms |

| | |
|---|---|
| **Inspect** | No |
| **Copy Option** | Yes |
| **Console Procedure** | LinesTrunks→TIE Lines→Disconnect→Dial trunk no.→ Enter→Drop→Dial no. of ms (140–2,400)→Enter→Back→ Back |
| **PC Procedure** | F4 → F2 → F10 →Type trunk no.→ F10 → Alt + P → Type no. of ms (140–2,400)→ F10 → F5 → F5 |

# DID/DIOD Trunks

This section covers programming DID/DIOD trunks and includes procedures for the following:

- Block Assignment
- DID/DIOD Trunk Type
- Disconnect Time
- Expected Digits
- Delete Digits
- Add Digits
- Signaling
- Invalid Destination

**NOTE▶** These procedures apply to Hybrid/PBX mode only.

## Block Assignment

Use this procedure to assign each DID/DIOD trunk connected to the system to Block 1, 2, 3, or 4.

### Summary: Block Assignment

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 3d, Incoming Trunks: DID |
| **Factory Setting** | Block 1 |
| **Valid Entries** | Block 1, Block 2, Block 3, Block 4 |
| **Inspect** | Yes |
| **Copy Option** | Yes |

| **Console Procedure** | To program a single-line/trunk:<br>LinesTrunks→DID/DIOD→Block→Dial trunk block no. (1-4)→<br>Enter→Entry Mode→Type the line/trunk no.→<br>Enter or Delete→Back→Back→Back |
|---|---|
| | To program a block of lines/trunks:<br>LinesTrunks→DID/DIOD→Block→Dial trunk block no. (1-4)→<br>Enter→Select trunk lines→Toggle LED On/Off→Enter→Back→<br>Back→Back |
| **PC Procedure** | To program a single-line/trunk:<br>F4 → F4 → F1 →Type trunk block no. (1-4)→F10 →<br>Type the line/trunk no.→F10 or F8 → F5 → F5 → F5 |
| | To program a block of lines/trunks:<br>F4 → F4 → F1 →Type trunk block no.(1-4)→F10 →<br>Select trunk lines→Toggle letter G On/Off→F10 → F5 → F5 → F5 |

## DID Trunk Type

Use this procedure to specify the DID/DIOD trunk type as either immediate-start or wink-start. Wink-start is more reliable if the local telephone company supports it.

### Summary: DID Trunk Type

| **Programmable by** | System Manager |
|---|---|
| **Mode** | Hybrid/PBX |
| **Idle Condition** | DID/DIOD trunk idle |
| **Planning Form** | 3d, Incoming Trunks: DID/DIOD |
| **Factory Setting** | Wink-start |
| **Valid Entries** | Immediate-start, Wink-start |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | LinesTrunks→DID/DIOD→Type→Dial trunk block<br>no.→Enter→ Immed or Wink→Enter→Back→Back |
| **PC Procedure** | F4 → F4 → F2 →Type trunk block no.→F10 →Select Immed or<br>Wink→F10 → F5 → F5 |

## Disconnect Time

Use this procedure to specify the DID/DIOD trunk disconnect time limit in milliseconds.

### Summary: Disconnect Time

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 3d, Incoming Trunks: DID |
| **Factory Setting** | 500 ms |
| **Valid Entries** | 10 to 2,400 ms, in increments of 10 ms |
| **Inspect** | No |
| **Copy Option** | Yes |
| **Console Procedure** | LinesTrunks→DID/DIOD→Disconnect→Dial trunk no.→ Enter→Drop→Dial no. of ms (10–2,400)→ Enter→Back→Back |
| **PC Procedure** | [F4]→[F4]→[F3]→Type trunk no.→[F10]→[Alt]+[P]→ Type no. of ms (10–2,400)→[F10]→[F5]→[F5] |

## Expected Digits

Use this procedure to tell the system how many digits are sent by the local telephone company.

### Summary: Expected Digits

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 3d, Incoming Trunks: DID |
| **Factory Setting** | 3 digits |
| **Valid Entries** | 1 to 4 digits |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | LinesTrunks→DID/DIOD→ExpectDigit→Dial trunk block no. (1 or 2)→Enter→Drop→Dial no. of digits (1–4)→Enter→ Back→Back |
| **PC Procedure** | [F4]→[F4]→[F4]→Type trunk block no. (1 or 2)→[F10]→[Alt]+[P]→ Type no. of digits (1–4) [F10]→[F5]→[F5] |

## Delete Digits

Use this procedure to specify the number of leading digits to be deleted from the digits sent by the local telephone company. Use this procedure when the number of digits sent by the telephone company is greater than the number in the system numbering plan.

### Summary: Delete Digits

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 3d, Incoming Trunks: DID |
| **Factory Setting** | 0 digits |
| **Valid Entries** | 0 to 4 digits |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | LinesTrunks→DID/DIOD→DeleteDigit→Dial trunk block no. (1 or 2)→Enter→Drop→Dial no. of digits (0–4)→Enter→Back→ Back |
| **PC Procedure** | F4 → F4 → F6 →Type trunk block no. (1 or 2)→F10→Alt+P→ Type no. of digits (0–4)→F10→F5→F5 |

## Add Digits

Use this procedure to specify the number of leading digits that must be added to the digits sent by the local telephone company. Use this procedure when the number of digits sent by the telephone company is fewer than the number in the system numbering plan.

### Summary: Add Digits

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 3d, Incoming Trunks: DID/DIOD |
| **Factory Setting** | 0 |
| **Valid Entries** | 1 to 9999 |
| **Inspect** | No |
| **Copy Option** | No |

| | |
|---|---|
| **Console Procedure** | LinesTrunks→DID/DIOD→Add Digits→Dial trunk block no. (1 or 2)→ Enter→Drop→Dial added digits (1–9999)→Enter→ Back→Back |
| **PC Procedure** | F4 → F4 → F7 →Type trunk block no. (1 or 2)→F10 → Alt + P → Type added digits (1–9999)→F10 → F5 → F5 |

## Signaling

Use this procedure to specify whether the type of dialing signal from the local telephone company is ouch-tone, rotary or MFC. Touch-Tone dial mode cannot be programmed for immediate-start DID/DIOD trunks.

Touch-Tone single-line telephone users cannot make calls by 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 to the system. The central office receives both signals and cannot process the call.

### Summary: Signaling

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not Required |
| **Planning Form** | 3d, Incoming Trunks: DID/DIOD |
| **Factory Setting** | Rotary |
| **Valid Entries** | Rotary, Touch-Tone, MFC |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | LinesTrunks→DID/DIOD→Signaling→Dial trunk block no.→ Enter→Rotary, TouchTone or MFC→Enter→Back→Back |
| **PC Procedure** | F4 → F4 → F8 →Type trunk block no.→F10 → F1  F2 or F3 →F10 → F5 → F5 |

## Invalid Destination

Use this procedure to specify where to direct outside calls (received on DID/DIOD trunks) for unassigned extension numbers. Calls can be either directed to a backup position (normally the primary system operator) or given a fast busy signal. See "QCC Operator to Receive Call Types'' on page 3-95 for information on assigning a backup position.

## Summary: Invalid Destination

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 3d, incoming Trunks: DID |
| **Factory Setting** | Backup (calls are sent to the primary system operator) |
| **Valid Entries** | Send to Backup Extension, Return Fast Busy |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | LinesTrunks→DID→InvalDstn→Select Send to Backup Extension or Return Fast Busy→ Enter→Back→Back |
| **PC Procedure** | [F4]→[F4]→[F9]→Select Send to Backup Extension or Return Fast Busy→[F10]→[F5]→[F5] |

# Extensions

This section contains the following procedures:

■ Assigning outside lines or trunks to the buttons on a telephone (including lines and trunks used for loudspeaker paging)

■ Copying line button assignments from one extension to either an individual extension or a block of extensions

■ Assigning the following buttons on telephones (for Hybrid/PBX systems only):

— System Access or Intercom Voice
— System Access or Intercom Ring
— System Access or Intercom Originate Only
— Shared System or Intercom Access

■ Programming rotary signaling on tip/ring ports

## Assign Trunks or Pools to Extensions

Use this procedure to assign outside lines/trunks (connected to the control unit) to specific buttons on each telephone. The lines/trunks assigned to a button on a telephone are called Personal Lines.

This procedure is used only to change or add Personal Lines, Loudspeaker Paging, or Pool buttons (Hybrid/PBX only) to telephones. See "Assign Intercom or System Access Buttons" on page 3-66 to add or change Intercom (ICOM) or System Access (SA) buttons.

Individual lines/trunks can be assigned to a maximum of 64 extensions. Individual pools can be assigned as a Pool button on a maximum of 64 extensions.

The following lines/trunks cannot be assigned to a button on a telephone:

■ Lines/trunks used for Music-On-Hold

■ Lines/trunks used for maintenance alarms

NOTE▶ If you use equipment that rebroadcasts music or other copyrighted materials, you may be required to obtain a copyright license from and pay license fees to a third party (such as the American Society of Composers, Artists, and Producers or Broadcast Music Incorporated). Magic On Hold requires no such license and can be purchased from Lucent Technologies.

Pool buttons cannot be assigned to or removed from extensions unless the pool has trunks assigned. If all trunks are to be removed from a pool, all Pool button assignments must first be removed from extensions. Another way of handling this situation is to program another trunk into the pool and then remove the Pool button assignments from the extensions.

■ **Hybrid/PBX only**. Individual lines/trunks assigned to a pool can be assigned to a button only on a DLC operator position. If one of the lines/trunks in a pool is assigned to a button on a non-DLC telephone, the result is a Pool button assignment.

■ **Key only**. The system assigns the first eight line numbers to buttons on multiline telephones whether or not an outside line is physically connected. If a line is not connected, the button assignment must be removed so the user can assign a feature to the button.

■ **For the Transtalk 9031 wireless multiline telephone**. The system assigns the first eight lines connected to the control unit even though the telephone has fewer than eight buttons available. Remove the extra lines in system programming so that the appropriate number of lines is assigned to buttons on these telephones.

Lines and trunks are assigned to buttons in the order in which you press each line button on the system programming console or keyboard. Existing line assignments can be rearranged by removing all current assignments and then pressing the line buttons on the console or keyboard in the order in which they should appear on the buttons. For information on the order of the programmed buttons, refer to the button numbers on the applicable planning form for each telephone.

If you want to reserve some blank buttons for features between line buttons, a line must be assigned as a placeholder for each blank button. After all lines are assigned, remove the lines used as placeholders on the buttons reserved for features.

## Summary: Assign Trunks or Pools to Extensions

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All, but note differences in factory settings. |
| **Idle Condition** | Extension idle |
| **Planning Form** | 4l, Extension Copy: Multiline 4400-Series Telephone Template<br>4m, Multiline 4400-Series Telephone<br>4d, MLX Telephone<br>4e, MFM Adjunct: MLX Telephone<br>4f, Tip/Ring Equipment<br>4h, ETR Telephone<br>5b, Direct-Line Console (DLC)<br>5c, MFM Adjunct: DLC |
| **Factory Setting** | **Key Mode**. An Intercom Ring (ICOM Ring) button, an Intercom Voice (ICOM Voice) button, and the first eight lines connected to the control unit are assigned to all multiline 4400-Series telephones, ETR, and MLX telephones (excluding operator positions), and MFMs connected to MLX telephones. Two ICOM Ring buttons are assigned to 4400, 4400D, and single-line telephones; no outside lines are assigned.<br><br>**Behind Switch Mode**. Not supported in MERLIN MAGIX Integrated System Release 1.0i.<br><br>**Hybrid/PBX Mode**. System Access Ring (SA Ring), System Access Voice (SA Voice), and System Access Originate Only (SA Orig Only) buttons are assigned to all multiline 4400-Series telephones, ETR, and MLX telephones (excluding operator positions). Five Call buttons are assigned to QCC operator positions. Two SA Ring buttons and one SA Orig Only button are assigned to 4400, 4400D, and single-line telephones. No Personal Line or Pool buttons are assigned. |
| **Valid Entries** | Extension numbers |
| **Inspect** | Yes |
| **Copy Option** | Yes |
| **Console Procedure** | To program a single-line/trunk:<br>`Extensions`→`Lines/Trunks`→Dial ext. no.→ `Enter`→<br>`Entry Mode`→Dial line/trunk no.→`Enter`→`Back`→`Back`<br><br>To program a block of lines/trunks:<br>`Extensions`→`Lines/Trunks`→Dial ext. no.→`Enter`→<br>Select trunk range→Toggle LED On/Off→`Enter`→`Back`→`Back` |
| **PC Procedure** | To program a single-line/trunk:<br>F6 → F1 →Type ext. no.→ F10 → F6 →Type line/trunk no.→ F10 →<br>F5 → F5 |

To program a block of lines/trunks: →[F6]→[F1]→Type ext. no.→
[F10]→Select trunk range→Toggle letter G On/Off→[F10]→[F5]→[F5]

## Copy Line/Trunk Assignments

Use this procedure to copy outside line/trunk button assignments, pool dial-out code restrictions (Hybrid/PBX only), and (for operator positions only) Night Service information from one extension to another extension or block of extensions with identical requirements.

If you are copying assignments to a block of extensions and one of the extensions in the block is in use, the display shows the Station Busy - Pls Wait message. Copying for the rest of the extensions in the block is delayed until the busy extension becomes idle. The number of the busy extension is not shown. If a DSS is attached, the LED associated with the busy extension is on. If you exit instead of waiting for the busy extension to become idle, copying for the rest of the extensions is cancelled; however, the assignments that have already been copied are not cancelled.

If you are copying assignments from an operator position to a block of extensions that includes both operator and non-operator extensions, the information is copied to only the operator positions; the non-operator positions are not affected. Similarly, if you are copying assignments from a non-operator position to a block of extensions that includes both operator and non-operator extensions, the information is copied to only the non-operator positions; the operator positions are not affected. The system does not provide an error tone to signal that the copy did not work for all of the extensions in the block.

### Summary: Copy Line/Trunk Assignments

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Extension idle |
| **Planning Form** | 4l, Extension Copy: Multiline 4400-Series telephone Template<br>4c, Extension Copy: MLX Telephone Template<br>4g, Extension Copy: ETR Telephone Template |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Not applicable |
| **Inspect** | Yes: lines/pools assigned to an extension. |
| **Copy Option** | Not applicable |
| **Console Procedure** | To copy to a single extension:<br>Extensions→Line Copy→Single→Dial copy from ext. no.→<br>Enter→Dial copy to ext. no.→Enter→Back→Back |
| | To copy to a block of extensions:<br>Extensions→Line Copy→Block→Dial copy from ext. no.→<br>Enter→Dial ext. no. of first extension in block→Enter→<br>Dial ext. no of last extension in block→Enter→Back→Back |

**PC Procedure**　　To copy to a single extension:
[F6]→[F2]→[F1]→Type copy from ext. no.→[F10]→
Type copy to ext. no.→[F10]→[F5]→[F5]

To copy to a block of extensions:
[F6]→[F2]→[F2]→Type copy from ext. no.→[F10]→
Type ext. no. of first extension in block→[F10]→
Type ext. no. of last extension in block→[F10]→[F5]→[F5]

## Assign Intercom or System Access Buttons

Use this procedure to assign or change the assignments for Intercom (ICOM) buttons used to make and receive inside calls. This includes the following types of ICOM buttons:

■ Ring

■ Voice

■ Originate Only (Ring or Voice)

In Hybrid/PBX mode only, use this procedure to assign or change assignments for System Access (SA) buttons used to make or receive inside and outside calls. This procedure includes the following types of System Access buttons:

■ Ring

■ Voice

■ Originate Only (Ring or Voice)

■ Shared (Ring or Voice)

**NOTES▶** ■ You cannot change the factory setting for Call buttons assigned to QCC operator positions, and you cannot assign Ring, Voice, Originate Only, or Shared buttons to QCC operator positions. However, the Call 5 (Ring/Voice) button on a QCC can be programmed for Voice Announce. See "Voice Announce'' on page 3-100

　　　　 ■ System Access or Intercom buttons can be assigned to only the first 10 buttons on a multiline telephone. This allows for a combination of up to 10 SA or ICOM buttons for each telephone (excluding QCC operator positions).

　　　　 ■ You can remove SA or ICOM buttons, but at least one must remain on the extension.

Although you can make selections from the screen (with the `ListFeature` option) to assign Ring and Voice buttons, the following procedure provides the programming codes to perform these functions. Using the codes speeds the button assignment process.

**NOTES** ▶ ■ When 4400, 4400D, and single-line sets are programmed with only one SA or ICOM button, the Transfer, Conference and Drop features are disabled. Other features that require a second dial tone, such as Account Code/Number Entry, After Call Work States, Call Pickup, Call Waiting, and Privacy, are also affected. For more information, see the *Feature Reference*.

■ Each System Access Ring or Voice on an individual telephone can be assigned as a Shared System Access (SSA) button on up to 16 other extensions.

■ Shared SA buttons cannot be assigned to 4400, 4400D, and single-line telephones or other tip/ring equipment connected to an 016 (T/R) 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. Shared SA buttons cannot be assigned when the corresponding SA button is on a 4400, 4400D, and single-line telephone.

■ Each System Access Ring or Voice on an individual extension can be assigned as a SSA button on up to 27 other extensions

■ SA and ICOM buttons are centrally programmed and cannot be programmed by individual extension users.

## Summary: Assign Intercom or System Access Buttons

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All, but note differences in factory settings |
| **Idle Condition** | Extension idle |
| **Planning Form** | 4m, Multiline 4400-Series Telephone<br>4d, MLX Telephone<br>4e, MFM Adjuncts: MLX Telephone<br>4f, Tip/Ring Equipment<br>4h, ETR Telephone<br>5b, Direct-Line Console (DLC)<br>5c, MFM Adjunct (DLC) |
| **Factory Setting** | **Key Mode.** An Intercom Ring (ICOM Ring) button, an Intercom Voice (ICOM Voice) button, and the first eight lines connected to the system are assigned to all multiline 4400-Series and MLX telephones, excluding operator positions. Two ICOM Ring buttons are assigned to 4400 and 4400D Telephones and to tip/ring equipment connected to an 016 (T/R) module or to an 016 ETR port when the port is programmed for T/R operation. An ICOM Ring and an Intercom Originate Only (ICOM Orig Only) button are assigned to tip/ring equipment connected by an MFM. No outside lines are assigned.<br><br>**Behind Switch Mode.** Not supported with MERLIN MAGIX Integrated System Release 1.0i.<br><br>**All Modes.** System Access Ring (Hybrid/PBX mode) or Intercom Ring (Key and Behind Switch modes), System Access Voice (Hybrid/PBX mode) or Intercom Voice (Key and Behind Switch modes), and the first 18 through 29 lines connected to the control unit are assigned |

to all DLC operator positions. The number of lines assigned depends on the type of telephone used as a DLC operator position. Refer to the appropriate telephone planning form for details.

| | |
|---|---|
| **Valid Entries** | Not applicable. |
| **Inspect** | Yes: specific button options. |
| **Copy Option** | Yes. (You can copy additional SA buttons to another extension, but you cannot overwrite SA buttons that are already assigned.) |
| **Console Procedure** | To program an extension:<br>More→Cntr-Prg→Program Ext→Dial ext. no.→Enter→<br>Start→Select button→Dial feature code (*16 or *18)→Enter→<br>(repeat from beginning to program another button)→Back→Back |
| | To copy extension programming:<br>More→Cntr-Prg→Copy ext→Dial copy from ext. no.→<br>Enter→Dial copy to ext. no.→Enter→ Back→Back |
| **PC Procedure** | To program an extension:<br>PgUp→F4→F1→Type ext. no.→F10→F10→Select button→Type feature code (*16 or *18)→F10→(repeat from beginning to program another button)→F5→F5 |
| | To copy extension programming:<br>PgUp→F4→F2→Type copy from ext. no.→F10→<br>Type copy to ext. no.→F10→F5→F5 |

Although you can make selections from the screen (with the ListFeature option) to assign Ring and Voice buttons, using programming codes to perform these functions speeds the button assignment process.

Table 3-3 provides the programming codes for assigning Ring and Voice buttons. You can handle errors in data entry as follows:

- If you enter a code incorrectly while programming, the display shows the Programming Error message and the red LED next to the button flashes. If this happens, press the button again and repeat the procedure.

- If you make a mistake and program the wrong feature on a button, press the button, select Delete (F1 on the PC display), and press the button again.

**Table 3-3. Programming Codes for Assigning Buttons**

| To... | On the console... | On the PC... |
|---|---|---|
| Assign SA or ICOM Ring button | Dial *16 | Type *16 |
| Assign SA or ICOM Voice button | Dial *16, press button being programmed again, and dial *19 | Type *16, press V + function key for button being programmed again, and type *19 |
| Assign SA or ICOM Originate Only Ring button | Dial *18 | Type *18 |

**Table 3-3.  Programming Codes for Assigning Buttons**—*Continued*

| To... | On the console... | On the PC... |
|---|---|---|
| Assign SA or ICOM Originate Only Voice button | Dial *18, press button being programmed again, and dial *19 | Type *18, press V + function key for button being programmed again, and type *19 |
| Assign SA button | Dial *17, press the extension number of principal telephone [nnnn] then press the button number being shared [nn] | Type *17, press the extension number of principal telephone [nnnn] then press the button number of specific button being shared [nn] |
| Change current assignment for SA or ICOM Voice, Originate Only or Shared SA buttons from Voice to Ring | Dial **19 | Type **19 |

## Rotary Signaling on Tip/Ring Ports

Use this procedure to enable or disable rotary signaling on tip/ring ports. You can program any tip/ring port on an individual basis. The factory setting is that rotary signaling is disabled.

Whenever the system receives a rotary digit on a port, it determines if the port is programmed as rotary-enabled. If the port is rotary-enabled, the system processes the digit. If the port is not rotary-enabled, the digit is rejected. Touch-Tone digits are always accepted by the port, regardless whether it is rotary-enabled or not.

### Summary: Rotary Signaling on Tip/Ring Ports

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | System idle |
| **Planning Form** | 4f, Tip/Ring Equipment |
| **Factory Setting** | Touch-Tone |
| **Valid Entries** | Extension numbers for rotary dial telephones |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | Extensions→▶ or More→▶ or More→RotaryEnabl→ Type rotary ext. no.→Enter→Back→Back |

**PC Procedure**  〔F6〕→〔PgUp〕→〔F7〕→Type rotary ext. no.→〔F10〕→〔F5〕→〔F5〕

## Tip/Ring Functionality on 016 ETR Modules

Tip/ring functionality for ports on a 016 ETR module is not supported in MERLIN MAGIX Release 1.0i.

# Auxiliary Equipment

The procedures in this section describe the steps needed to perform the following:

■  Identify the line/trunk jacks used for Music-On-Hold, loudspeaker paging, and maintenance alarms.

■  Identify the extension jacks used for fax

■  Specify parameters for the MERLIN Messaging System, Octel 100 Messaging, and Intuity AUDIX.

## Music-On-Hold

Use this procedure to identify the line/trunk jack reserved for connection of a music source, such as a radio, tape player, or stereo system.

If you use equipment that rebroadcasts music or other copyrighted materials, you may be required to obtain a copyright license from and pay license fees to a third party [such as the American Society of Composers, Artists, and Producers (ASCAP) or Broadcast Music Incorporated (BMI)]. Magic On Hold requires no such license and can be purchased from your Lucent Technologies dealer.

Only one Music-On-Hold line/trunk jack is allowed per system.

You cannot assign the line/trunk identified for Music-On-Hold to a line/trunk pool. If the line/trunk is currently assigned to a pool, you must remove it before you program this option.

You cannot assign the line/trunk identified for use with Music-On-Hold to a button on any extension or as a Remote Access trunk, and you cannot use the line/trunk jack identified for Music-On-Hold for a loudspeaker paging system or maintenance alarm.

### Summary: Music-On-Hold

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All, but in Hybrid/PBX mode the line/trunk designated for Music-On-Hold cannot be assigned to a line/trunk pool. |
| **Idle Condition** | System idle |

| | |
|---|---|
| **Planning Form** | 2c, System Numbering: Line/Trunk Jacks |
| **Factory Setting** | Not Applicable |
| **Valid Entries** | Line/trunk number |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | AuxEquip→MusicOnHold→Dial line/trunk no.→Enter→Back |
| **PC Procedure** | F9 → F1 →Type line/trunk no.→ F10 → F5 |

## Loudspeaker Paging

Use this procedure to identify the line/trunk jack reserved for connection of loudspeaker paging equipment.

If you use equipment that rebroadcasts music or other copyrighted materials, you may be required to obtain a copyright license from and pay license fees to a third party (such as ASCAP or BMI). Magic On Hold requires no such license and can be purchased from your Lucent Technologies dealer.

A maximum of three single-zone or multizone loudspeaker paging systems can be connected to the system.

You cannot assign the line/trunk identified for loudspeaker paging equipment to a line/trunk pool. If the line/trunk is currently assigned to a pool, you must remove it before you program this option.

You cannot assign the line/trunk identified for loudspeaker paging equipment as a Remote Access line/trunk, and you cannot use its jack for Music-On-Hold or maintenance alarm.

### Summary: Loudspeaker Paging

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All, but in Hybrid/PBX mode the line/trunk designated for loudspeaker paging cannot be assigned to a line/trunk pool. |
| **Idle Condition** | Line/trunk idle |
| **Planning Form** | 2c, System Numbering: Line/Trunk Jacks |
| **Factory Setting** | Not Applicable |
| **Valid Entries** | Line/trunk numbers |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | AuxEquip→Ldspkr Pg→Dial line/trunk no.→Enter→Back |
| **PC Procedure** | F9 → F2 →Type line/trunk no.→ F10 → F5 |

## Fax Machines

Use this procedure to add a fax machine by assigning the extension jack used to connect the fax machine. To remove a fax machine and free the extension jack for another use, you must remove the extension jack assignment.

In addition, you can specify the extensions to receive a message-waiting indication (MWI) when a fax transmission is received, and specify the length of time before the system registers that a fax has arrived and sends the message-waiting indication.

A maximum of 16 fax machines can have the Fax Message Waiting feature. Additional fax machines (more than 16) can be installed, but these machines cannot have this feature.

You can specify up to four telephones to receive the message-waiting indication when a fax transmission is received. Note that fax machines can only send and not receive message-waiting indications.

### Summary: Fax Machines

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 4m, Multiline 4400-Series Telephone<br>4d, MLX Telephone<br>4e, MFM Adjunct: MLX Telephone<br>4f, Tip/Ring Equipment<br>4h, ETR Telephone<br>4j, MLS Telephone<br>5b, Direct-Line Console (DLC)<br>5c, MFM Adjunct: DLC |
| **Factory Setting** | 10 seconds |
| **Valid Entries** | 0 to 30 seconds |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | To program an extension for a fax machine:<br>AuxEquip→Fax→Extension→Dial ext. no.→Enter→Back<br><br>To have a message waiting light for a fax machine:<br>Fax→Extension→Dial ext. no.→Enter→Back→<br>Msg Waiting→Dial fax machine ext. no.→Enter→<br>Dial MWI ext. no.→Enter→Threshold→Drop→<br>Dial no. of seconds (0–30)→Enter→ Back→Back |

| **PC Procedure** | To program an extension for a fax machine: |
| | [F9]→[F3]→[F1]→Type ext. no.→[F10]→[F5] |

To have a message waiting light for a fax machine:
[F3]→[F1]→Type ext. no.→[F10]→[F5]→[F2]→
Type fax machine ext. no.→[F10]→Type MWI ext. no.→[F10]→[F3]→
[Alt]+[P]→Type no. of seconds (0–30)→[F10]→[F5]→[F5]

## Maintenance Alarms

Use this procedure to identify the line/trunk jack that connects an external alerting device that sounds or flashes when major maintenance problems occur.

You cannot assign the line/trunk identified for the maintenance alarm to a button on any telephone or as a Remote Access trunk, and you cannot use its line/trunk jack to connect a loudspeaker paging system or Music-On-Hold.

### Summary: Maintenance Alarms

| **Programmable by** | System Manager |
| --- | --- |
| **Mode** | All, but in Hybrid/PBX mode, the line/trunk designated for the maintenance alarm cannot be assigned to a line/trunk pool. |
| **Idle Condition** | System idle |
| **Planning Form** | 2c, System Numbering: Line/Trunk Jacks |
| **Factory Setting** | Not Applicable |
| **Valid Entries** | Line/trunk number |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | AuxEquip→MaintAlarms→Dial line/trunk no.→Enter→Back→Back |
| **PC Procedure** | [F9]→[F4]→Type line/trunk no.→[F10]→[F5]→[F5] |

## Voice Messaging System and Automated Attendant

Use this procedure to specify the Touch-Tone duration and the interval between digits in codes sent between a voice messaging system and the MERLIN MAGIX system. The Touch-Tone duration and interval between digit assignment must be the same as those programmed on the voice messaging system.

In addition, this procedure can be used to specify the number of rings before a call transferred to a local extension by the voice messaging system is sent to the backup position for both integrated and generic VMI ports. The number of rings cannot be programmed for individual voice messaging

Auxiliary Equipment

systems; the single setting applies for all. Use the Group Type procedure in "Optional Group Features'' on page 3-101 to assign VMI ports as either integrated or generic.

## Summary: Voice Messaging System and Automated Attendant

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | See forms packaged with application |
| **Factory Setting** | Touch-Tone duration: 100 ms<br>Interval between digits: 50 ms<br>Number of rings before transfer sent to backup: 4 |
| **Valid Entries** | Touch-Tone duration: 50 to 200 ms, in increments of25 ms<br>Interval between digits: 50 to 200 ms, in increments of 25 ms<br>Number of rings before transfer sent to backup: 0 to 9 |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | AuxEquip→VMS/AA→TransferRtn→Drop→<br>Dial no. of rings (0–9)→Enter→TT Duration→Drop→<br>Dial no. of ms (50–200 ms, in increments of 25 ms)→Enter→<br>TT Interval→Drop→Dial no. of ms (50–200 ms, in increments of<br>25 ms)→Enter→ Back→Back |
| **PC Procedure** | F9 → F6 → F1 → Alt + P →Type no. of rings(0–9)→ F10 →<br>F2 → Alt + P →Type no. of ms (50–200 ms, in increments of 25<br>ms)→ F10 → F3 → Alt + P →Type no. of ms (50–200 ms, in<br>increments of 25 ms)→ F10 → F5 → F5 |

# Optional Extension Features

The summaries in this section detail the steps in programming the following optional features:

- Extension Language
- Pool Dial-Out Code
- Calling Restrictions
- Copy Calling Restrictions
- ARS Restriction Level for Extensions
- Forced Account Code Entry
- Microphone Operation
- Authorization Codes
- Remote Call Forwarding
- Delayed Call Forwarding
- Trunk-to-Trunk Transfer
- Primary Cover Ring Delay
- Secondary Cover Ring Delay
- Group Coverage Ring Delay
- Hotline (single-line telephone only)
- Display Preference
- Service Observing

## Extension Language

Use this procedure to change the language for 4400-Series, ETR, and MLX display telephones.

### Summary: Extension Language

| | |
|---|---|
| **Programmable by** | Users and System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 4d, MLX Telephone |
| | 4h, ETR Telephone |
| | 4k, 4400/4400D Telephone |
| | 5b, Direct-Line Console (DLC) |
| | Data Form 1b, ISDN Terminal Adapter Data Workstation |
| **Factory Setting** | U.S. English |

| | |
|---|---|
| **Valid Entries** | U.S. English, Canadian French, Latin American Spanish, Brazilian Portuguese |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | To program a single extension:<br>▶ or More→Language→Extensions→Single→Dial ext. no.→<br>Enter→Select a language (U.S. English, Canadian French, Latin American Spanish, Brazilian Portuguese)→Enter→Back→Back |
| | To program a block of extensions:<br>▶ or More→Language→Extensions→Block→<br>Dial starting ext. no.→Enter→Dial ending ext. no.→Enter→<br>Select a language (U.S. English, Canadian French, Latin American Spanish, Brazilian Portuguese)→ Enter→Back→Back |
| **PC Procedure** | To program a single extension:<br>PgUp→F6→F2→F1→Type ext. no.→F10→Select a language (U.S. English, Canadian French, Latin American Spanish, Brazilian Portuguese)→F10→F5→F5 |
| | To program a block of extensions:<br>PgUp→F6→F2→F2→Type starting ext. no.→F10→<br>Type ending ext. no.→Select a language (U.S. English, Canadian French, Latin American Spanish, Brazilian Portuguese)→<br>F10→F5→F5 |

## Pool Dial-Out Code

Use this procedure to allow or restrict dialing pool dial-out codes and placing calls on specific line/trunk pools. The factory settings restrict all extensions from dialing any line/trunk pool dial-out code.

**NOTE** The factory settings allow all extensions to dial any line/trunk pool dial-out code. Entering a pool dial-out code and then deleting that code restricts the user from using the pool associated with the entered code.

### Summary: Pool Dial-Out Code

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Extension idle |
| **Planning Form** | 4m, Multiline 4400-Series Telephone<br>4k, 4400/4400D Telephone<br>4d, MLX Telephone<br>4e, MFM Adjunct: MLX Telephone<br>4f, Tip/Ring Equipment |

4h, ETR Telephone
5b, Direct-Line Console (DLC)
5c, MFM Adjunct (DLC)
5d, Queued Call Console (QCC)

| | |
|---|---|
| **Factory Setting** | Main pool: 70; All other pools: 890 to 899. All telephones are restricted from dialing any pool dial-out code. |
| **Valid Entries** | Pool numbers |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | Extensions→Dial OutCd→Dial ext. no.→Enter→ Dial pool dial-out code→Enter→Back→Back |
| **PC Procedure** | F6 → F3 →Type ext. no.→F10 →Type pool dial-out code→F10 → F5 → F5 |

## Calling Restrictions

Use this procedure to change individual extension calling restrictions to one of the following:

- Unrestricted
- Restricted from making all outgoing calls
- Restricted from making toll calls

⚠️**SECURITY ALERT:**

*Toll fraud can occur if extensions are not properly restricted.*

### Summary: Calling Restrictions

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Extension idle |
| **Planning Form** | 4m, Multiline 4400-Series Telephone<br>4k, 4400/4400D Telephone<br>4d, MLX Telephone<br>4e, MFM Adjunct: MLX Telephone<br>4f, Tip/Ring Equipment<br>4h, ETR Telephone<br>5b, Direct-Line Console (DLC)<br>5c, MFM Adjunct: DLC<br>5d, Queued Call Console (QCC) |
| **Factory Setting** | Unrestricted |
| **Valid Entries** | Unrestricted, Outward Restricted, Toll Restricted |

| | |
|---|---|
| **Inspect** | No |
| **Copy Option** | Yes |
| **Console Procedure** | Extensions→Restriction→Dial ext. no.→Enter→ Select restriction (Unrestricted, Outward restricted, or Toll Restricted)→Enter→Back |
| **PC Procedure** | F6 → F4 →Type ext. no.→F10 →Select restriction (Unrestricted, Outward restricted, or Toll Restricted)→F10 → F5 |

## Copy Calling Restrictions

Use this procedure to copy calling restrictions, Allowed Lists, and Disallowed Lists. Feature assignment must be completed for the "copy from" extension. These features can then be copied to an individual extension or block of extensions with identical calling restriction requirements.

If you are copying restrictions to a block of extensions and one of the extensions in the block is in use, the display shows the Station Busy – Pls Wait message. Copying for the rest of the extensions in the block is delayed until the busy extension becomes idle. The number of the busy extension is not shown. If a DSS is attached, the LED associated with the busy extension is on. If you exit instead of waiting for the busy extension to become idle, copying for the rest of the extensions in the block is cancelled; however, the restrictions that have already been copied are not cancelled.

If you are copying restrictions to a block of extensions, they must be sequentially numbered.

The extensions you are copying to and from can be both operator and nonoperator positions.

**NOTE** Dial-out code restrictions are not copied.

### Summary: Copy Calling Restrictions

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | "Copy to" extension or extensions idle |
| **Planning Form** | 4m, Multiline 4400-Series Telephone |
| | 4k, 4400/4400D Telephone |
| | 4d, MLX Telephone |
| | 4e, MFM Adjunct: MLX Telephone |
| | 4h, ETR Telephone |
| | 5b, Direct-Line Console (DLC) |
| | 5c, MFM Adjunct: DLC |
| | 5d, Queued Call Console (QCC) |
| **Factory Setting** | Not applicable |

| **Valid Entries** | Not applicable |
|---|---|
| **Inspect** | No |
| **Copy Option** | Not applicable |
| **Console Procedure** | To copy to a single extension:<br>Extensions→RestrctCopy→Single→Dial copy from ext. no.→Enter→Dial copy to ext. no.→Enter→Back→Back→Back |
| | To copy to a block of extensions:<br>Extensions→RestrctCopy→Block→Dial copy from ext. no.→Enter→Dial first no. in copy to block→Enter→Dial last no. in copy to block→Enter→Back→Back→Back |
| **PC Procedure** | To copy to a single extension:<br>F6→F6→F1→Type copy from ext. no.→F10→Type copy to ext. no.→F10→F5→F5→F5 |
| | To copy to a block of extensions:<br>F6→F6→F2→Type copy from ext. no.→F10→Type first copy no. in copy to block→F10→F5→F5→F5 |

## ARS Restriction Level for Extensions

Use this procedure to assign an ARS restriction level to an extension. Outgoing calls can be made only to routes that have a Facility Restriction Level (FRL) lower than or equal to that of the extension for which the call is being made. 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.

The restriction level assigned to extensions is opposite to the FRL assigned to routes, where 0 is the most and 6 is the least restrictive.

### Summary: Assigning ARS Restriction Level For an Extension

| **Programmable by** | System Manager |
|---|---|
| **Mode** | Hybrid/PBX only |
| **Idle Condition** | Not required |
| **Planning Form** | 4m, Multiline 4400-Series Telephone<br>4k, 4400/4400D Telephone<br>4d, MLX Telephone<br>4e, MFM Adjunct: MLX Telephone<br>4f, Tip/Ring Equipment<br>4h, ETR Telephone<br>5b, Direct-Line Console (DLC)<br>5c, MFM Adjunct: DLC<br>6g, Call Restriction Assignments and Lists |

| | | |
|---|---|---|
| **Factory Setting** | 3 | |
| **Valid Entries** | 0–6 (0 is most restrictive and 6 is least restrictive) | |
| **Inspect** | No | |
| **Copy Option** | No | |
| **Console Procedure** | `Extensions`→▶ or More→`ARS Restrict`→Dial ext. no.→`Enter`→`Drop`→Dial restriction level (0–6)→`Enter`→`Back` | |
| **PC Procedure** | `F6`→`PgUp`→`F6`→Type ext. no.→`F10`→`Alt`+`P`→ Type restriction level (0–6)→`F10`→`F5` | |

## Forced Account Code Entry

Use this procedure to assign or remove Forced Account Code Entry. When this feature is programmed on individual extensions, the user must enter a 1- to 16-digit account code before making an outside call.

### Summary: Forced Account Code Entry

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 4m, Multiline 4400-Series Telephone<br>4k, 4400/4400D Telephone<br>4d, MLX Telephone<br>4e, MFM Adjunct: MLX Telephone<br>4f, Tip/Ring Equipment<br>4h, ETR Telephone<br>5b, Direct-Line Console (DLC)<br>5c, MFM Adjunct: DLC<br>5d, Queued Call Console (QCC) |
| **Factory Setting** | Not assigned |
| **Valid Entries** | Assigned, not assigned |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | `Extensions`→`Account`→Toggle LED On/Off or dial ext. no.→ `Enter`→`Back`→`Back` |
| **PC Procedure** | `F6`→`F7`→Toggle letter `R` On/Off or type ext. no.→`F10`→`F5`→`F5` |

## Microphone Operation

Use this procedure to enable or disable microphones on MLX telephones (except QCC operator positions). When the microphone is disabled, users cannot use the speakerphone to conduct conversations.

**NOTE** The microphone cannot be disabled on MLX telephones used as QCC operator positions.

### Summary: Microphone Operation

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 4d, MLX Telephone<br>5b, Direct-Line Console (DLC) |
| **Factory Setting** | Enabled |
| **Valid Entries** | Enabled, Disabled |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | Extensions→▶ or More→Mic Disable→<br>Toggle LED On/Off or dial ext. no.→Enter→Back→Back |
| **PC Procedure** | F6 →PgUp→ F7 →Toggle letter R On/Off or type ext. no.→F10→<br>F5 → F5 |

## Authorization Codes

The Authorization Code feature allows you to pick up someone else's telephone, enter your authorization code, and complete a call with the restrictions that apply to your own telephone (home extension). This includes Toll Restrictions, Outward Restricted, FRL, Allowed Lists, Disallowed Lists, Forced Account Code Entry (FACE), Night Service Exclusion List, and Dial Access to Pools.

**NOTE** A user can activate Call Forwarding and Remote Call Forwarding by entering his or her home extension authorization code while at any telephone in the system; this is useful when activating Call Forwarding or Remote Call Forwarding at phantom stations. It is also useful when a single-line telephone extension needs a PAUSE character in the Remote Call Forwarding digit string.

Use this procedure to assign or remove an authorization code to an extension. The authorization code can range from 2 to 11 characters (0 – 9, *) and must be unique for each extension. An authorization code cannot begin with an "*."

If you are assigning authorization codes for a group of sequential extensions, begin programming the lowest extension number to take advantage of the `Next` screen key (see "Standard Procedures").

## Summary: Authorization Codes

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 6h, Authorization Codes |
| **Factory Setting** | Not assigned |
| **Valid Entries** | 2–11 characters (0–9, *) |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | `Extensions`→▶ or More→`Auth Code`→Dial ext. no.→`Enter`→ Dial authorization code (2–11 digits, 0–9, *)→ `Enter`→`Back`→`Back` |
| **PC Procedure** | `F6`→`PgUp`→`F9`→Type ext. no.→`F10`→Type authorization code (2–11 digits, 0–9, *)→`F10`→`F5`→`F5` |

## Remote Call Forwarding

Use this procedure to allow or disallow the Remote Call Forwarding capability, which permits users to forward calls to an outside number. Remote Call Forwarding must be enabled in order for an extension user to activate Centrex Transfer via Remote Call Forwarding.

If an extension with Remote Call Forwarding has one or more Personal Lines assigned, that extension can be assigned as the principal user, and calls received on that line are forwarded to outside numbers. See "Principal User for Personal Line'' on page 3-34.

**NOTES** ▸ ■ This feature is not recommended with loop-start lines with unreliable disconnect. See "Disconnect Signaling Reliability'' on page 3-24.

■ Ensure that the number of rings for Remote Call Forwarding is less than the Coverage Delay or the call will not forward.

■ Use the Forwarding feature.

## Summary: Remote Call Forwarding

| | |
|---|---|
| **Programmable by** | System Manager |

| | |
|---|---|
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 4m, Multiline 4400-Series Telephone |
| | 4k, 4400/4400D Telephone |
| | 4d, MLX Telephone |
| | 4e, MFM Adjunct: MLX Telephone |
| | 4f, Tip/Ring Equipment |
| | 4h, ETR Telephone |
| | 5b, Direct-Line Console (DLC) |
| | 5c, MFM Adjunct: DLC |
| | 5d, Queued Call Console (QCC) |
| **Factory Setting** | Disallowed |
| **Valid Entries** | Disallowed, allowed |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | Extensions→▶ or More→Remote Frwd→ |
| | Toggle LED On/Off or dial ext. no.→Enter→Back→Back |
| **PC Procedure** | F6→PgUp→F8→Toggle letter R On/Off or type ext. no.→F10→ |
| | F5→F5 |

## Delayed Call Forwarding

Delayed Call Forwarding allows a user to answer or screen a call arriving at an extension before the call is forwarded through Call Forwarding, Remote Call Forwarding, or Follow Me. The forwarding delay is the number of rings before the call is forwarded. This delay can range from 0 to 9 rings. If the forwarding delay is set to 0, the call is forwarded immediately.

NOTE▶ When Do Not Disturb is activated at an extension, it overrides Delayed Call Forwarding and the call is forwarded immediately.

Use this procedure to assign or remove Delayed Call Forwarding from an extension. If you are assigning Delayed Call Forwarding to a group of sequential extensions, begin by programming the lowest extension number to take advantage of the Next screen key (see "Standard Procedures").

### Summary: Delayed Call Forwarding

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 4m, Multiline 4400-Series Telephone |
| | 4d, MLX Telephone |
| | 4e, MFM Adjunct: MLX Telephone |

4f, Tip/Ring Equipment
4h, ETR Telephone
5b, Direct-Line Console (DLC)
5c, MFM Adjunct: DLC
5d, Queued Call Console (QCC)

| | |
|---|---|
| **Factory Setting** | 0 rings |
| **Valid Entries** | 0–9 rings |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | Extensions→▶ or More→Delay Frwd→Dial ext. no.→Enter→ Drop→Dial no. of delay rings (0–9)→Enter→Back→Back |
| **PC Procedure** | F6→PgUp→F10→Type ext. no.→F10→Alt+P→ Type no. of delay rings (0–9)→F10→F5→F5 |

## Trunk-to-Trunk Transfer

Use this procedure to enable or disable trunk-to-trunk transfer at an extension. When trunk-to-trunk transfer is disabled, users cannot transfer an outside call to an outside line.

### Summary: Trunk-to-Trunk Transfer

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 4m, Multiline 4400-Series Telephone |
| | 4k, 4400/4400D Telephone |
| | 4d, MLX Telephone |
| | 4e, MFM Adjunct: MLX Telephone |
| | 4f, Tip/Ring Equipment |
| | 4h, ETR Telephone |
| | 5b, Direct-Line Console (DLC) |
| | 5c, MFM Adjunct: DLC |
| | 5d, Queued Call Console (QCC) |
| **Factory Setting** | Disabled |
| **Valid Entries** | Enabled, Disabled |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | Extensions→▶ or More→▶ or More→TrkTransfer→ Toggle LED On/Off or dial ext. no.→Enter→Back→Back |
| **PC Procedure** | F6→PgUp→PgUp→F1→Toggle letter R On/Off or type ext. no.→ F10→F5→F5 |

## Primary Cover Ring Delay

Use this procedure to specify the following:

■ The delay before a Primary Cover button, programmed for Delay Ring, begins to ring audibly.

■ The delay, in addition to the Group Coverage Ring Delay, before sending calls to Group Coverage when the sender has Primary or Secondary Coverage and any receiver is available.

The Primary Cover Ring Delay is programmed for each sender's extension.

### Summary: Primary Cover Ring Delay

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 4m, Multiline 4400-Series Telephone<br>4k, 4400/4400D Telephone<br>4d, MLX Telephone<br>4e, MFM Adjunct: MLX Telephone<br>4f, Tip/Ring Equipment<br>4h, ETR Telephone<br>5b, Direct-Line Console (DLC)<br>5c, MFM Adjunct: DLC |
| **Factory Setting** | 2 rings |
| **Valid Entries** | 1–6 rings |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Extensions→▶ or More→▶ or More→Cover Delay→<br>Primary→Dial sender's extension→Enter→Dial no. of rings<br>(1–6)→Enter→Back |
| **PC Procedure** | F6 →PgUp→PgUp→F2 →F1 →Type sender's extension→F10 →<br>Type no. of rings (1–6)→F10 →F5 |

## Secondary Cover Ring Delay

Use this procedure to specify the delay, in addition to the fixed Secondary Coverage Delay Interval (two rings), before a Secondary Cover button programmed for Delay Ring begins to ring audibly.

The Secondary Cover Ring Delay is programmed for each sender's extension.

## Summary: Secondary Cover Ring Delay

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 4m, Multiline 4400-Series Telephone<br>4k, 4400/4400D Telephone<br>4d, MLX Telephone<br>4e, MFM Adjunct: MLX Telephone<br>4f, Tip/Ring Equipment<br>4h, ETR Telephone<br>5b, Direct-Line Console (DLC)<br>5c, MFM Adjunct: DLC |
| **Factory Setting** | 2 rings |
| **Valid Entries** | 1–6 rings |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | `Extensions`→▶ or More→▶ or More→`Cover Delay`→<br>`Secondary`→Dial sender's extension→`Enter`→Dial no. of rings<br>(1–6)→`Enter`→ `Back`→`Back` |
| **PC Procedure** | [F6]→[PgUp]→[PgUp]→[F2]→[F2]→Type sender's extension→[F10]→<br>Type no. of rings (1–6)→[F10]→[F5]→[F5] |

## Group Coverage Ring Delay

Use this procedure to specify the following:

■ The number of rings before sending calls to Group Coverage when the sender does not have Primary or Secondary Coverage or the receivers are not available, and the Group Coverage receiver is either a Calling Group only or the QCC queue only (no Group Cover buttons on multiline telephones)

■ The number of rings, in addition to the Primary Cover Ring delay, before sending calls to Group Coverage when the sender has Primary or Secondary Coverage and the receivers are available

The Group Coverage Ring Delay is programmed for each sender's extension.

## Summary: Group Coverage Ring Delay

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |

| | |
|---|---|
| **Planning Form** | 4m,Multiline 4400-Series Telephone<br>4k, 4400/4400D Telephone<br>4d, MLX Telephone<br>4e, MFM Adjunct: MLX Telephone<br>4f, Tip/Ring Equipment<br>4h, ETR Telephone<br>5b, Direct-Line Console (DLC)<br>5c, MFM Adjunct: DLC |
| **Factory Setting** | 3 rings |
| **Valid Entries** | 1–9 rings |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Extensions→▶ or More→▶ or More→Cover Delay→<br>Group→Dial sender's extension→Enter→Dial no. of rings<br>(1–9)→Enter→Back→Back |
| **PC Procedure** | F6 →PgUp→PgUp→ F2 → F3 →Type sender's extension→F10 →<br>Type no. of rings (1–9)→F10 → F5 → F5 |

## HotLine

Use this procedure to enable or disable the HotLine feature on a tip/ring single-line telephone or device.

### Summary: HotLine

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 4f, Tip/Ring Equipment |
| **Factory Setting** | Disabled |
| **Valid Entries** | Yes, No |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Extensions→▶ or More→▶ or More→HotLine→<br>Enter HotLine extension→Enter→Back→Back |
| **PC Procedure** | F6 →PgUp→PgUp→ F3 →Type HotLine extension→F10 → F5 →<br>F5 |

## Display Preference

Use this procedure to specify display preferences for incoming inside calls.

### Summary: Display Preference

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Factory Setting** | Calling Number |
| **Valid Entries** | Calling Name, Calling Number, Both |
| **Inspect** | No |
| **Copy Option** | Yes |
| **Console Procedure** | Extensions→▶ or More→▶ or More→DisplayPref→ Dial extension no.→Enter→Select display option (Calling Name, Calling Number, or Both)→Enter→ Back→Back |
| **PC Procedure** | F6 →PgUp →PgUp → F4 →Type extension no.→F10 → Select display option (Calling Name, Calling Number, or Both)→ F10 → F5 → F5 |

## Service Observing

Use this procedure to configure up to 16 Service Observing groups on a system. Each Service Observing group consists of one Service Observer and a list of the stations (up to the system maximum of 200) that the observer is allowed to monitor. A warning tone is programmed on a per group basis to provide an audible indication that a station is being observed.

**NOTE▶** Service Observing may be subject to federal, state, or local laws, rules, or regulations or require the consent of one or both of the call parties. You must check in your jurisdiction and comply with all applicable laws, rules, and regulations before using this feature. Failure to comply may result in severe penalties.

## Summary: Service Observing

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 4d, MLX Telephone<br>4m, Multiline 4400-Series Telephone<br>5b, Direct-Line Console (DLC)<br>11, Service Observing: Group Assignment |
| **Factory Setting** | Warning: Yes |
| **Valid Entries** | Warning: Yes, No |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | To assign a Service Observer to a Service Observing group:<br>Extensions→▶ or More→▶ or More→ServiceObs→<br>Observer→Dial group no. (1–32)→Enter→Dial ext. no. of Service<br>Observer→Enter or Delete→ Back→Back<br><br>To enable or disable Warning Tone on a per group basis:<br>Extensions→▶ or More→▶ or More→ ServiceObs→<br>Warning→Dial group no. (1–32)→Enter→Yes or No→<br>Enter→Back→Back<br><br>To assign a member extension to a Service Observing group:<br>Extensions→▶ or More→▶ or More→ServiceObs→<br>Members→Dial group no. (1–32)→Enter→Dial ext. no.→<br>Enter or Delete→Back→Back→Back |
| **PC Procedure** | To assign a Service Observer to a Service Observing group:<br>F6 →PgUp→PgUp→ F6 → F1 →Type group no. (1–32)→F10 →<br>Type ext. no. of Service Observer→F10 or F8 → F5 → F5<br><br>To enable or disable Warning Tone on a per group basis:<br>F6 →PgUp→PgUp→ F6 → F2 →Type group no. (1–32)→F10 →<br>F2 or F3 →F10 → F5 → F5<br><br>To assign a member extension to a Service Observing group:<br>F6 →PgUp→PgUp→ F6 → F3 →Type group no. (1–32)→F10 →<br>Type ext. no.→F10 or F8 → F5 → F5 → F5 |

# Optional Operator Features

The summaries in this section affect feature programming for both DLC and QCC operator positions and include the following:

■ Operator Hold Timer

■ DLC Operator Automatic Hold

QCC operator features are covered in the next section.

## Operator Hold Timer

Use this procedure to set the length of the operator hold timer for all DLCs and QCCs. If the system operator does not pick up the call within the time programmed, an abbreviated ring reminds the operator that a call is being held.

This option cannot be programmed for individual operator positions.

### Summary: Operator Hold Timer

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 6a, Optional Operator Features |
| **Factory Setting** | 60 seconds |
| **Valid Entries** | 10 to 255 seconds |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Operator→Hold Timer→Drop→Dial no. of seconds (10–255)→ Enter→Back |
| **PC Procedure** | [F3]→[F3]→[Alt]+[P]→Type no. of seconds(10–255)→[F10]→[F5] |

## DLC Operator Automatic Hold

Use this procedure to enable or disable the DLC Operator Automatic Hold feature for DLC operator positions. When this feature is enabled, it prevents accidental call disconnection.

### Summary: DLC Operator Automatic Hold

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 6a, Optional Operator Features |
| **Factory Setting** | Disabled |
| **Valid Entries** | Disabled, Enabled |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Operator→DLC Hold→Automatic Hold Enable or Automatic Hold Disable→Enter→Back |
| **PC Procedure** | F3 → F4 → F1 or F2 → F10 → F5 |

# QCC Optional Features

This section contains programming summaries for the following options for QCC operator positions:

- Hold Return

- Automatic Hold or Release

- Queue over Threshold

- Elevate Priority

- Calls-in-Queue Alert

- QCC Operator to Receive Call Types

- Call Type Queue Priority Level

- Message Center Operation

- Automatic or Manual Extended (Directed) Call Completion

- Return Ring

- Position Busy Backup

■ Voice Announce

**NOTE** These options are available in Hybrid/PBX mode only.

## Hold Return

Use this procedure to determine whether calls on hold are returned to the QCC queue or remain on hold, on the QCC operator console, after the hold timer has expired twice. After the hold timer expires the first time, the operator hears an abbreviated ring as a call-on-hold reminder. 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 for the first call. If the QCC operator does not pick up a call by the time the hold timer expires twice, the call can be programmed to either remain on hold or return to the QCC queue.

This option cannot be programmed for individual QCC operator positions. The single setting applies to all QCC operator positions.

### Summary: Hold Return

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 6a, Optional Operator Features |
| **Factory Setting** | Calls remain on hold |
| **Valid Entries** | Remain on hold, Return to QCC queue |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Operator→Queued Call→Hold Rtrn→Select Return to Queue or Remain on Hold→Enter→Back→Back |
| **PC Procedure** | F3→F2→F1→Select Return to Queue or Remain on Hold→F10→F5→F5 |

## Automatic Hold or Release

Use this procedure to specify whether a call in progress (on a Call button) is automatically put on hold (Automatic Hold) or disconnected (Automatic Release) when the operator presses another button.

This option cannot be programmed for individual QCC operator positions. The single setting applies to all QCC operator positions.

### Summary: Automatic Hold or Release

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 6a, Optional Operator Features |
| **Factory Setting** | Automatic Release |
| **Valid Entries** | Auto Hold, Auto Release |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Operator→Queued Call→HoldRelease→Select Auto Hold or Auto Release→Enter→Back→Back |
| **PC Procedure** | F3 → F2 → F2 →Select Auto Hold or Auto Release→ F10 → F5 → F5 |

## Queue over Threshold

Use this procedure to specify the maximum number of calls (threshold) in the QCC queue before system operators are notified with a tone that the threshold has been reached or exceeded. If the threshold is set to 0, operators are not notified.

### Summary: Queue over Threshold

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 6a, Optional Operator Features |
| **Factory Setting** | 0 |
| **Valid Entries** | 0 to 99 |
| **Inspect** | No |

| **Copy Option** | No |
|---|---|
| **Console Procedure** | Operator→Queued Call→Threshold→Drop→ Dial no. of calls (0–99)→Enter→Back→Back |
| **PC Procedure** | F3 → F2 → F3 → Alt +P →Type no. of calls(0–99)→ F10 → F5 → F5 |

## Elevate Priority

Use this procedure to specify the length of time before calls waiting in the QCC queue are automatically reprioritized to a higher level. If priority is set to 0, calls are not prioritized.

### Summary: Elevate Priority

| **Programmable by** | System Manager |
|---|---|
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | Form 6a, Optional Operator Features |
| **Factory Setting** | 0 seconds |
| **Valid Entries** | 0 and 5 to 30 seconds |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Operator→QueuedCall→ElvatePrior→Drop→Dial no. of seconds (0 and 5–30)→ Enter→Back→Back |
| **PC Procedure** | F3 → F2 → F4 → Alt +P →Type no. of seconds (0 and 5–30)→ F10 → F5 → F5 |

## Calls-In-Queue Alert

Use this procedure to specify whether each QCC operator is notified (with a single beep) when a new call enters the QCC queue.

### Summary: Calls-In-Queue Alert

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 6a, Optional Operator Features |
| **Factory Setting** | Disable |
| **Valid Entries** | Enable, Disable |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | Operator→Queued Call→InQue Alert→Dial ext. no.→ Enter→Select InQue Alert Enable or InQue Alert Disable→ Enter→Back→Back |
| **PC Procedure** | F3 → F2 → F6 →Type ext. no.→F10 →Select InQue Alert Enable or InQue Alert Disable→F10 → F5 → F5 |

## QCC Operator to Receive Call Types

Use this procedure to specify which QCC operators receive the following types of calls:

- Dial 0 calls (internal calls to the system operator)

- DID calls to invalid destinations (unassigned extension numbers)

- Calls to the Listed Directory Number (extension for the QCC queue)

- Calls programmed to return to the QCC queue (returning from directing, camped-on, held calls, and operator parked calls)

- Group Coverage calls

- Forward/Follow Me calls

The QCC queue can be a receiver for the maximum number of coverage groups (30).

**NOTES** ▶ ■ If you want a QCC operator position to operate as a message center (receiving returning parked and directed calls, Group Coverage calls, and calls to unassigned DID numbers), program the Message Center option before you assign the operator to receive call types.

■ This procedure does not include use of the menu options Follow/Frwd or QCC Ext. These two options are used to assign queue priorities and are not associated with individual QCC operators. See "Call Type Queue Priority Level" on page 3-97.

■ This procedure does not include programming the operator position to receive calls on individual lines or trunks.

■ Programming an operator position to receive DID calls to invalid destinations does not cause the calls to ring into the QCC queue unless you program such calls to be sent to a backup extension. When no operator is assigned to receive the call types, the call does not ring into the QCC queue, and the caller hears an error tone.

■ If a trunk assigned to ring into the QCC queue is to be assigned shared Remote Access, assign that trunk Remote Access before performing this procedure. See "Remote Access Features" on page 3-133.

### Summary: QCC Operator to Receive Call Types

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 6a, Optional Operator Features |
| **Factory Setting** | QCC operator receives the following calls:<br>Dial 0<br>Unassigned DID<br>Listed Directory Number<br>Returning |
| **Valid Entries** | Not applicable |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | Operator→Queued Call→Call Types→Select a call type→Operator→Dial coverage group no.→Enter→Dial ext. no.→Enter→Back→Back→Back→Back→Back |
| **PC Procedure** | F3 → F2 → F7 →Select a call type→ F2 →Type coverage group no.→ F10 →Type ext. no.→ F10 → F5 → F5 → F5 → F5 → F5 |

## Call Type Queue Priority Level

Use this procedure to assign a priority value (1 to 7) that determines the order in which calls programmed to ring into the QCC queue are sent to QCC system operator positions. A value of 1 is the highest priority. The QCC queue priority level is assigned for the following types of calls:

■ Dial 0 calls (internal calls to the system operator)

■ DID calls to invalid destinations (unassigned extension numbers)

■ Calls to the Listed Directory Number (extension for the QCC queue)

■ Calls programmed to return to the QCC queue (returning from extending, camped-on, held calls, and operator parked calls)

■ Group Coverage calls

■ Calls signed in (Follow) or forwarded to the system operator

■ Calls to a system operator extension number

This procedure does not include programming the QCC queue priority level for individual lines or trunks to ring into the queue. See "QCC Queue Priority Level" on page 3-35.

### Summary: Call Type Queue Priority Level

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 6a, Optional Operator Features |
| **Factory Setting** | 4 |
| **Valid Entries** | 1 to 7 |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Operator→Queued Call→Call Types→Select call type→Priority→Dial group coverage number (1–30)→Enter→Drop→Dial priority level (1–7)→Enter→Back→Back→Back→Back |
| **PC Procedure** | F3 → F2 → F7 →Select call type→ F1 →Type Group Coverage number (1–30)→ F10 → Alt + P →Type priority level (1–7)→ F10 → F5 → F5 → F5 → F5 |

## Message Center Operation

Use this procedure to designate one or more QCC operator positions to operate as a message center. The following options are automatically set for the message center position:

■ Incoming calls are not directed to this position

■ Returning calls are directed to this position (return from extending and operator parked calls)

■ All group coverage calls are directed to this position

■ All DID calls to invalid destinations are directed to this position

Designating message center operation does not change any call type option programming, except that the call types mentioned above are added to the calls received at the QCC Message Center.

### Summary: Message Center Operation

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 6a, Optional Operator Features |
| **Factory Setting** | Not applicable |
| **Valid Entries** | QCC extension numbers |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | Operator→Queued Call→Msg Center→Dial ext. no.→ Enter→Back→Back→Back |
| **PC Procedure** | [F3]→[F2]→[F8]→Type ext. no.→[F5]→[F5]→[F5] |

## Extended (Directed) Call Completion

Use this procedure to specify one of the two basic options shown below for QCC operator positions with a DSS only:

■ Automatic Completion. Allows one-touch call transfer—that is, calls are transferred by touching only an extension button on the DSS. The operator does not have to press the release button.

■ Manual Completion. QCC operators must press the release button to direct a call using a DSS.

This option cannot be programmed for individual QCC operator positions. The setting applies to all QCC operator positions.

## Summary: Extended (Directed) Call Completion

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 6a, Optional Operator Features |
| **Factory Setting** | Automatic Extended Completion |
| **Valid Entries** | Automatic, Manual |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Operator→Queued Call→ExtndComplt→Select Automatic Complete or Manual Complete→Enter→Back→Back |
| **PC Procedure** | F3 → F2 → F9 →Select Automatic Complete or Manual Complete→F10 → F5 → F5 |

## Return Ring

Use this procedure to specify the number of rings before an unanswered directed call is returned to the QCC queue or QCC Message Center position.

This option cannot be programmed for individual QCC operator positions. The setting applies to all QCC operator positions.

NOTE▶ If you want unanswered calls to proceed to voice mail, lengthen the return ring setting.

## Summary: Return Ring

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 6a, Optional Operator Features |
| **Factory Setting** | 4 rings |
| **Valid Entries** | 1 to 15 rings |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Operator→Queued Call→Return Ring→Drop→ Dial no. of rings (1–15)→Enter→Back→Back |

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

**PC Procedure**    [F3]→[F2]→[F10]→[Alt]+[P]→Type no. of rings (1–15)→[F10]→
[F5]→[F5]

---

## Position Busy Backup

Use this procedure to designate or remove the Calling Group to provide the backup position for the QCC queue. The specified Calling Group receives incoming calls when all QCC operator positions are in position-busy mode.

Position Busy Backup is programmed for the QCC queue rather than for individual QCC operator positions. The Calling Group designated as the QCC queue backup serves as the backup for the Remote Access feature and as backup when the QCC is being used as the system programming console.

Only one Position Busy Backup can be programmed per system.

### Summary: Position Busy Backup

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 6a, Optional Operator Features |
| **Factory Setting** | No backup |
| **Valid Entries** | Calling Group number |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Operator→Queued Call→▶ or More→QCC Backup→Drop→Dial ext. number→Select Enter or Delete→Back→Back |
| **PC Procedure** | [F3]→[F2]→[PgUp]→[F1]→[Alt]+[P]→Type ext. number→Select Enter or Delete→[F5]→[F5] |

---

## Voice Announce

Use this procedure to enable or disable Voice Announce for the QCC.

When Voice Announce is enabled, every QCC in the system has one Voice Announce Call button, the Call 5 (Ring/Voice) button. All Intercom calls that originate from a QCC Call 5 (Ring/Voice) button are delivered as Voice Announce calls.

When Voice Announce is disabled, all Intercom calls originating at the QCC Call buttons are Intercom Ringing calls.

## Summary: Voice Announce

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 6a, Optional Operator Features |
| **Factory Setting** | Disabled |
| **Valid Entries** | Disabled, Enabled |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Operator→Queued Call→▶ or More→Voice Annc→Select Enabled or Disabled→Enter→Back→Back |
| **PC Procedure** | F3 → F2 → PgUp → F2 →Select Enabled or Disabled→ F10 → F5 → F5 |

# Optional Group Features

This section contains programming summaries for the following optional features:

- Pickup Groups
- Group Paging
- Group Coverage Member Assignments
- Group Calling Member Assignments
- Group Calling Line/Trunk or Pool Assignments
- Priority Call Queuing for Group Calling

## Pickup Groups

Use this procedure to assign or remove an extension from a call pickup group. A pickup group consists of telephone users who can answer each other's calls either by pressing a button or by dialing a code.

**NOTES**▶
- A maximum of 30 pickup groups, with a maximum of 15 extensions per group, is allowed.
- An extension can belong to only one group.
- Before reassigning an extension to a new group, you must remove it from its current group.

**Summary: Pickup Groups**

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 7a, Pickup Groups |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Pickup group number, extension number |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | Extensions→Call Pickup→Dial pickup group no.→Enter→ Dial ext. no.→Enter→Enter→ Back→Back |
| **PC Procedure** | F6 →F9 →Type pickup group no.→F10 →Type ext. no.→F10 → F5 →F5 |

## Group Paging

Use this procedure to assign or remove an extension from a Paging Group. A Paging Group consists of telephone users who hear common announcements over the telephone speakerphone. Only multiline 4400-Series, ETR, and MLX telephones with speakerphones can be members of a Paging Group.

A maximum of six Paging Groups with a maximum of 10 extensions per group is allowed. A seventh Paging Group, called the Page All group, is not limited and includes all telephones connected to the system. Extensions cannot be added to or removed from the Page All group.

To reassign an extension to a new Paging Group, just assign it; the extension is automatically removed from its old Paging Group.

**Summary: Group Paging**

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 7b, Group Paging |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Extension number |
| **Inspect** | Yes |
| **Copy Option** | No |

| | |
|---|---|
| **Console Procedure** | `Extensions`→▶ or More→`Group Page`→Dial Paging Group no.→`Enter`→Dial ext. no.→`Enter`→`Back`→`Back` |
| **PC Procedure** | `F6`→`PgUp`→`F2`→Type Paging Group no.→`F10`→Type ext. no.→ `F10`→`F5`→`F5` |

## Group Coverage Member Assignments

Use this procedure to assign or remove an extension from a coverage group. A coverage group is a group of senders. Coverage is an arrangement in which calls from a group of senders are redirected to one or more receivers.

**NOTE** ■ This procedure assigns senders. Before you begin, make certain that the receivers for the coverage group are also programmed. Receivers can be assigned through individual or centralized telephone programming.

A maximum of 30 coverage groups are allowed, each with an unlimited number of members. Up to eight receivers can be assigned per coverage group.

An extension can be a sender in only one group; it can be a receiver for more than one coverage group. A Calling Group can be assigned as a receiver for a coverage group (see "Group Coverage Receiver" on page 3-109). In Hybrid/PBX mode only, the QCC queue can be a receiver for up to 30 coverage groups. See "QCC Operator to Receive Calls" on page 3-36.

If the sender's extension has one or more Personal Lines assigned, the sender can be assigned as the principal user so that calls received on the Personal Line are sent to receivers programmed for Individual or Group Coverage. See "Principal User for Personal Line" on page 3-34.

To reassign an extension to a new coverage group, just make the assignment; the extension is automatically removed from its old group.

### Summary: Group Coverage Member Assignments

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 7c, Group Coverage |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Extension numbers |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | `Extensions`→▶ or More→`Group Cover`→Dial group no. (1–30)→`Enter`→Dial ext. no.→`Enter`→ `Back`→`Back` |

**PC Procedure**  $\boxed{\text{F6}}$ → $\boxed{\text{PgUp}}$ → $\boxed{\text{F3}}$ →Type group no. (1–30)→ $\boxed{\text{F10}}$ →Type ext. no.→
$\boxed{\text{F10}}$ → $\boxed{5}$ → $\boxed{\text{F5}}$

---

## Group Calling Member Assignments

Use this procedure to assign or remove an extension to or from a Calling Group. A Calling Group is used to direct calls to a group of people who all handle the same type of call. A single extension number is assigned to the group and is used by both inside and outside callers to reach the group.

To reassign an extension to a new Calling Group, you must remove it from its old group before programming the new assignment.

**NOTES** ▸ ■ If a linear hunting pattern is indicated on the back of the system planning form (6d), be sure to assign extensions to the group in the exact order that they are shown on the form. The system searches for an available member in the order in which you assign the extensions to the group.

■ A maximum of 32 Calling Groups with a maximum of 20 extensions per group is allowed.

■ An extension can belong to only one Calling Group. A QCC cannot be a member of a Calling Group. A delay announcement device should not be programmed as a Calling Group member.

■ The extension status feature must be set to the Calling Group or CMS mode before you assign members to the group. See "Extension Status" on page 3-123.

### Summary: Group Calling Member Assignments

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 7c, Group Coverage |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Extension numbers |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | Extensions→▶ or More→Grp Calling→Members→ Dial Calling Group ext. no.→Enter→Dial ext. no.→ Enter→ Back→Back→Back |
| **PC Procedure** | $\boxed{\text{F6}}$ → $\boxed{\text{PgUp}}$ → $\boxed{\text{F4}}$ → $\boxed{\text{F9}}$ →Type Calling Group ext. no.→ $\boxed{\text{F10}}$ → Type ext. no.→ $\boxed{\text{F10}}$ → $\boxed{\text{F5}}$ → $\boxed{\text{F5}}$ → $\boxed{\text{F5}}$ |

## Group Calling Line/Trunk or Pool Assignments

Use this procedure to assign or remove lines, trunks, or pools (Hybrid/PBX only) that ring directly into a Calling Group.

Incoming calls on each line/trunk or pool can be directed to only one Calling Group.

To reassign a line/trunk or pool to a new Calling Group, you must remove it from its old group before making the new assignment.

### Summary: Group Calling Line/Trunk or Pool Assignments

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 7d, Group Calling |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Line, trunk, or pool number |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | Extensions→▶ or More→Grp Calling→Line/Pool→ Dial Calling Group ext. no.→Enter→Dial line/trunk no.→Enter→ Back→Back→Back |
| **PC Procedure** | [F6]→[PgUp]→[F4]→[F10]→Type Calling Group ext. no.→[F10]→ Type line/trunk no.→[F10]→[F5]→[F5]→[F5] |

## Priority Call Queuing

Use this procedure to establish a supportive relationship between Calling Groups. Calls that arrive in one Calling Group (a home group) can be processed by another Calling Group (a support group) when no one from the first Calling Group is available to answer the call.

A Calling Group can be assigned a priority level between 1 (highest priority) and 32 (lowest priority) and then designated as a support group for a home group. There can be only one support group per home group. Each support group can support up to 31 home groups.

### Summary: Priority Call Queuing

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not Required |
| **Planning Form** | 7d, Group Calling |
| **Factory Setting** | 16 |
| **Valid Entries** | Priority Level (1 to 32) |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | `Extensions`→▶ or More→`Grp Calling`→▶ or More→ `Priority`→Enter extension number of group→ `Enter`→ Enter Group Priority (1–32)→(To program the next group, select `Next`)→`Enter`→`Back`→ `Support`→Enter extension number of group→ `Enter`→Enter Support Group→(To program the next group, select `Next`)→ `Enter`→`Back`→`Back`→`Back` |
| **PC Procedure** | `F6`→`PgUp`→`F4`→`PgUp`→`F3`→Type extension number of group→`F10`→Type Group Priority (1–32)→(To program the next group, press `F9`)→ `F10`→`F5`→`F4`→Type extension number of group→`F10`→Type support group→(To program the next group, press `F9`)→`F10`→`F5`→`F5`→`F5` |

## Optional Group Calling Features

This section includes programming summaries for the following optional group calling features:

■ Hunt Type

■ Group Calling Delay Announcements

■ Group Calling Announcement Interval

■ Group Calling Repeat Announcement

■ Group Coverage Receiver

■ Group Calling Overflow and Thresholds

■ Group Calling Message-Waiting Indicator

■ Group Calling Calls-in-Queue Alarm Threshold

■ Group Calling External Alert for Calls-in-Queue Alarm

■ Group Type

■ Queue Control

## Hunt Type

Use this procedure to assign one of the following hunt-type patterns to Calling Groups:

- **Circular Hunting Pattern**. The system distributes calls to group members by hunting in a circular pattern for the first available extension after the one that received the last call to the group.

- **Linear Hunting Pattern**. The system searches for an available group member in the order in which the extensions were assigned to the Calling Group.

- **Most Idle Hunting Pattern**. The system searches for the available member that is "most idle." This distribution scheme can be more equitable than the circular hunting pattern.

### Summary: Hunt Type

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 7d, Group Calling |
| **Factory Setting** | Circular hunting pattern |
| **Valid Entries** | Circular, Linear, Most Idle |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Extensions→▶ or More→Grp Calling→Hunt Type→Dial Calling Group ext. no.→Enter→Circular, Linear, or Most Idle→Enter→Back→Back→Back |
| **PC Procedure** | F6→PgUp→F4→F1→Type Calling Group ext. no.→ F10→F1 or F2 or F3→F10→F5→F5→F5 |

---

## Group Calling Delay Announcements

Use this procedure to designate the announcement devices used to play messages to callers while they are waiting in the queue.

Two announcement devices can be designated for each Calling Group; however, more than one Calling Group can use the same announcement device. The extensions to which the delay announcement devices are connected should not be programmed as a Calling Group member.

If the extension jack or MFM was previously programmed as a regular extension, you must remove all line/trunk button assignments before you designate the extension jack as a delay announcement device.

### Summary: Group Calling Delay Announcement

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |

| | |
|---|---|
| **Idle Condition** | Not required |
| **Planning Form** | 7d, Group Calling |
| **Factory Setting** | No delay announcement devices are assigned |
| **Valid Entries** | Primary Announcement, Secondary Announcement |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Extensions→▶ or More→Grp Calling→DelayAnnce→ Dial Calling Group ext. no.→Enter→ Select Primary Announcement or Secondary Announcement→ Enter extension number of announcement device→Enter→Back→ Back→Back |
| **PC Procedure** | F6 →PgUp→ F4 → F2 →Type Calling Group ext. no.→F10 → Select Primary Announcement or Secondary Announcement→ Enter ext. no. of announcement device→F10 → F5 → F5 |

## Group Calling Announcement Interval

Use this procedure to set the delay before the secondary announcement is played and/or repeated.

### Summary: Group Calling Announcement Interval

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 7d, Group Calling |
| **Factory Setting** | 0 (disabled) |
| **Valid Entries** | 0–900 seconds |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Extensions→▶ or More→Grp Calling→DelayAnnce→ Dial Calling Group ext. no.→Announcement Interval→ Enter the Announcement Interval (0–900)→Enter→ Back→Back |
| **PC Procedure** | F6 →PgUp→ F4 → F2 →Type Calling Group ext. no.→ F3 → Type the Announcement Interval (0–900)→F10 → F5 → F5 |

## Group Calling Repeat Announcement

Optional Group Calling Features

Use this procedure to set the secondary announcement to repeat after the Announcement Interval.

## Summary: Group Calling Repeat Announcement

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 7d, Group Calling |
| **Factory Setting** | No repeat |
| **Valid Entries** | Yes, No |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Extensions→▶ or More→Grp Calling→DelayAnnce→ Dial Calling Group ext. no.→Enter→Repeat Announcement→Select Yes or No→Enter→Back→Back |
| **PC Procedure** | F6→PgUp→F4→F2→F4→Type Calling Group ext. no.→ Select Yes or No→F10→F5→F5 |

Although you can make selections from the screen (with the ListFeature option) to assign Ring and Voice buttons, the following procedure provides the programming codes to perform these functions. Using the codes speeds the button assignment process.

## Group Coverage Receiver

Use this procedure to assign or remove a Calling Group as a receiver for a coverage group.

Calling Group member assignments must be made before you assign the group as a receiver for a coverage group.

## Summary: Group Coverage Receiver

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 7c, Group Coverage |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Group numbers |
| **Inspect** | Yes |
| **Copy Option** | No |

| **Console Procedure** | Extensions→▶ or More→Grp Calling→Grp Coverage→ Dial Calling Group ext. no.→Enter→Dial coverage group no.→ Enter→Back→Back→Back |
|---|---|
| **PC Procedure** | F6 →PgUp→ F4 → F3 →Type Calling Group ext. no.→F10 → Type coverage group no.→F10 → F5 → F5 → F5 |

## Group Calling Overflow and Thresholds

Use this procedure to designate either another Calling Group or the QCC queue (Hybrid/PBX only) to receive overflow calls. This procedure also specifies Overflow Threshold and methods.

Call overflow occurs in one of the three following ways:

■   The number of calls waiting in the queue for a Calling Group is equal to or greater than the programmed threshold (Overflow Threshold).

■   The time that a call has spent in the queue exceeds the programmed timeout value (Overflow Threshold Time).

■   A caller responds to a voice prompt by pressing the # key to indicate that his or her call should be handled as an overflow call. For example, a delay announcement may specify that a caller can press # to leave a message with voice mail or an operator.

If the Overflow Threshold Time is set to 0 seconds (factory setting), then overflow by time is turned off. Prompt-based overflow distribution can coexist with either or both of the other methods. Overflow distribution based on the number of calls in the queue or the time spent in the queue takes precedence over calls that go to overflow because of the caller's prompt.

Overflow coverage can be provided only by Calling Groups or the QCC queue (Hybrid/PBX only), not by individual extensions.

A Calling Group or the QCC queue (Hybrid/PBX only) can provide overflow coverage for more than one Calling Group; however, the particular group whose calls go to an available member in the overflow Calling Group is unpredictable.

The factory-set extension number for the QCC Listed Directory Number is 800.

### Summary: Group Calling Overflow and Thresholds

| **Programmable by** | System Manager |
|---|---|
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 7d, Group Calling |
| **Factory Setting** | Overflow coverage: none<br>Threshold: 1 call<br>Timeout: 0 sec<br>Prompt-based overflow: Disabled |

Optional Group Calling Features

| Valid Entries | Overflow coverage: Backup extension number |
| --- | --- |
| | Threshold: 1 to 99 calls |
| | Timeout: 0 to 900 seconds |
| | Prompt-based overflow: Enabled, Disabled |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Extensions→▶ or More→Grp Calling→Overflow→ Dial Calling Group ext. no.→Enter→Dial overflow ext. no.→ Enter→Number Based Overflow→Drop→Dial no. of calls (1-99)→Enter→Time Based Overflow→Drop→ Dial no. of seconds(0-900)→Enter→Prompt Based Overflow→ Select Yes or No→Enter→Back→ Back→Back |
| **PC Procedure** | F6 →PgUp→ F4 → F8 →Type Calling Group ext. no.→F10 → Type overflow ext. no.→F10 → F1 → Alt +P →Type no. of calls(1-99)→F10 → F2 → Alt +P →Type no. of seconds(0-900)→F10 → F3 →Select Yes or No→F10 → F5 → F5 → F5 |

## Group Calling Message-Waiting Indicator

Use this procedure to designate the extension to receive message-waiting indications (MWIs) for the Calling Group.

Only one extension can be designated as a message-waiting receiver for each Calling Group; however, more than one Calling Group can use the same message-waiting receiver. The extension assigned as a message-waiting receiver does not have to be a member of the Calling Group.

Message-waiting indications cannot be sent to the extension 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.

### Summary: Group Calling Message-Waiting Indicator

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 7d, Group Calling |
| **Factory Setting** | No message-waiting receiver assigned |
| **Valid Entries** | Extension number |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Extensions→▶ or More→Grp Calling→Message→ Dial Calling Group ext. no.→Enter→Dial ext. no. for MWI receiver→Enter→Back→Back |
| **PC Procedure** | F6 →PgUp → F4 → F4 →Type Calling Group ext. no.→F10 → Type ext. no. for MWI receiver→F10 → F5 → F5 |

## Group Calling Calls-In-Queue Alarm Thresholds

Use this procedure to specify the number of unanswered calls that wait in the Calling Group queue before group members are notified with either an external alert (an external alert is turned on when the third threshold is met) or a light on the telephone. Group members are notified when the number of calls waiting in the queue is equal to or greater than the programmed thresholds as follows:

- First Threshold, flashing light

- Second Threshold, winking light

- Third Threshold, solid light

NOTE▶ To configure only one threshold, set all thresholds to the same number. The LED states are off and on. To configure only two thresholds, set two of the thresholds to be the same number.

### Summary: Group Calling Calls-In-Queue Alarm Thresholds

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 7d, Group Calling |
| **Factory Settings** | 1 call, for all Thresholds |

| | |
|---|---|
| **Valid Entries** | 1 to 99 |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | `Extensions`→▶ or More→`Grp Calling`→`Queue Alarm`→ Dial Calling Group ext. no.→`Enter`→Select `Alarm Threshold 1` or `Alarm Threshold 2` or `Alarm Threshold 3`→Drop→ Dial no. of calls (1–99)→ `Enter`→`Back`→`Back` |
| **PC Procedure** | `F6`→`PgUp`→`F4`→`F6`→Type Calling Group ext. no.→ `F10`→`Alt`+`P`→Select `Alarm Threshold 1` or `Alarm Threshold 2` or `Alarm Threshold 3`→Type no. of calls (1–99)→`F10`→ `F5`→`F5` |

## Group Calling External Alert for Calls-In-Queue Alarm

Use this procedure to designate the external alert device used to notify Calling Group members when the number of calls in the queue reaches the programmed Threshold 3.

Only one external alert device can be designated for each Calling Group. Since the external alert signal is continuous, it is recommended that only light-type external alert devices be designated for the Calls-in-Queue alarm.

### Summary: Group Calling External Alert for Calls-In-Queue Alarm

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 7d, Group Calling |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Extension number |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | `Extensions`→▶ or More→`Grp Calling`→`Xtnl Alert`→ Dial Calling Group ext. no.→`Enter`→Drop→Dial ext. no. for alert→ `Enter`→`Back`→`Back` |
| **PC Procedure** | `F6`→`PgUp`→`F4`→`F7`→Type Calling Group ext. no.→`F10`→ `Alt`+`P`→Type ext. no. for alert→`F10`→`F5`→`F5` |

## Group Type

Use this procedure to determine whether or not the system automatically logs in members of a Calling Group after a power failure. This setting also determines the type of voice messaging interface when the Calling Group is used to connect voice messaging or Automated Attendant applications. The settings are listed below.

■ **Automatic Log Out**. Used for Calling Groups to specify that the system does not automatically log in Calling Group members after a power failure. Calling Group members must manually log themselves into the group.

■ **Automatic Log In**. Used for Calling Groups that consist of fax machines or data workstations (also called data hunt groups) to specify that the system automatically logs in Calling Group members after a power failure. This setting can also be used for Calling Groups consisting of telephones.

■ **Integrated VMI**. Used when a voice messaging system that requires special signaling for integrated operation (for example, MERLIN Messaging, Intuity AUDIX, or IS III) is connected to one or more extension jacks assigned to a Calling Group. The system automatically logs in the group members after a power failure.

■ **Generic VMI**. Used when a voice messaging system that does not need special signaling is connected to one or more extension jacks assigned to a Calling Group. The system automatically logs in the group members after a power failure.

> **NOTE** Any port programmed as a VMI port is programmed with:
>
> ■ Outward restriction on
>
> ■ A factory set FRL of 0 (the most restrictive)
>
> ■ A factory set Disallowed List (List 7) that includes the numbers frequently associated with fraud

If the System Manager changes a VMI port to non-VMI port, the restrictions are not turned off. To remove restrictions, the System Manager must change them through system programming.

### Summary: Group Type

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 7d, Group Calling |
| **Factory Setting** | Automatic Log Out |
| **Valid Entries** | Automatic login, Automatic logout, Integrated VMI, Generic VMI |
| **Inspect** | No |
| **Copy Option** | No |

| **Console Procedure** | Extensions→▶ or More→Grp Calling→More→ Group Type→Dial Calling Group ext. no.→Enter→Specify login type (Auto login, Auto logout, Integrated VMI, or Generic VMI)→ Enter→ Back→Back→Back |
|---|---|
| **PC Procedure** | F6 →PgUp→ F4 →PgUp→ F1 →Type Calling Group ext. no.→ F10 →Specify login type (Auto login, Auto logout, Integrated VMI, or Generic VMI)→F10 → F5 → F5 → F5 |

## Queue Control

The System Manager can control the maximum number of calls allowed in the primary Calling Group queue for calls that arrive on the following types of facilities:

■  DID (Direct Inward Dialing), DIOD (Direct Inward and Outward Dialing), and dial-in TIE

■  All calls transferred from a VMI (voice messaging interface) port

■  Internal calls to the Calling Group

■  Internal calls to the Calling Group through the QCC Position-Busy backup (PBB)

■  Intrasystem calls to the Calling Group

When the number of the calls in queue reaches the programmed maximum, subsequent callers receive a busy signal.

Remote-access calls to a Calling Group, coverage calls directed to a Calling Group, and all outside/central office calls are not eligible for queue control.

Queue control does not apply to calls received directly on any of the following facilities:

■  Loop-start lines

■  Auto-in tie trunks

■  E1 facilities emulating loop-start lines/trunks

When a call arrives on one of the above facilities, it is added to the Calling Group queue, even if that queue has reached or exceeded the programmed maximum number of calls. For example, if the maximum number of Calling Group calls is set to 40, and 40 calls have come in, subsequent callers on eligible facilities hear the busy tone. Calls that come in on a loop-start line, however, are added to the queue.

### Summary: Queue Control

| **Programmable by** | System Manager |
|---|---|
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 7d, Group Calling |
| **Factory Setting** | 99 calls |

|  |  |
|---|---|
| **Valid Entries** | 0–99 (0 indicates no calls are queued) |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Extensions→▶ or More→Grp Calling→More→Queue Ctrl→Dial Calling Group ext. no.→Enter→ Dial no. of calls allowed in queue (0–99)→Enter→Back→ Back→Back |
| **PC Procedure** | F6 →PgUp → F4 →PgUp → F2 →Type Calling Group ext. no.→ F10 →Type no. of calls allowed in queue (0–99)→ F10 → F5 → F5 → F5 |

# System Features

This section contains programming summaries for the optional system features that affect all or most system users and includes the following:

■   Transfer Return Time

■   One-Touch Transfer/Hold

■   Transfer Audible

■   Type of Transfer

■   Camp-On Return Time

■   Call Park Return Time

■   Delay Ring Interval

■   Automatic Callback Interval

■   Extension Status

■   SMDR Language

■   SMDR Call Report Format

■   SMDR Call Length

■   SMDR Calls Recorded on Call Report

■   SMDR Account Code Format

■   SMDR Talk Time

■   SMDR UDP Calls Recorded on Call Report

■   Inside Dial Tone

■   Reminder Service Cancel

■   Redirect Outside Calls to Unassigned Extension Numbers

■   Host System Dial Codes for Behind Switch Mode

■   Recall Timer

■   Interdigit Timers

■   Allowed Lists

■   Assign Allowed Lists to Extensions

■   Disallowed Lists

■   Assign Disallowed Lists to Extensions

## Transfer Return Time

Use this procedure to specify the number of times the telephone rings before a call transferred to another inside telephone is returned to the originator. A setting of 0 means that transferred calls are never returned to the originator.

**NOTE** The transfer return time should not be set to 0 in a system with single-line telephones.

### Summary: Transfer Return Time

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 8a, System Features |
| **Factory Setting** | 4 rings |
| **Valid Entries** | 0 to 9 rings |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Options→Transfer→Return Time→Drop→ Dial no. of rings (0–9)→Enter→Back→Back |
| **PC Procedure** | F7 → F1 → F1 → Alt + P →Type no. of rings (0–9)→ F10 → F5 → F5 |

## One-Touch Transfer/One-Touch Hold

Use this procedure to assign either the One-Touch Transfer or One-Touch Hold feature.

One-Touch Transfer allows users to initiate transfers to another extension by pressing an Auto Dial or DSS button for that extension. If the One-Touch Transfer feature is assigned, you must also specify whether the transfer completion is manual (the user has to press another button to complete the transfer) or automatic (the transfer is completed automatically).

**NOTE** The One-Touch Transfer feature is not available on single-line telephones.

One-Touch Hold applies to incoming central office calls only. When the user presses an Auto Dial or DSS button to initiate a transfer, the outside caller is put on hold. The system automatically selects an intercom facility and dials the transfer destination. There is no transfer return function with this method. Consequently, if the transfer destination does not answer or is busy, the user who initiates the transfer must notify the outside caller, or the outside caller will remain on hold.

## Summary: One-Touch Transfer/Hold

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 8a, System Features |
| **Factory Setting** | One-Touch Transfer, automatic completion |
| **Valid Entries** | Transfer, Hold |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | To program One-Touch Transfer: Options→Transfer→One Touch→Transfer→ Enter→Select Manual or Automatic→Enter→ Back→Back |
| | To program One-Touch Hold: Options→Transfer→One Touch→Hold→Enter→Back→ Back |
| **PC Procedure** | To program One-Touch Transfer: F7 → F1 → F2 → F1 →F10→Select Manual or Automatic→ F10 → F5 → F5 |
| | To program One-Touch Hold: F7 → F1 → F2 → F2 → F10 → F5 → F5 |

## Transfer Audible

Use this procedure to specify whether an outside caller hears ringing (also called ringback) or Music-On-Hold while being transferred. Inside callers always hear ringback during a transfer.

**NOTES** ▶ ■ If you use equipment that rebroadcasts music or other copyrighted materials, you may be required to obtain a copyright license from and pay license fees to a third party (such as the American Society of Composers, Artists, and Producers or Broadcast Music Incorporated). Magic On Hold requires no such license and can be purchased from Lucent Technologies.

■ When extensions are programmed to use the Centrex Transfer via Remote Call Forwarding feature, do not program Music-On-Hold as the transfer audible. If Music-On-Hold is programmed in this case, a caller being transferred hears a click, three seconds of Music-On-Hold, a second click, silence for about 10 seconds, then ringback or a busy tone from the central office. This can confuse callers, who may then hang up.

### Summary: Transfer Audible

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 8a, System Features |
| **Factory Setting** | Music-On-Hold |
| **Valid Entries** | Music-On-Hold, Ringback |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Options→Transfer→Audible→Select Music-On-Hold or Ringback→Enter→Back→Back |
| **PC Procedure** | F7 → F1 → F3 →Select Music-On-Hold or Ringback→ F10 → F5 → F5 |

## Type of Transfer

Use this procedure to specify whether the system automatically selects an Intercom or System Access Ring or Voice button when the Transfer button or an Auto Dial or DSS button (for One-Touch Transfer) is pressed.

## Summary: Type of Transfer

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 8a, System Features |
| **Factory Setting** | Ring button (Intercom or System Access) is automatically selected |
| **Valid Entries** | Voice Announce, Ring |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Options→Transfer→Type→Select Voice Announce or Ring→Enter→Back→Back |
| **PC Procedure** | F7 → F1 → F4 →Select Voice Announce or Ring→ F10 → F5 → F5 |

## Camp-On Return Time

Use this procedure to specify the number of seconds before a camped-on call (a call transferred to a busy telephone with the Camp-On feature) is returned to the originator.

## Summary Camp-On Return Time:

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 6f, System Features |
| **Factory Setting** | 90 seconds |
| **Valid Entries** | 30 to 300 seconds, in 10-second increments |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Options→CampOn→Drop→Dial no. of seconds (30–300)→ Enter→Back |
| **PC Procedure** | F7 → F2 → Alt + P →Type no. of seconds (30–300)→ F10 → F5 |

## Call Park Return Time

Use this procedure to specify the number of seconds before a call put on hold with the Park feature is returned to the originator.

### Summary: Call Park Return Time

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 8a, System Features |
| **Factory Setting** | 180 seconds |
| **Valid Entries** | 30 to 300 seconds, in 10-second increments |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Options→CallParkRtn→Drop→Dial no. of seconds (30–300)→ Enter→Back |
| **PC Procedure** | [F7]→[F3]→[Alt]+[P]→Type no. of seconds (30–300)→[F5]→[F5] |

## Automatic Callback Interval

Use this procedure to specify the number of times the telephone rings at the originator's telephone before the system cancels a Callback request.

### Summary: Automatic Callback Interval

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 8a, System Features |
| **Factory Setting** | 3 rings |
| **Valid Entries** | 1 to 6 rings |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Options→Callback→Drop→Dial no. of rings (1–6)→Enter→Back |
| **PC Procedure** | [F7]→[F6]→[Alt]+[P]→Type no. of rings (1–6)→[F10]→[F5] |

## Extension Status

Use this procedure to specify whether the Extension Status (ES) feature is used in Hotel mode or Group Calling Supervisor mode.

The calling mode affects the meaning of the LEDs and the use of Auto Dial or DSS buttons when the DLC operator position is in Extension Status mode.

In Hotel mode, telephones are restricted from making calls in Extension Status states 1 and 2 (ES1 and ES2). In Group Calling Supervisor mode, ES states reflect member or agent status without restricting the telephones. In the Group Calling Supervisor mode, the Extension Status feature is used by the agents to log in and out, and by the supervisor to see agent status.

### Summary: Extension Status

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 8a, System Features |
| **Factory Setting** | Group Calling Supervisor |
| **Valid Entries** | Group Calling Supervisor, Hotel mode |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Options→Ext Status→Select Hotel or GrpCallSupv→Enter→Back |
| **PC Procedure** | F7 → F7 →Select Hotel or GrpCallSupv→F10 → F5 |

## SMDR Language

Use this procedure to change the language of the SMDR reports. The report language is initially set to the same as that set for the system language. See "System Language" on page 3-4.

### Summary: SMDR Language

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 1, System Planning |
| **Factory Setting** | U.S. English (matches System Language setting) |

| | |
|---|---|
| **Valid Entries** | U.S. English, Canadian French, Latin American Spanish, Brazilian Portuguese |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | More→Language→SMDR→Select language (U.S. English, Canadian French, Latin American Spanish, Brazilian Portuguese)→Enter→Back |
| **PC Procedure** | PgUp→F6→F3→Select language (U.S. English, Canadian French, Latin American Spanish, Brazilian Portuguese)→F10→F5 |

## SMDR Call Report Format

Use this procedure to specify whether the SMDR call reports are printed in Basic format or ISDN format. In ISDN format, Automatic Number Identification appears in the Calling Number field in place of IN (which appears in the Basic report format). The call recording type for these calls is I in ISDN format and C in Basic format.

ISDN format should be used only in conjunction with ANI or Caller ID service subscription.

### Summary: SMDR Call Report Format

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 8a, System Features |
| **Factory Setting** | Basic format |
| **Valid Entries** | Basic, ISDN |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Options→SMDR→Format→Select Basic SMDR or ISDN SMDR→Enter→Back→Back |
| **PC Procedure** | F7→F8→F1→Select Basic SMDR or ISDN SMDR→F10→F5→F5 |

## SMDR Call Length

Use this procedure to set the minimum time length of a call before it is recorded on SMDR call reports.

**NOTES▶** ■ The outbound call of a Centrex Transfer via Remote Call Forwarding call will not be recorded unless the minimum time length is set to zero (0). The inbound Centrex call to the Principle User who has Centrex Transfer via Remote Call Forwarding will also not be recorded unless the minimum time length is 0.

### Summary: SMDR Call Length

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 8a, System Features |
| **Factory Setting** | 40 seconds |
| **Valid Entries** | 0 to 255 seconds |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Options→SMDR→Call Length→Drop→Dial no. of seconds (0–255)→Enter→Back→Back |
| **PC Procedure** | F7 → F8 → F2 → Alt + P →Type no. of seconds (0–255)→ F10 → F5 → F5 |

### SMDR Calls Recorded on Call Report

Use this procedure to specify whether SMDR information should be recorded for both incoming and outgoing calls or for outgoing calls only.

### Summary: SMDR Calls Recorded on Call Report

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 8a, System Features |
| **Factory Setting** | Incoming and outgoing |
| **Valid Entries** | In/Out, Out Only |

| | |
|---|---|
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Options→SMDR→Call Report→Select In/Out or Out Only→ Enter→Back→Back |
| **PC Procedure** | [F7]→[F8]→[F3]→Select In/Out or Out Only→[F10]→[F5]→[F5] |

## SMDR Account Code Format

For calls made using an authorization code, SMDR can be programmed to have either the "home extension" or the actual authorization codes recorded in the Account Code field if no Account Code is entered. Account Code overrides the Authorization Code entry in the SMDR record when both features are used.

### Summary: SMDR Account Code Format

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 6h, Authorization Codes |
| **Factory Setting** | Home Extension Number |
| **Valid Entries** | Home Extension Number, Authorization Code |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Options→SMDR→Auth Code→Select Home Extension Number or Authorization Code→Enter→Back→Back |
| **PC Procedure** | [F7]→[F8]→[F6]→Select Home Extension Number or Authorization Code→[F10]→[F5]→[F5] |

## SMDR Talk Time

The Talk field was added to the SMDR call record. The Talk field is designed for the MERLIN MAGIX Reporter application that is used to capture detailed information on incoming and outgoing voice and data calls with a special emphasis on Calling Groups. The Talk field contains the talk-time duration—the amount of time (59:59 maximum) that a Calling Group agent spends on an incoming call, including any actions that the agent takes while handling the call.

If your system includes an MERLIN MAGIX Reporter, the Talk Time option must be enabled. All other configurations must have the Talk Time option disabled.

## Summary: SMDR Talk Time

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 8a, System Features |
| **Factory Setting** | Disabled |
| **Valid Entries** | Enable, Disable |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Options→SMDR→Talk Time→Select Enable or Disable→Enter→Back→Back |
| **PC Procedure** | F7 → F8 → F7 →Select Enable or Disable→F10 → F5 → F5 |

## Inside Dial Tone

Use this procedure to set the inside (system) dial tone to be either different from, or the same as the outside line/trunk dial tone.

NOTE ▶ The inside dial tone must be the same as the outside dial tone when the internal dial tone is not recognized by software applications or modems.

## Summary: Inside Dial Tone

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 8a, System Features |
| **Factory Setting** | Inside dial tone is different from outside dial tone |
| **Valid Entries** | Inside, Outside |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Options→InsideDial→Select Inside or Outside→Enter→Back |
| **PC Procedure** | F7 → F9 →Select Inside or Outside→F10 → F5 |

## Reminder Service Cancel

Use this procedure to set the time of day when all programmed Reminder Service calls are automatically cancelled.

To deactivate Reminder Service Cancel, erase the currently programmed time and do not enter a new time.

### Summary: Reminder Service Cancel

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 8a, System Features |
| **Factory Setting** | Not applicable |
| **Valid Entries** | 0000 to 2359 |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | To deactivate Reminder Service Cancel:<br>Options→Reminder Srv→Drop→Enter→Back |
| | To set Reminder Service Cancel time:<br>Options→Reminder Srv→Drop→Dial time (0000–2359)→<br>Enter→Back |
| **PC Procedure** | To deactivate Reminder Service Cancel:<br>[F7]→[F10]→[Alt]+[P]→[F10]→[F5] |
| | To set Reminder Service Cancel time:<br>[F7]→[F10]→[Alt]+[P]→Type time (0000–2359)→[F10]→[F5] |

## Redirect Outside Calls to Unassigned Extension Numbers

Use this procedure to specify the extension number to receive redirected calls. Redirected calls include calls made to unassigned numbers by Remote Access users, by users on DID trunks (Hybrid/PBX only), or by users on dial-in tie trunks. Calls can be redirected to the following locations:

■ QCC queue (Hybrid/PBX only)

■ Another extension number

■ A Calling Group

This setting does not affect calls received on DID trunks if you have specified that calls to unassigned DID extensions are to receive a fast busy signal. See "Invalid Destination'' on page 3-61

### Summary: Redirect Outside Calls to Unassigned Extension Numbers

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 8a, System Features |
| **Factory Setting** | Extension number of primary operator |
| **Valid Entries** | QCC queue extension number, other extension number |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | To select QCC queue:<br>Options→More→Unassigned→QCC Queue→Enter→Back<br><br>To select extension or Calling Group:<br>Options→More→Unassigned→Select Extension or<br>Grp Calling→Enter→Dial ext. no. or group no.→Enter→Back |
| **PC Procedure** | To select QCC queue:<br>F7 →PgUp→ F1 → F1 →F10→ F5<br><br>To select extension or Calling Group:<br>F7 →PgUp→ F1 →Select Extension or Grp Calling→Type ext. no. or group no.→F10→ F5 |

## Recall Timer

Use this procedure to designate the length of the timed flash that is sent when Recall is used to disconnect a call and get a new dial tone without hanging up. Both the interval of the timed flash and the way Recall works depend on the type of telephone and system operating mode.

The recall timer should be reset if multiline telephone users experience either of the following problems:

■ Nothing happens when the user presses the Recall button on an outside call. This indicates that the interval is too short and should be increased to 650 milliseconds or one second.

■ In a system operating in Behind Switch mode, the call is disconnected when the user presses the Recall button on an outside call. This indicates that the interval is too long and should be decreased to 350 milliseconds.

### Summary: Recall Timer

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 8a, System Features |
| **Factory Setting** | 450 ms |
| **Valid Entries** | 350 ms, 450 ms, 650 ms, 1 second |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Options→More→RecallTimer→Select time (350 ms, 450 ms, 650 ms, or 1 second)→Enter→Back |
| **PC Procedure** | F7→PgUp→F3→Select time (350 ms, 450 ms, 650 ms, or 1 second)→F10→F5 |

## Interdigit Timers

Programming for interdigit timers is reserved for Lucent Technologies technical support personnel or authorized dealers.

Interdigit timers are used by the MERLIN MAGIX Integrated System to determine when a user originating an outside call has completed dialing the digits. The information is necessary to allow the system to perform subsequent operations. You should not change the factory settings for interdigit timers unless instructed to do so by Lucent Technologies technical support or by an authorized dealer.

## Allowed Lists

Use this procedure to establish Allowed Lists. These lists are telephone numbers that can be dialed from specified telephones, regardless of any calling restrictions assigned to the telephones.

A maximum of eight lists (numbered 0 through 7) with a maximum of 10 numbers each (numbered 0 through 9) are allowed. Each allowed number can be no more than six digits (an area code plus an exchange) or six digits with a leading 1, where required.

If you program 0 as the first digit of a list entry, any Toll Restriction assigned to the extension is removed for calls that can be placed by a toll operator.

Special characters (such as Pause) are not permitted in Allowed List entries.

### Summary: Allowed Lists

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 6g, Call Restriction Assignments and Lists |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Area code/exchange (1- to 6-digits with leading 1, if necessary) |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Tables→AllowList→Dial list no. (0–7) and entry no. (0–9)→ Enter→Drop→Dial no.→Enter→Back |
| **PC Procedure** | F8 →F1 →Type list no. (0–7) and entry no. (0–9)→F10 → Alt +P →Type no.→F10 → F5 |

### Assign Allowed Lists to Extensions

Use this procedure to assign individual extensions access to established Allowed Lists. More than one Allowed List can be assigned to an extension.

### Summary: Assign Allowed Lists to Extensions

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 6g, Call Restriction Assignments and Lists |

| | |
|---|---|
| **Factory Setting** | Not applicable |
| **Valid Entries** | 0 to 7 |
| **Inspect** | Yes |
| **Copy Option** | Yes |
| **Console Procedure** | `Tables`→`AllowTo`→Dial list no. (0–7)→`Enter`→Dial ext. no.→ `Enter`→`Back`→`Back` |
| **PC Procedure** | `F8`→`F2`→Type list no. (0–7)→`F10`→Type ext. no.→`F10`→`F5`→ `F5` |

## Disallowed Lists

Use this procedure to establish Disallowed Lists. These lists are telephone numbers that cannot be dialed from specified extensions (including unrestricted extensions).

A maximum of eight lists (numbered 0 through 7) with 10 entries each (numbered 0 through 9) is allowed. Each number can have a maximum of 11 digits, including wildcards. The Pause character (entered by pressing the Hold button) is used to designate a wildcard character—for example, to indicate that calls to a given exchange are restricted in every area code.

⚠️ **SECURITY ALERT:**

*Create a Disallowed List or use the pre-prepared Disallowed List number 7 to disallow dialing* `0, 11, 10, 1700, 1809, 1900,` *and* `976` *or* `1(wildcard)976`*. Lucent Technologies recommends that you add any other numbers in your country that should be restricted. Assign all voice mail port extensions to this Disallowed List. Lucent Technologies recommends assigning Disallowed List number 7. This is an added layer of security in case outward restriction is inadvertently removed. (Voice messaging ports are assigned, 3 by default, to Disallowed List number 7.)*

### Summary: Disallowed Lists

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 6g, Call Restriction Assignments and Lists |
| **Factory Setting** | List #7, containing the following: 0, 10, 11, 1809, 1700, 1900, 976, 1ppp976 (p = wildcard), * |
| **Valid Entries** | 1- to 11-digits (including wildcards) |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | `Tables`→`Disallow`→Dial list no.(0–7) and entry no. (0–9)→ `Enter`→`Drop`→Dial no.→`Enter`→`Back` |

| | |
|---|---|
| **PC Procedure** | F8 → F3 →Type list no.(0–7) and entry no. (0–9)→F10 → Alt + P → Type no.→F10 → F5 |

## Assign Disallowed Lists to Extensions

Use this procedure to assign established Disallowed Lists to individual extensions. Each restricted extension can be assigned to more than one list.

### Summary: Assign Disallowed Lists to Extensions

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 6g, Call Restriction Assignments and Lists |
| **Factory Setting** | Not applicable |
| **Valid Entries** | 0 to 7 |
| **Inspect** | Yes |
| **Copy Option** | Yes |
| **Console Procedure** | Tables→DisallowTo→Dial list no. (0–7)→Enter→ Dial ext. no.→Enter→Back→Back |
| **PC Procedure** | F8 → F4 →Type list no. (0–7)→F10 →Type ext. no.→F10 → F5 → F5 |

## Remote Access Features

This section covers the following Remote Access features:

■ Remote Access Trunk Assignment

■ Remote Access Automatic Callback

■ Remote Access without Barrier Codes

■ Remote Access Barrier Codes

■ Remote Access with Barrier Codes

## ⚠ SECURITY ALERT:

*As a customer of a new system, you should be aware that telephone fraud has become an increasingly prevalent problem. It 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, or breaking into someone else's telephone equipment*

*physically or electronically. In certain instances, unauthorized individuals make connections to the public switched 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 acknowledgment signaling the user to key in his or her barrier code, which is selected and programmed by the System Manager. After the barrier code is accepted, the system returns dial tone to the user. If you do not program specific 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 helps the customer, through proper administration, to minimize the ability of unauthorized persons to gain access to the network. Most commonly, telephone 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 program the various restriction levels, and protect 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 when 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. Lucent Technologies 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 system, follow these basic rules:*

- *Use a nonpublished Remote Access number.*

- *Assign barrier 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 barrier codes, which are less likely to be broken.*

- *Deactivate all unassigned codes promptly.*

- *Ensure that Remote Access users are aware of their responsibility to keep the telephone number and any barrier codes secure.*

- *When possible, restrict the off-network capability of off-premises callers using the Calling 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.*

- *Always use the longest length password allowed on the system.*

- *Passwords should consist of a random, non-repetitive, hard-to-guess sequence of digits.*

Remote Access Features

## Remote Access Trunk Assignment

Use this procedure to assign or remove the trunks used for Remote Access. You can also use this procedure to specify whether the Remote Access feature is dedicated (always used for Remote Access) or shared (used for Remote Access only when Night Service is activated).

Trunks used for dedicated Remote Access must not be assigned to ring into a Calling Group or the QCC queue (Hybrid/PBX mode only).

In Hybrid/PBX mode, if a trunk assigned to ring into the QCC queue is also used for shared Remote Access, perform the procedure below before you attempt the procedure "QCC Operator to Receive Calls" on page 3-36.

**NOTE** A loop-start line must be programmed for Reliable Disconnect if it is to be used for Remote Access (See "Disconnect Signaling Reliability" on page 3-24).

### Summary: Remote Access Trunk Assignment

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 3a, Incoming Trunks: Remote Access |
| **Factory Setting** | Remote Access is not assigned |
| **Valid Entries** | Dedicated, Shared, No Remote |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | LinesTrunks→RemoteAccss→LinesTrunks→<br>Dial line/trunk no.→Enter→specify how trunk is used (Dedicated, Shared, No Remote)→Enter→Back→Back |
| **PC Procedure** | F4→F8→F1→Type line/trunk no.→F10→<br>specify how trunk is used (Dedicated, Shared, No Remote)→F10→<br>F5→F5 |

## Remote Access Automatic Callback

Use this procedure either to allow Remote Access users to use the Automatic Callback feature to request busy lines/trunks or pools or to prevent use of the Automatic Callback feature.

**NOTE** This feature applies to Hybrid/PBX mode only.

**Summary: Remote Access Automatic Callback**

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 3a, Incoming Trunks: Remote Access |
| **Factory Setting** | Disable |
| **Valid Entries** | Disable, Enable |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | LinesTrunks→RemoteAccss→AutoQueuing→Select Enable or Disable→Enter→Back→Back |
| **PC Procedure** | F4 → F8 → F6 →Select Enable or Disable→F10 → F5 → F5 |

## Remote Access without Barrier Codes

Use this procedure to change the class of restriction for one of the following:

■ All non-tie lines/trunks

■ All tie trunks and DID/DIOD trunks with Remote Access

■ DID/DIOD Remote Access code

## ⚠ SECURITY ALERT:

*Your system will be highly susceptible to toll fraud if you activate the Remote Access feature without barrier codes.*

NOTE▶ If barrier code requirements have been established for Remote Access users, use ''Remote Access with Barrier Codes'' on page 3-140; do *not* use this procedure.

The class of restriction assigned may be one of the following:

■ **Restriction**. Determines whether Remote Access users can make local and/or toll calls and includes the following settings:

— Unrestricted

— Toll Restricted

— Outward Restricted

■ **ARS Facility Restriction Level** (Hybrid/PBX only). Allows or disallows use of outgoing trunks by assigning a facility restriction level from 0 through 6. The FRL ranges from 0 (most restrictive) to 6 (least restrictive). The FRL value assigned here is the opposite of the FRL value assigned to the ARS route, where a value of 0 is the least restrictive and a value of 6 is the most restrictive.

■ **Allowed Lists Assignment**. Assigns Allowed Lists and is used when Remote Access users are restricted from making local or toll calls.

■ **Disallowed Lists Assignment**. Assigns Disallowed Lists and is used when Remote Access users are not restricted from making local or toll calls.

A maximum of eight Allowed or Disallowed Lists can be assigned to lines/trunks.

Class of restriction settings are assigned either to all non-tie trunks or to all tie trunks and DID/DIOD trunks. They cannot be assigned to each trunk on an individual basis.

## Summary: Remote Access without Barrier Codes

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 3a, Incoming Trunks: Remote Access |
| **Factory Setting** | Call restriction: Outward restricted<br>ARS restriction level: 3 |
| **Valid Entries** | Unrestricted, Toll Restricted, Outward Restricted; 0 to 6 |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | To change calling restrictions:<br>LinesTrunks→RemoteAccss→Select Non-TIE or TIE Lines→ Restriction→Select restriction→Enter→Back→Back→ Back→Back<br><br>To change ARS Facility Restriction Level:<br>LinesTrunks→RemoteAccss→Select Non-TIE or TIE Lines→ ARS Restrict→Drop→Dial FRL value→Enter→Back→Back→ Back→Back<br><br>To assign/remove Allowed Lists:<br>LinesTrunks→RemoteAccss→Select Non-TIE or TIE Lines→ Allow List→Dial list no.→Enter→Back→Back→Back→Back<br><br>To assign/remove Disallowed Lists:<br>LinesTrunks→RemoteAccss→Select Non-TIE or TIE Lines→ DisallowLst→Dial list no.→ Enter→Back→Back→Back→ Back |
| **PC Procedure** | To change calling restrictions:<br>F4 →F8 →Select Non-TIE or TIE Lines→F2 →Select restriction→F10 →F5 →F5 →F5 →F5<br><br>To change ARS Facility Restriction Level:<br>F4 →F8 →Select Non-TIE or TIE Lines→F3 →Alt +P → Type FRL value→F10 →F5 →F5 →F5 →F5 |

To assign/remove Allowed Lists:
`F4`→`F8`→Select `Non-TIE` or `TIE Lines`→`F4`→Type list no.→
`F5`→`F5`→`F5`→`F5`

To assign/remove Disallowed Lists:
`F4`→`F8`→Select `Non-TIE` or `TIE Lines`→`F6`→Type list no.→
`F10`→`F5`→`F5`→`F5`→`F5`

## Remote Access Barrier Codes

Use this procedure to establish or remove barrier code requirements, as well as to establish or remove the barrier codes themselves.

Barrier codes are security passwords that restrict users from making unauthorized Remote Access calls on tie and non-tie lines and trunks. Callers are allowed three attempts per call to enter the correct Remote Access barrier code. If the caller enters an incorrect barrier code or times out during code entry, the caller hears the retry tone. The caller can erase an entered code by dialing ** (two asterisks). Code erasure is counted as one of the three permitted attempts. After three unsuccessful attempts, the caller hears a reorder tone and the call is disconnected. If this happens, the SMDR contains sixteen 0s in the Account Code field to flag the three failed attempts.

A maximum of 16 barrier codes are allowed for all lines/trunks. Each of the 16 barrier codes may be programmed with its own class of restriction (COR).

The system-wide barrier code length can range from a minimum of 4 characters to a maximum of 11 characters. The factory setting length is 7. If you enter a length that is less than 4 or greater than 11, the entry is erased and the previous entry displays on the screen. When the barrier code length is changed, all barrier codes are erased and must be reassigned. If the barrier code length is changed and barrier codes are not reassigned, users can dial into Remote Access trunks and enter a barrier code, but are denied access into the Remote Access trunks no matter what code is entered.

## ⚠ SECURITY ALERT:

*Always use the longest length barrier code allowed on the system. The code should consist of a random, non-repetitive, hard-to-guess sequence of digits.*

The time and date of the most recent change made to the system-wide barrier code length is shown during the system programming procedure, as well as on the Remote Access DISA Information report. The SMDR record for incoming Remote Access trunks includes the barrier code IDs established in this procedure.

Use numbers 0 through 9 and the asterisk (*) to enter the barrier codes. The codes cannot start with an asterisk and cannot contain two consecutive asterisks. (The use of two consecutive asterisks is reserved for users to erase an incorrect barrier code entry.)

See "Remote Access without Barrier Codes" on page 3-136 to allow or deny use of system features for each barrier code assigned.

**Summary: Remote Access Barrier Codes**

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 3a, Incoming Trunks: Remote Access |
| **Factory Setting** | No barrier codes are established |
| **Valid Entries** | Not applicable |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | To establish or remove code requirements:<br>LinesTrunks→RemoteAccss→Select Non-TIE or TIE Lines→<br>BarrierCode→Specify whether barrier codes are required→<br>Enter→Back→Back→Back |
| | To change barrier code length:<br>LinesTrunks→RemoteAccss→BarrierCode→Code Info→<br>Code Length→Drop→Dial code length→Enter→Yes→Back→<br>Back→Back |
| | To change barrier code:<br>LinesTrunks→RemoteAccss→BarrierCode→Code Info→<br>Code Entry→Dial code ID→Enter→Drop→Dial code→Enter→<br>Back→Back→Back |
| **PC Procedure** | To establish or remove code requirements:<br>[F4]→[F8]→Select Non-TIE or TIE Lines→[F1]→<br>Specify whether barrier codes are required→[F10]→[F5]→[F5]→[F5] |
| | To change barrier code length:<br>[F4]→[F8]→[F4]→[F2]→[F1]→[Alt]+[P]→Type code length→[F10]→<br>[F2]→[F5]→[F5]→[F5] |
| | To change barrier code:<br>[F4]→[F8]→[F4]→[F2]→[F2]→Type Code ID→[F10]→[Alt]+[P]→<br>Dial code length→[F10]→[F5]→[F5]→[F5] |

## Remote Access with Barrier Codes

Use this procedure to change the class of restriction for individual Remote Access barrier codes. The class of restriction assigned to each barrier code allows or denies the use of the following system features:

■ **Restriction**. Determines whether Remote Access users can make local and/or toll calls, and includes the following settings:

— Unrestricted

— Toll Restricted

— Outward Restricted

■ **ARS Facility Restriction Level** (Hybrid/PBX only). Allows or restricts use of outgoing trunks by assigning a facility restriction level (FRL) from 0 through 6. The FRL ranges from 0 (most restrictive) to 6 (least restrictive). The FRL value assigned here is the opposite of the FRL value assigned to the ARS route, where a value of 0 is the least restrictive and a value of 6 is the most restrictive.

■ **Allowed Lists Assignment**. Assigns Allowed Lists and is used when Remote Access users are restricted from making local or toll calls.

■ **Disallowed Lists Assignment**. Assigns Disallowed Lists and is used when Remote Access users are not restricted from making local or toll calls.

A maximum of eight Allowed or Disallowed Lists can be assigned to each barrier code. Class of restriction settings apply to individual barrier codes.

**NOTE** If barrier code requirements have not been established or have been removed for Remote Access users, do not use this procedure. See ''Remote Access without Barrier Codes'' on page 3-136.

### Summary: Remote Access with Barrier Codes

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 3a, Incoming Trunks: Remote Access |
| **Factory Setting** | Calling restrictions:<br>Barrier Code: outward restricted<br>All other barrier codes: unrestricted<br>ARS restriction level: 3 |
| **Valid Entries** | Unrestricted, Toll Restricted, Outward Restricted;<br>0 to 6 |
| **Inspect** | No |
| **Copy Option** | No |

| | |
|---|---|
| **Console Procedure** | LinesTrunks→RemoteAccss→BarrierCode→<br>Restriction→Dial barrier code no.→Enter→Select restriction→<br>Enter→ARS Restrict→Dial barrier code no.→Enter→Drop→<br>Dial FRL value→Enter→Select Allow List or Disallow List→<br>Dial barrier code no. (1–16)→Enter→Dial list no.→Enter→<br>Back→Back→Back→Back |
| **PC Procedure** | F4 → F8 → F4 → F3 →Type barrier code no.→F10 →<br>Select restriction→F10 → F4 →Type barrier code no. (1–16)→<br>F10 → Alt + P →Type FRL value→F10 →Select Allow List or<br>Disallow List→Dial barrier code no.→ F10 → F5 → F5 → F5 →<br>F5 |

# Call Progress Tones

Call Progress Tones are those specific tones (at a particular frequency and cadence) that are sent to the public network central office and/or to the outside party or MERLIN MAGIX user (depending upon who initiates the call) by the MERLIN MAGIX system.

The following call progress tones can be programmed:

- **Outside Dialtone**—what the user expects to hear when originating an outside call through the public network central office.

- **Inside Dialtone**—what the MERLIN MAGIX user expects to hear when originating an inside call to a MERLIN MAGIX extension.

- **Ringback**—what the user expects to hear if a call is routed successfully to an endpoint (such as a telephone extension or QCC queue).

- **DID/TIE Ringback**—what the user expects to hear if a call is routed successfully to an endpoint using DID/TIE facilities.

- **Reorder**—(also known as fast-busy or congestion tone) what the user expects to hear when dialing is correct but resources may not be available (for example, facilities in a pool).

- **Number Unobtainable**—what the user expects to hear when using DID or TIE lines and dialing an invalid destination.

- **Busy**—what the user expects to hear when dialing is correct but the destination has no resources (such as System Access buttons) to answer the call.

- **Intercept**—what the MERLIN MAGIX user expects to hear when dialing an invalid endpoint.

Each of the above programmable call progress tones can consist of up to five individual steps, with each step consisting of up to three elements.

## Summary: Call Progress Tones

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Factory Setting** | *Outside Dial Tone:* |

    1. Continuous, 350/440 Hz

*Inside Dial Tone:*

    1. Continuous, 350/1050/1750 Hz

*Ringback:*

    1. On, 440/480 Hz, 1000 ms

    2. Off, No Tone, 3000 ms

    3. Go back 2

*DID/TIE Ringback:*

    1. On, 440/480 Hz, 1000 ms

    2. Off, No Tone, 3000 ms

    3. Go back 2

*Reorder:*

    1. On, 480/620 Hz, 250 ms

    2. Off, No Tone, 250 ms

    3. Go back 2

*Number Unobtainable:*

    1. On, 480/620 Hz, 250 ms

    2. Off, No Tone, 250 ms

    3. Go back 2

*Busy:*

    1. On, 480/620 Hz, 500 ms

    2. Off, No Tone, 500 ms

    3. Go back 2

*Intercept:*

    1. On, 440 Hz, 250 ms

    2. On, 620 Hz, 250 ms

    3. Go back 2

| | |
|---|---|
| **Valid Entries** | Action: On, Off, Continuous, No action, Go back 2, Go back 3, Go back 4 |
| | Frequency: 440 Hz, 620 Hz, 350/440 Hz, 440/480 Hz, 480/620 Hz, 350/1050/1750 Hz, No Tone |
| | Duration: 25 to 6375 ms in 25-ms increments |
| **Inspect** | Yes |
| **Copy Option** | No |

Tables and 3-4 and 3-5 provide information on valid options for current action settings and valid next actions that are used in the following procedures.

**Table 3-4.  Valid Selections for Further Programming**

| Current Action | Action | Frequency | Duration |
|---|---|---|---|
| Continuous | X | X | |
| On | X | X | X |
| Off | X | | X |
| Go Back 2 | X | | |
| Go Back 3 | X | | |
| Go Back 4 | X | | |
| No Action | X | | |

**Table 3-5.  Valid Next Actions**

| Action | Continuous | On | Off | Go Back 2 | Go Back 3 | Go Back 4 | No Action |
|---|---|---|---|---|---|---|---|
| Continuous | | | | | | | X |
| On | X | X | X | X | X | X | |
| Off | X | X | | X | X | X | |
| Go Back 2 | | | | | | | X |
| Go Back 3 | | | | | | | X |
| Go Back 4 | | | | | | | X |
| No Action | | | | | | | X |

| | |
|---|---|
| **Console Procedure** | Options→More→More→Call Tones→Select the tone you want to program (the tone you selected appears at the top of each screen in the procedure)→Dial step no. (1-5)→Enter→Action→Select action (refer to Table 3-4 and Table 3-5 for valid entries)→ Frequency→Select frequency value (refer to Table 3-4 and Table 3-5 for valid entries)→Enter→Duration→Select duration (refer to Table 3-4 and Table 3-5 for valid entries)→Enter→Back→ Back→Back→Back |
| **PC Procedure** | [F7]→[PgUp]→[PgUp]→[F9]→Select the tone you want to program (the tone you selected appears at the top of each screen in the procedure)→Type step no. (1-5)→[F10]→[F1]→Select action (refer to Table 3-4 and Table 3-5 for valid entries)→[F10]→Select frequency value (refer to Table 3-4 and Table 3-5 for valid entries)→[F10]→[F3]→Select duration (refer to Table 3-4 and Table 3-5 for valid entries)→[F10]→[F5]→[F5]→[F5]→[F5] |

# Automatic Route Selection

This section contains programming procedures for the following Automatic Route Selection (ARS) features:

- 1 + 7-Digit Dialing Requirements

- ARS Tables

- Start and Stop Times for Subpatterns

- Pool Routing

- Facility Restriction Level (FRL)

- Digit Absorption

- Other Digits

- Dial 0 Table

- Voice and/or Data Routing

**NOTE** ARS applies to Hybrid/PBX mode only.

## 1 + 7-Digit Dialing Requirements

Use this procedure for calls placed within the same (home) area code as the system. The procedure allows you to specify whether or not the local telephone company requires a 1 to precede the 7-digit number. The two available settings are:

■ **Within Area Code**. Requires that a 1 plus a 7-digit number must be dialed; the system checks the 1 plus 7-digit tables for routing.

■ **Not within Area Code**. Does not require that a 1 precede the 7-digit number (the system does this automatically).

### Summary: 1 + 7-Digit Dialing Requirements

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 3f, Automatic Route Selection Tables |
| **Factory Setting** | Not within area code |
| **Valid Entries** | Not within area code, Within area code |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Tables→ARS→ARS 1+7Dial→Select Within Area Code or Not within Area Code→Enter→Back→Back |
| **PC Procedure** | F8 → F6 → F1 →Select Within Area Code or Not within Area Code→F10 → F5 → F5 |

## ARS Tables

Use this procedure for the following tasks:

■ To specify type of table (6-digit, area code, exchange, or 1 plus 7-digit number)

■ To add or change area codes to be included in each table

■ To add or change exchanges to be included in each table

A maximum of 16 tables can be established, numbered 1 through 16. Each table can have a maximum of 100 entries, numbered 1 through 100. Tables 17 and 18, the Default Toll and Default Local tables respectively, cannot be changed.

The first entry in a 6-digit table must be the area code. Subsequent entries consist of exchanges within that area code.

Area code tables can contain only area codes.

Exchange and 1 plus 7-digit tables can contain only exchanges.

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

## Summary: ARS Tables

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 3f, Automatic Route Selection Tables |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Not applicable |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | Tables→ARS→ARS Input→Dial table no.→Enter→ Specify table type→Enter→Dial entry no.→Enter→Drop→ Dial no.→Enter→Back→Back |
| **PC Procedure** | [F8]→[F6]→[F2]→Type table no.→[F10]→Select table type→[F10]→ Type entry no.→[F10]→[Alt]+[P]→Type no.→[F10]→[F5]→[F5] |

## Start and Stop Times for Subpatterns

Use this procedure to specify the time of day that calls are routed using Subpattern B routing information.

Subpatterns are used to provide two different routing patterns according to the time of day. This allows you to take advantage of lower rates that may apply to some or all lines, or to change restrictions on some facilities during off hours.

The stop time for Subpattern B is the start time for Subpattern A.

Enter the time in 4-digit, 24-hour notation, using leading zeros as necessary.

## Summary: Start and Stop Times for Subpatterns

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 3f, Automatic Route Selection Tables<br>3g, Automatic Route Selection Default and<br>Special Numbers Tables |

| | |
|---|---|
| **Factory Setting** | No time is specified, thus all calls are routed according to Subpattern A. |
| **Valid Entries** | 0000 to 2359 |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Tables→ARS→Sub B Start→Dial table no.→Enter→Drop→ Dial start time (0000–2359)→Enter→Sub B Stop→ Dial table no.→Enter→Drop→Dial stop time→Enter→Back→ Back |
| **PC Procedure** | F8 → F6 → F8 →Type table no.→F10 → Alt + P → Type start time (0000–2359)→F10 → F8 →Type table no.→F10 → Alt + P →Type stop time→F10 → F5 → F5 |

## Pool Routing

Use this procedure to identify the trunk pools on which to route calls to area codes and/or exchanges included in ARS tables.

A maximum of six routes (numbered 1 through 6) can be specified for each subpattern. Pool routing is programmed for Tables 1 through 16. Tables 17 and 18, the Default Toll and Default Local tables respectively, are factory set to the main pool and can be changed.

### Summary: Pool Routing

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 3f, Automatic Route Selection Tables 3g, Automatic Route Selection Default and Special Numbers Tables |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Not applicable |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Tables→ARS→Sub A Pools or Sub B Pool→ Dial table no. and pool route no.→Enter→ Dial pool dial-out code→Enter→Back→Back |
| **PC Procedure** | F8 → F6 → F3 or F10 →Type table no. and pool route no.→ F10 →Type pool dial-out code→F10 → F5 → F5 |

## Facility Restriction Level

Use this procedure to assign a Facility Restriction Level (FRL) to each route. The FRL ranges from 0 (least restrictive) to 6 (most restrictive) and is used to restrict user access to the route. The FRL assigned to extensions and Remote Access users is the opposite of the FRL assigned to routes, where 0 is the most restrictive and 6 is the least restrictive.

**NOTE** Pool routes must be programmed before you assign Facility Restriction Levels.

Facility Restriction Levels are assigned to Tables 1 through 18. Tables 17 and 18, the Default Toll and Default Local tables respectively, cannot be changed.

### Summary: Facility Restriction Level

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 3f, Automatic Route Selection Tables<br>3g, Automatic Route Selection Default and<br>Special Numbers Tables |
| **Factory Setting** | 3 (Table 18, the Default Local table has a factory setting of 2) |
| **Valid Entries** | 0 to 6 |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Tables→ARS→Sub A FRL ▶ or More and Sub B FRL→<br>Dial table no. (1–18) and pool route no. (1–6)→Enter→<br>Dial restriction level (0–6)→Enter→Back→Back |
| **PC Procedure** | F8 → F6 → F4 or PgUp and F1 →Type table no. (1–18) and pool<br>route no. (1–6)→F10 →Type restriction level (0–6)→F10 → F5 → F5 |

## Digit Absorption

Use this procedure to specify how many of the digits dialed (0 through 11) by the caller should be absorbed (not sent to the telephone company's central office) by the system when a call is made on an identified route.

Entries of 1 through 11 indicate that the system should not send the specified number of digits, starting with the first digit dialed by the user after the dial-out code.

Digit absorption is assigned to Tables 1 through 18.

## Summary: Digit Absorption

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 3f, Automatic Route Selection Tables |
| **Factory Setting** | 0 |
| **Valid Entries** | 0 to 11 |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Tables→ARS→SubA Absorb or ▶ or More and SubB Absorb→ Dial table no. (1–18) and pool route no. (1–6)→Enter→Drop→ Dial no. of digits to absorb (0–11)→Enter→Back→Back |
| **PC Procedure** | F8 → F6 → F6 or PgUp and F2 →Type table no. (1–18) and pool route no. (1–6)→F10 →Alt +P →Type no. of digits to absorb (0–11)→F10 → F5 → F5 |

## Other Digits

Use this procedure to specify other (extra) digits that must be added by the system to the beginning of the number dialed by the caller when calls are placed on an identified route.

A maximum of 20 digits can be added in any combination of the digits 0 through 9.

Special characters such as switchhook flash, Stop, and # cannot be included as extra digits. Pause is allowed in every position but the first.

Other digits are assigned to Tables 1 through 18.

## Summary: Other Digits

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 3f, Automatic Route Selection Tables |
| **Factory Setting** | 0 |
| **Valid Entries** | Up to 20 digits (any combination of 0 to 9) |
| **Inspect** | No |
| **Copy Option** | No |

| | |
|---|---|
| **Console Procedure** | Tables→ARS→Sub A Digit or ▶ or More and Sub B Digit→ Dial table no. (1–18) and pool route no. (1–6)→Enter→Drop→ Dial digits to be added (up to 20 digits; any combination of 0–9)→ Enter→Back→Back |
| **PC Procedure** | F8 → F6 → F7 or PgUp and F3 →Type table no. (1–18) and pool route no. (1–6)→F10 → Alt + P → Type digits to be added (up to 20 digits; any combination of 0–9)→F10 → F5 → F5 |

## Dial 0 Table

Use this procedure to specify pool routing, FRL, and Other Digits for the Dial 0 table.

Only one route can be specified. The Subpattern B route cannot be specified for this table, and digit absorption cannot be specified.

### Summary: Dial 0 Table

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 3g, Automatic Route Selection Default and Special Numbers Tables |
| **Factory Setting** | 3 |
| **Valid Entries** | 0 to 6 |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | Tables→ARS→▶ or More→Dial 0→Select ARS Pool or ARS FRL (0–6) or ARS Digits→Dial value→Enter→Back→Back→Back |
| **PC Procedure** | F8 → F6 → PgUp → F6 →Select ARS Pool or ARS FRL (0–6) or ARS Digits→Type value→F10 → F5 → F5 → F5 |

## Voice and/or Data Routing

Use this procedure to route voice, data, or voice and data. The voice/data specification is not supported with MERLIN MAGIX Release 1.0i.

### Summary: Voice and/or Data Routing

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | Hybrid/PBX |
| **Idle Condition** | Not required |
| **Planning Form** | 3g, Automatic Route Selection Default and Special Numbers Tables |
| **Factory Setting** | Voice |
| **Valid Entries** | Voice Only, Data Only, Voice/Data |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | `Tables`→`ARS`→`▶` or More→`Sub A Data` or `Sub B Data`→ Dial table no. and route no.→`Enter`→Select capability (Voice Only, Data Only, or Voice/Data)→`Enter`→`Back`→`Back` |
| **PC Procedure** | `F8`→`F6`→`PgUp`→`F7` or `F8`→Type table no. and route no.→`F10`→ Select capability (Voice Only, Data Only, or Voice/Data)→`F10`→ `F5`→`F5` |

# Night Service

The procedures in this section cover how to program the following optional Night Service features:

■ Night Service Group Assignment

■ Night Service with Outward Restriction

■ Night Service with Time Set

■ Night Service with Coverage Control

## Night Service Group Assignment

Use this procedure to assign extensions and Calling Groups to a Night Service group for coverage after hours.

A maximum of eight Night Service groups can be assigned (no more than one for each operator position assigned). Any number of extensions can be assigned to a Night Service group, and an extension can belong to more than one group.

A Calling Group can also be assigned to a Night Service group.

This option allows the System Manager to assign outside lines to Night Service groups in addition to extensions and Calling Groups for coverage after hours.

Any number of outside lines can be assigned to a Night Service group. Each outside line can belong to more than one group.

## Summary: Night Service Group Assignment

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 9a, Night Service: Group Assignment |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Not applicable |
| **Inspect** | Yes (extensions only) |
| **Copy Option** | No |
| **Console Procedure** | To assign a Calling Group to a Night Service group: `NightSrvce`→`GroupAssign`→`Calling Group`→Dial ext. no. of Night Service operator→`Enter`→Dial Calling Group no.→`Enter`→ `Back`→`Back` |
| | To assign an extension to a Night Service group: `NightSrvce`→`GroupAssign`→`Extensions`→Dial ext. no. of Night Service operator→`Enter`→Dial no. of extension→`Enter`→ `Back`→`Back` |
| | To assign an outside line to a Night Service group: `NightSrvce`→`GroupAssign`→`Lines`→Dial ext. no. of Night Service operator→`Enter`→Dial outside line number (801–880)→ `Enter`→`Back`→`Back` |
| **PC Procedure** | To assign a Calling Group to a Night Service group: [F10]→[F1]→[F2]→Type ext. no. of Night Service operator→[F10]→ Type Calling Group no.→[F10]→[F5]→[F5] |
| | To assign an extension to a Night Service group: [F10]→[F1]→[F1]→Type ext. no. of Night Service operator→[F10]→ Type no. of extension→[F10]→[F5]→[F5] |
| | To assign an outside line to a Night Service group: [F10]→[F1]→[F3]→Type ext. no. of Night Service operator→[F10]→ Type outside line number (801–880)→[F10]→[F5]→[F5] |

# Night Service with Outward Restriction

Use this procedure to prevent unauthorized use of telephones after hours. This feature requires the user to enter a password to make a call when Night Service is activated, unless one of the lists below applies. It also requires an operator to enter a password in order to activate Night Service manually.

To remove the password requirement, follow the procedure below and delete the current password (press the Drop button).

This procedure is also used to establish the following lists:

■  **Emergency Allowed List**. A list of telephone numbers that can be dialed without a password.

■  **Exclusion List**. A list of extensions that are exempt from password requirements.

A maximum of 10 telephone numbers can be included on the Emergency Allowed List, each number with a maximum of 12 digits.

Extensions included in the Exclusion List keep normal call restrictions (if any are assigned); however, they are not protected in any other way from unauthorized use after hours.

## Summary: Night Service with Outward Restriction

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 9b, Night Service: Outward Restrictions |
| **Factory Setting** | No password |
| **Valid Entries** | Four digits (any combination of 0 to 9) |
| **Inspect** | Yes (Exclusion List) |
| **Copy Option** | No |
| **Console Procedure** | NightSrvce→OutRestrict→Drop→Dial password (4 digits; 0–9)→Enter→Emergency→Dial item no.→Enter→Drop→Dial telephone no.→Enter→ExcludeList→Dial ext. no.→Enter→Back→Back |
| **PC Procedure** | F10 → F2 → Alt + P →Type password (4 digits; 0–9)→ F10 → F3 → Type item no.→ F10 → Alt + P →Type telephone no.→ F10 → F4 → Type ext. no.→ F10 → F5 → F5 |

## Night Service with Time Set

Use this procedure to specify the time of day and the days of the week when Night Service is to be activated and deactivated.

Enter the time of day as four digits, using 24-hour notation. Enter the day of the week as a single digit (0 to 6), with 0 being Sunday. If you enter an invalid number, the system truncates the number.

If you change the system time while Night Service is active, Night Service is deactivated automatically and you must manually reactivate it.

Operators can override the timer and turn Night Service on and off manually. This feature can be deactivated when out-of-the-ordinary situations occur (for example, a midweek holiday).

If system programming information is being loaded into memory from a backup diskette, the current day of the week must be reset.

Night Service can be turned off by using the following procedure:

`NightSrvce`→`Day of Week`→Dial 9→`Enter`→`Back`

### Summary: Night Service with Time Set

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 9c, Night Service: Time Set |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Day: 0 to 6; Time: 0000 to 2359 |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | To add or change start/stop time:<br>`NightSrvce`→`Start`→Drop→Dial start day (0–6) and time (0000–2359)→`Enter`→`Stop`→Drop→Dial stop day and time→`Enter`→`Back` |
| | To activate/deactivate:<br>`NightSrvce`→`Time Control`→`Off` or `On`→`Enter`→`Back` |
| **PC Procedure** | To add or change start/stop time:<br>F10→F6→Alt+P→Type start day (0–6) and time (0000–2359)→<br>F10→F7→Alt+P→Type stop day (0–6) and time (0000–2359)→<br>F10→F5 |
| | To activate/deactivate:<br>F10→F8→F1 or F2→F10→F5 |

## Night Service with Coverage Control

Use this procedure to enable or disable the Night Service Coverage Control option to automatically control the status of programmed Coverage VMS Off buttons.

When the Coverage Control option is enabled, a transition into Night Service (either by pressing a Night Service button or automatically by the Time Set option) automatically deactivates the VMS Coverage Off buttons (LED is off) and allows outside calls to go to VMS Coverage at night. When the system is taken out of Night Service (either by pressing a Night Service button or automatically by the Time Set option), programmed VMS Coverage Off buttons are activated (LED is on) and outside calls are prevented from going to VMS Coverage during the day.

When the Coverage Control option is disabled, Night Service status has no effect on programmed VMS Coverage Off buttons.

### Summary: Night Service with Coverage Control

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 9c, Night Service: Options |
| **Factory Setting** | Disabled |
| **Valid Entries** | Enable or Disable |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | NightSrvce→CoverContrl→Select Enable or Disable→Enter→Back |
| **PC Procedure** | [F10]→[F9]→Select Enable or Disable→[F10]→[F5] |

## Labeling

The procedures in this section cover how to add or change labels for the following:

■ Extension Directory

■ Lines or Trunks

■ Posted Message

■ Group Calling

■ System Speed Dial Directory

Programming on the system programming console:

Use the buttons next to the display to specify the letters A through I and punctuation. Use the line/feature buttons to specify additional alphanumeric characters for labels. Use the template provided with the 4424LD+ or MLX-20L telephone to see which line buttons correspond to which alphanumeric characters.

Programming with WinSPM:

■ Use the PC keyboard for labels. All letters appear on the screen in uppercase.

NOTE▶ See the *4424LD+ User's Guide* or the *MLX-20L User's Guide* for instructions on creating or editing a personal directory.

## Extension Directory

Use this procedure to establish alphanumeric system labels for display telephone users to identify the person calling or leaving a message. This procedure is also used to program the Extension Directory feature for the 4412D+, 4424D+, and 4424LD+ Telephones and for the MLX telephones.

NOTE▶ A label can have a maximum of seven characters.

### Summary: Extension Directory

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 2a, System Numbering: Extension Jacks |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Not applicable |
| **Inspect** | No |
| | Copy Option |
| | No |
| **Console Procedure** | ▶ or More→Labeling→Directory→Extension→Dial ext. no.→Enter→Drop→Enter label→Enter→Back→Back→Back |
| **PC Procedure** | PgUp→F1→F1→F2→Type ext. no.→F10→Alt+P→ Type label→F6→F5→F5→F5 |

## Lines or Trunks

Use this procedure to establish alphanumeric system labels for display telephone users to identify the line or trunk being used.

### Summary: Lines or Trunks

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 2c, System Numbering: Line/Trunk Jacks |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Not applicable |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | ▶ or More→Labeling→LinesTrunks→Dial line/trunk no.→Enter→Drop→Enter label→Enter→Back→Back |
| **PC Procedure** | PgUp→F1→F2→Type line/trunk no.→F10→Alt+P→Type label→F6→F5→F5 |

## Posted Message

Use this procedure to add or change existing posted messages. The posted messages allow callers with display telephones to know why the called extension does not answer.

Each posted message can have a maximum of 16 characters. Messages 2 through 20 can be changed through programming. Message 1, Do Not Disturb, cannot be changed.

### Summary: Posted Messages

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 8a, Label Form: Posted Message |
| **Factory Setting** | First 10 messages |
| **Valid Entries** | 1 to 20 |
| **Inspect** | No |
| **Copy Option** | No |

| Console Procedure | ▶ or More→Labeling→PostMessage→Dial message no. (1–20)→Enter→Drop→Enter message→Enter→Back→Back |
|---|---|
| PC Procedure | PgUp → F1 → F3 →Type message no. (1–20)→F10 → Alt +P → Type message→ F6 → F5 → F5 |

## Group Calling

Use this procedure to establish alphanumeric system labels for display telephone users to identify Calling Groups.

A label can have a maximum of seven characters.

### Summary: Group Calling

| Programmable by | System Manager |
|---|---|
| Mode | All |
| Idle Condition | Not required |
| Planning Form | 6e, Group Calling |
| Factory Setting | Not applicable |
| Valid Entries | Not applicable |
| Inspect | No |
| Copy Option | No |
| Console Procedure | ▶ or More→Labeling→Grp Calling→Dial Calling Group ext. no.→Enter→Drop→Enter label→Enter→Back→Back |
| PC Procedure | PgUp → F1 → F4 →Type Calling Group ext. no.→F10 → Alt +P → Type label→ F6 → F5 → F5 |

## System Speed Dial Directory

Use this procedure to establish System Speed Dial numbers for all system users. You can also use this procedure to enter the alphanumeric labels shown on display telephones (for the System Directory feature of the MLX telephone).

A total of 130 System Speed Dial numbers can be entered, with a maximum of 11 characters per label.

Speed dial code assignments are 600 through 729.

**Summary: System Speed Dial Directory**

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 8b, System Speed Dial |
| **Factory Setting** | Not applicable |
| **Valid Entries** | 600 to 729 |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | ▶ or More→Labeling→Directory→System→ Dial dial code no. (600–729)→Enter→Drop→Enter label→ Enter→Backspace→Dial telephone no. (up to 20 digits and special characters)→Enter→ Yes or No→Enter→Back→ Back→Back |
| **PC Procedure** | PgUp→ F1 → F1 → F1 →Type dial code no. (600–729)→F10→ Alt + P →Type label→ F6 → F2 →Type telephone no. (up to 20 digits and special characters)→ F6 → F1 or F2 → F6 → F5 → F5 → F5 |

# Print Reports

Use the procedures in this section to change the language for system reports and to print the system reports.

## Report Language

Use this procedure to change the language of the system reports. Unless you change the report language, reports are printed in the language chosen as the system language.

**Summary: Report Language**

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | 1, System Planning |
| **Factory Setting** | U.S. English |
| **Valid Entries** | U.S. English, Canadian French, Latin American Spanish, or Brazilian Portuguese |
| **Inspect** | No |

| | |
|---|---|
| **Copy Option** | No |
| **Console Procedure** | ▶ or More→Language→Printer→Select English or French or Spanish or Portuguese→Enter→Back |
| **PC Procedure** | PgUp→ F6 → F4 →Select English or French or Spanish or Portuguese→F10 → F5 |

## Printing System Reports

The system can be used to print a variety of reports. You can print individual reports or use the All option to print the entire set of available reports, including all report sections and options.

Use this procedure to print the reports listed below. With the exception of Trunk Information, the dash lists under the bullets show the sections of each report that automatically print when the report option is selected.

■ All

— Each report

— All report options

■ System Set Up

■ System Dial Plan

— Pools

— Telephone Paging Zones

— Direct Group Calling

— Lines/Trunks

— Stations (Extensions)

■ Label Information

— Telephone Personal Directory

— Message Numbers and Posted Messages

■ Trunk Information[1]

— TIE

— DID

— Loop

— General

■ E1 Information

---

1  Trunk option must be specified

- Remote Access
  - — General Options
  - — Non-TIE Restrictions
  - — TIE Restrictions
  - — Barrier Code Restrictions
- Operator Information
  - — Position
  - — General Options
  - — DSS Options
  - — QCC Operators
  - — Operator Information
- Allowed Lists
- Allowed Lists Assigned to Extensions
- Disallowed Lists
- Disallowed Lists Assigned to Extensions
- Automatic Route Selection
- Tables
- Extension Directory
- System Directory
- Group Page
- Extension Information
- Group Coverage
- Group Calling
- Night Service
- Call Pickup Groups
- Error Logs
- Authorization Codes
- BRI Information Report
- Non-Local Dial Plan
- Service Observing Groups

**NOTE** If you select the All option, keep in mind that the reports take from 30 minutes to 6 hours to print depending on the size of the system. You may want to schedule use of the printer during off-peak hours.

If you select a report for which there is no information, the report header still prints.

Print reports if you cannot back up your system programming information.

Do not print reports if your system must handle more than 100 calls per hour.

If you are printing from the console, your printer must be connected to the SMDR port. If you are programming on a PC with WinSPM, you have the following choices:

■ Print reports on the SMDR printer (if available)

■ Print reports on the PC printer

■ Save reports (on hard disk or floppy)

■ View reports (browse)

See Chapter 2, "Programming with WinSPM," for details.

### Summary: Printing System Reports

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required |
| **Planning Form** | Not applicable |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Any saved report |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | To print trunk information:<br>▶ or More→Print→Trunk Info→Select trunk type→Back |
| | To print extension information:<br>▶ or More→Print→More→Ext Info→Dial extension no.→Enter→Back |
| | To print all other reports:<br>▶ or More→Print→Select report→Back |
| **PC Procedure** | To print trunk information:<br>PgUp→F3→F6→Select trunk type→F5 |
| | To print extension information:<br>PgUp→F3→PgUp→F10→Type extension no.→F10→F5 |
| | To print all other reports:<br>PgUp→F3→Select report→F5 |
| | To save report on disk:<br>PgUp→F3→Select report→F10→Select GOTO FLOPPY→F10 |
| | To view report:<br>Ctrl+F8 |

# Memory Card

A PCMCIA (Personal Computer Memory Card International Association) interface slot is present on the processor module. The slot is a standard interface through which information can be added to or obtained from the system using a memory card. The PCMCIA interface slot accepts one memory card at a time.

This section covers the following memory card functions:

- Memory Card Formatting

- Backup

- Automatic Backup

- Restore

## Card Types

The types of memory cards are described below. The card type is identified by a preprinted, color-coded label.

- **Upgrade Card**. This card is used for MERLIN MAGIX Integrated System software upgrades. The upgrade can be performed by the System Manager using the memory card and the Maintenance option on the SPM Main menu. See *Maintenance and Troubleshooting* for information about this feature.

  This card is identified by an orange label with black lettering.

- **Translation Card**. The backup and restore procedures previously available to System Managers through SPM (using the PC and floppy disks) can now be performed using the memory card and the new Backup/Restore option on the System menu. A new automatic backup feature permits you to set the system to perform automatic backups to the memory card on a daily or weekly basis. See "Backup" on page 3-168 and "Restore" on page 3-173 for more information.

  This card is identified by a white label with black lettering.

- **Forced Installation**. For use by qualified service technicians only, this card is used when the system software has been corrupted and a re-installation must be done at the customer site. The use of the card for forced installation is reserved for emergency situations in which the system software on the processor module has been damaged.

  This card is identified by an orange label with black lettering. In addition, black stripes are present on the card to distinguish it from an upgrade card.

Figure 3-4 shows a sample Translation card.



**Figure 3-4. PCMCIA Memory Card**

## Inserting the Card

To insert the card, hold the card with the Lucent logo facing up and the arrow pointing toward the slot. See Figure 3-5 for the proper way to insert the memory card into the slot on the processor module.



**Figure 3-5. Inserting the Memory Card**

## Memory Card Formatting

The memory card may have to be formatted before you begin any manual or automatic backup procedures. This section details the screens and messages that appear during the format procedure.

⚠️ **CAUTION:**

*Formatting overwrites previous data on the memory card. Make certain that there is no important information on the card before you begin formatting.*

### Unformatted Card

```
Memory Card Backup:
Inserted Memory Card is
not the correct type.
Do you want it formatted?
Yes
No
Back
```

If you begin a backup procedure with an unformatted or incorrectly formatted card, the above screen appears.

The inserted memory card is not the correct type. You have the option of formatting the memory card as a translation memory card or repeating the backup procedure with a different memory card.

**NOTES**▶ ■ Only 4 MB Series I or Series II PCMCIA memory cards may be formatted, except those already formatted as translation cards.

■ If a memory card cannot be formatted, a message appears on screen. These messages are noted in the procedures as appropriate.

■ A memory card may need to be formatted if it is intended for use as a translation card but is currently blank or contains data other than MERLIN MAGIX Integrated System backup files.

## Format Warning

```
Format Memory Card:

All data on card will be

DELETED.

Do you want to continue?

Yes

No

Back
```

This screen appears if you respond to the system prompt to format the memory card.

Select Yes (or click ⌷F3⌷) to begin the memory card format. Table 3-6 lists the screen messages that may appear while formatting is in progress.

**Table 3-6.   Memory Card Formatting Messages**

| Message | What it Means |
|---|---|
| Formatting Memory Card | The format is in progress. |
| Formatting of Memory Card Completed | The format was successful and has completed. |
| Memory Card cannot be formatted | The memory card cannot be formatted. Remove the card and repeat the procedure with another card. |
| Formatting of Memory Card FAILED | The format was unsuccessful. Remove the card and repeat the procedure with another card. |
| Missing Card or Card Not Inserted Correctly | Verify that the card is inserted correctly and repeat the procedure. |

If Exit (on the 4424LD+ Telephone), Home (on the MLX-20L telephone) or Menu (on both telephones) is pressed during a format procedure, the format is terminated. The data on the memory card may be lost. See Chapter 1, "Programming Basics," for details about these keys.

## Backup

Use this procedure to make a copy of your customized system data. You should create a backup at least three times during system installation (so that programmed information is not lost) and once after each system upgrade, service technician visit, or major system reconfiguration.

The Inspect feature (Inspct or $\boxed{\text{PgDn}}$) is available to view the attributes of the backup files on the memory card prior to initiating the backup procedure. The attributes included on the Inspect screen are the filename, the time and date of the file creation/update, the location of the system programming port, and information about the system software release from which the backup was made.

The list of backup files contains three manual backup filenames and two automatic backup filenames. The factory set names of the manual backup files are BACK1.*****, BACK2.*****, and BACK3.*****. When you select one of the backup filenames, the system automatically replaces the * in the filename with the current month and day (mmdd). For example, BACK1.0116 would appear if you selected BACK1.***** and performed the backup procedure on January 16. You can rename any of the three files during the backup procedure. The automatic backup filenames are AUTO.BACK1 and AUTO.BACK2. You cannot change the names of these files.

If you enter a filename that currently exists, the message `File already exists` appears. You must enter another filename.

While the backup is in progress, you cannot access system programming functions, your Personal Directory, or alarm clock functions (any programmed alarms are temporarily deactivated). You may terminate the backup procedure at any point prior to receiving confirmation of a successful backup.

If any type of programming is taking place at another extension when you begin the backup procedure, the backup is cancelled and the number of the first busy extension appears on the screen. Attempt the backup procedure again when the busy extension becomes idle.

If the system is turned off during a backup procedure, the backup is terminated. The system performs a System Reset (cold start), after which you may repeat the backup procedure.

If Exit (on the 4424LD+ Telephone), Home (on the MLX-20L telephone) or Menu (on both telephones) is pressed during a backup procedure, the backup is terminated. This may result in the deletion of an old backup file. See Chapter 1, "Programming Basics," for details about these keys.

**NOTE** If the system performs a System Erase (frigid start), all programming is set to the factory-set values. If a previous backup file is available, perform a restore. If not, the system must be reprogrammed. See "Restore" on page 3-173 for information about the system restore procedure. Also see "Backup Messages" on page 3-171 for information about errors that may occur during the backup procedure.

## Summary: Backup

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required (No extensions are allowed to be in programming mode except system programming console) |
| **Planning Form** | 1, System Planning |
| **Factory Setting** | Not applicable |
| **Valid Entries** | 1- to 11-character filename |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | Insert memory card→System→Back/Restore→Backup→ Select backup file→Dial the new backup filename→Enter→Yes→ Back→Back→Back |
| **PC Procedure** | Insert memory card→[F1]→[F9]→[F1]→Select backup file→ Type the new backup filename→[F6]→[F1]→[F5]→[F5]→[F5] |

## Automatic Backup

To preserve the most recent copy of your customized system data, you can program the system to automatically backup programming information onto the translation memory card. Automatic backups may be set for daily or weekly operation. If automatic backup is activated, the time may be set for daily backup (factory setting is 2:00 am) or the time and day may be set for weekly backup (factory setting is 2:00 am Sunday).

The system places the automatic backup into one of two designated files: AUTO.BACK1 and AUTO.BACK2. If both files are empty, the system places the backup in AUTO.BACK1. If both files already contain backups, the system selects the older of the two files and overwrites it. The system performs this file "toggle" each time it performs an automatic backup.

While the backup is in progress, you cannot access system programming functions, your Personal Directory, or alarm clock functions (any programmed alarms are temporarily deactivated).

If any type of programming is taking place at an extension during the automatic backup procedure, the backup is cancelled. The system does not re-attempt the backup.

If an automatic backup fails for any reason (including a system-busy condition), all of the programmed alarm buttons on system operator consoles light and the information is recorded in both the permanent error log and the last 10 error logs. The system does not re-attempt the backup.

Also see "Backup Messages" on page 3-171 for information about errors that may occur during the automatic backup procedure.

NOTE▶ If an automatic backup fails for any reason (except when the failure results because the memory card is write-protected), the automatic backup feature is turned off. Follow the procedure below to reprogram automatic backups.

## Summary: Automatic Backup

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | Not required (No extensions are allowed to be in programming mode, including the system programming console) |
| **Planning Form** | 1, System Planning |
| **Factory Setting** | Weekly backup: Sunday at 2:00 am (if daily backup is selected, time is factory set for 2:00 am) |
| **Valid Entries** | Daily: hhmm (00 to 23; 00 to 59) <br> Weekly: dhhmm (0 to 6; 00 to 23; 00 to 59) |
| **Inspect** | No |
| **Copy Option** | No |
| **Console Procedure** | To program daily backup: <br> Insert memory card→System→Back/Restore→Auto Backup→ Daily→Drop→Dial time (00–23; 00–59)→Enter→Back→Back <br><br> To program weekly backup: <br> Insert memory card→System→Back/Restore→Auto Backup→ Weekly→Drop→Dial day and time (0–6; 00–23; 00–59)→Enter→ Back→Back |
| **PC Procedure** | To program daily backup: <br> Insert memory card→[F1]→[F9]→[F2]→[F2]→[Alt]+[P]→ Type time (00–23; 00–59)→[F10]→[F5]→[F5] <br><br> To program weekly backup: <br> Insert memory card→[F1]→[F9]→[F2]→[F3]→[Alt]+[P]→ Type day and time (0–6; 00–23; 00–59)→[F10]→[F5]→[F5] |

## Backup Messages

During manual or automatic backup procedures, additional screens may appear to alert you to problems with the translation memory card, the backup file, or the backup procedure. This section contains displays of each screen and information about what to do if the screen appears.

NOTE ▶ The screens shown in this section are from the manual backup procedure; however, the screens that may appear in both the manual and automatic backup procedures are similar. The screens in both procedures differ only in the appearance of the first line. On the automatic backup screens, Auto Memory Card Backup replaces Memory Card Backup shown on the screens below.

### Backup Cancelled

If the system detects an error, either on the Memory Card or with the backup file, or if you terminate the backup, this screen appears.

```
Backup x:

BACKUP IS CANCELLED.

File has been DELETED.




Back
```

$x$ = backup filename

The backup file being created is deleted and the backup is terminated. You must repeat the backup procedure.

### Card Removed While Backup Is in Progress

The Memory Card is not inserted or is inserted incorrectly while a backup is in progress. The backup file that was being created is deleted and the backup is terminated. You must reinsert the Memory Card and repeat the backup procedure.

```
Backup x:
BACKUP IS CANCELLED.
Verify that Memory Card

has been inserted

correctly.

File has been DELETED.


Back
```

$x$ = backup filename

### Card Missing or Card Not Inserted Correctly

The Memory Card is either not inserted or is inserted incorrectly. The backup is terminated. You must reinsert the Memory Card and repeat the backup procedure. This screen may also appear if the wrong type of Memory Card is inserted and a backup or automatic backup is requested within one minute of insertion. Verify that the card is a translation Memory Card.

```
Memory Card Backup:
Verify that Memory Card
has been inserted
correctly.


Back
```

### Card Is Write-Protected

The Memory Card is write-protected. You must remove the Memory Card, flip the write-protect tab, reinsert the Memory Card, and repeat the backup procedure.

```
Memory Card Backup:
Memory Card is Write-
Protected.
Reset Write-Protect Tab
on Memory Card.

Back
```

⚠ **CAUTION:**
*The Memory Card may be write-protected to avoid the accidental erasure of the backup files. Make certain this is not the case before you change the Write-Protect Tab.*

## Card Failure

If the card is damaged, repeat the backup with a different card. If a backup is in progress and fails, the system makes two additional attempts at the backup. At the start of each attempt, a message appears with the percentage of the backup that is completed. If the backup fails after three attempts, the screen shown below appears. Repeat the backup procedure using a different file and/or Memory Card.

```
Memory Card Backup:
Backup Failure
Try a different file or
a new Memory Card.


Back
```

## Restore

Use this procedure to restore system conditions that were backed up onto a translation memory card. The information in a backup file on the translation card is copied to the system.

The restore procedure is necessary under the following conditions:

■ System RAM is corrupt.

■ A previously stored set of system conditions is preferred over the current set.

■ Processor module is replaced.

■ After a System Erase (frigid start) has been performed.

■ System software has been reinstalled.

The Inspect feature (Inspct or [PgDn]) is available to view the attributes of the backup files on the memory card prior to initiating the restore procedure. The attributes included on the Inspect screen are the filename, the time and day of the file creation/update, the location of the system programming port, and information about the system software release from which the backup was made.

If any type of programming is taking place at another extension when you begin the restore procedure, the restore is cancelled and the number of the first busy extension appears on the screen. Repeat the restore procedure when the busy extension becomes idle.

If a line is busy (incoming call or active call) when you begin the restore procedure, the restore is cancelled and the number of the first active line appears on the screen. Repeat the restore procedure when the line becomes idle.

Also see "Restore Messages" on page 3-174 for information about errors that may occur during the restore procedure.

## Summary: Restore

| | |
|---|---|
| **Programmable by** | System Manager |
| **Mode** | All |
| **Idle Condition** | System Forced Idle |
| **Planning Form** | Not applicable |
| **Factory Setting** | Not applicable |
| **Valid Entries** | Not applicable |
| **Inspect** | Yes |
| **Copy Option** | No |
| **Console Procedure** | Insert memory card→System→Back/Restore→Restore→ Select restore file→Yes |
| **PC Procedure** | Insert memory card→F1 →F9 →F5 →Select restore file→ F3 |

## Restore Messages

During the restore procedure, additional screens may appear to alert you to problems with the translation Memory Card, the backup file or the restore procedure. This section contains displays of each screen and information about what to do if the screen appears.

## Card Missing or Card Not Inserted Correctly

```
Memory Card Restore:

Verify that Memory Card

has been inserted

correctly.



Back
```

The Memory Card is either not inserted or inserted incorrectly. The restore is aborted. You must reinsert the card and repeat the restore procedure. This screen may also appear if the wrong type of Memory Card is inserted and a restore is requested within one minute of insertion. Verify that the card is a translation Memory Card.

## Card Removed after Confirmation

```
Memory Card Restore:
RESTORE IS CANCELLED.
System is DOWN.
```

The Memory Card was removed from the PCMCIA interface slot while the restore was in progress. The restore is aborted and the system performs a System Erase (frigid start). You must reinsert the Memory Card and repeat the restore procedure.

## Wrong System Programming Port

```
Restore n:
Change Sys Programming
Port to Extension xxxx
before Restoring.



Back
```

$n$ = filename selected
$xxxx$ = system programming port extension

The system programming port is not set to the same system programming port as that set in the backup file. The restore is aborted. Use the Inspect feature to view the port of the file on the card. Change the system programming port to match the port shown on the card (see "System Programming Position Assignment" on page 3-3) and repeat the restore procedure.

## Release Mismatch

```
Restore n:
File is Not Compatible
for Release X.Y
Restore Cancelled.
Conversion Required.

Back
```

$n$ = filename selected
$X.Y$ = release number

This screen only appears if the releases are not compatible.

## Card Failure Before Confirmation

```
Memory Card Restore:
Restore Failure.
Try a different file
or a new Memory Card.



Back
```

If the restore fails because the card is damaged, repeat the restore procedure using a different file and/or Memory Card.

## Card Failure after Confirmation

```
Restore n:
Restore Failure
RESTORE IS CANCELLED.


System is DOWN.

```

`n` = filename selected

If the restore fails because the card is damaged, the system performs a System Erase (frigid start). Repeat the restore procedure using a different file and/or Memory Card.

## Wrong Type of Card

```
Memory Card Restore:
Inserted Memory Card is
not the correct type.
Remove and insert MERLIN
MAGIX Backup/Restore
Card.
Back
```

The inserted card does not match the card option selected from the System menu. Remove the card and repeat the restore procedure with the correct type of card. See "Card Types" on page 3-163 for information about the card labels.

# Menu Hierarchy

# A

## Overview

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 second menu screen may lead to still another menu screen, and so on, up to six screens, as shown on 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 either 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 the WinSPM program.

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 one of the following:

■ Programmed Inspect button (4400-Series telephones)

■ Fixed Inspect button (MLX telephones)

■ PgDn

# System Programming

## System
- Restart
- SProg Port
- **Mode**
  - Key
  - Hybrid/PBX
  - BehindSwtch
- **Board Renum**
- **MaintainBusy**
  - Enable
    - *Auto Busy Tie Trunks*
    - *- Enable*
    - *- Disable*
  - Disable
- **Date**
- **Time**
- **Break Timer**
- **Back/Restore**
  - Backup
  - Restore
  - Auto Backup
  - *- Off*
  - *- Daily*
  - *- Weekly*
- **Tables**
  - SpeclNumbers
  - *- Table Input*
  - *- Other Digit*
  - *- Match Delay*

## SysRenumber
- **Default Numbering**
  - 2-Digit
  - 3-Digit
  - SetUp Space
- **Single**
  - Lines*
  - Extensions*
  - Pools*
  - Group Page*
  - GrpCalling*
  - Adjuncts*
  - Park*
  - ARS DialOut
  - RemoteAccs
  - DSS Buttons*
  - ListDilrctNo
- **Block**
  - Lines
  - Extensions
  - Adjuncts
- **NonLocal UDP**

## Operator
- **Positions**
  - Direct Line*
  - Queued Call*
- **Queued Call**
  - Hold Rtn
  - *Return to Queue*
  - *Remain On Hold*
  - HoldRelease
  - *Auto Hold*
  - *Auto Release*
  - Threshold
  - ElvatePrior
  - InQue Alert*
  - *InQue Alert Enable*
  - *InQue Alert Disable*
  - Call Types
  - *Dial 0*
  - *- Priority*
  - *- Operator**
  - *Follow/Frwd*
  - *UnassignDID*
  - *- Priority*
  - *- Operator**
  - *ListedNumbr*
  - *- Priority*
  - *- Operator**
  - *QCC Ext*
  - *Returning*
  - *- Priority*
  - *- Operator**
  - *GrpCoverge*
  - *- Priority*
  - *- Operator**
  - Msg Center*
  - ExtndComplt
  - *Automatic Complete*
  - *Manual Complete*
  - Return Ring
  - QCC Backup
  - Voice Annc
- **Hold Timer**
- **DLC Hold**
  - Auto Hold Enable
  - Auto Hold Disable

## LinesTrunks

### Modules
- (E1)
- *Type*
  - *- Loop*
  - *- DID**
  - *- DIOD**
  - *- TIE*
  - *- Unequipped*
- *- All Loop*
- *- All DID*
- *- All DIOD*
- *- All TIE*
- *- All Unequip*
- *Suppression*
  - *- AMI*
  - *- HDB3*
- *Clock Sync*
- *Priority*
  - *- Primary*
  - *- Secondary*
  - *- Tertiary*
  - *- None*
- *Source*
  - *- Loop*
  - *- Local*
- *Activation*
  - *- Active*
  - *- Not Active*
- *Channel/Unit*
  - *- Foreign Exchange*
  - *- Special Access*
- (4xx GS/LS)
- (8xx GS/LS)
- *GroundStart*,
- *LoopStart**
- *All Ground*
- *All Loop*

### TIE Lines
- Direction
  - *Two Way*
  - *OutGoing*
  - *Incoming*
- Intype
  - *Wink*
  - *Delay*
  - *Immed*
  - *Auto*
- Outtype
  - *Wink*
  - *Delay*
  - *Immed*
  - *Auto*
- E&M Signal
  - *Type 1S*
  - *Type 1C*
  - *Type 5*
- Inmode
- Outmode
- Dialtone
- AnsSupvr
- Disconnect

### TT/LS Disc
- OutMode
- LS Disconnect
  - *Yes*
  - *No*

### DID/DIOD
- Block
- Type
  - *Immed*
  - *Wink*
- Disconnect
- ExpectDigit
- DeleteDigit
- Add Digits
- Signaling
  - *Rotary*
  - *Touch Tone*
- InvalDstn
  - *Send to Backup Extension*
  - *Return Fast Busy*

### PRI

### R2/CaS SignI
- Country Code
- Timing
- Pulse Dial
  - *Dialing Bit*
  - *Break Timer*
- Tariff Pulse
  - *On/Off*
  - *- On*
  - *- Off*
  - *Meter Bit*
  - *- Bit A*
  - *- Bit B*
  - *- Bit C*
  - *Min Pulse*
  - *Min Pause*
- Encoding
  - *Mu-law*
  - *A-law*
- MFC Dialing
  - *Signals*
  - *Send Signals*
  - *ExpectDigit*
  - *Send Signals*
  - *NumberToSend*
  - *- Extension Only*
  - *- Extension and Base*
  - *- Line Telephone Number*

### Copy
- Single
- Block

### Pools

### Toll Type

### HoldDiscnct

### DialTone Det
- Activation
- Lines/Trunks
- Time-out
- AfterTimeOut
- Second DT
- DT on Hold
- MaintenBusy

### Glare Guard

### Busy Tone Det
- BTD Trunk Status/Change
- BTD Feature
  - *Cadence*
  - *Level*
  - *BTD Threshold Timer*

### PrincipalUsr
### QCC Prior
### QCC Oper
### LS-ID Delay
### ClockSync
- Primary
  - *Loop*
  - *Local*
- Secondary
  - *Loop*
  - *Local*
- Tertiary
  - *Loop*
  - *Local*

### BRI
### T1 Data NW
### UDP
### CSU/DSU

### RemoteAccess
- LinesTrunks*
  - *Dedicated*
  - *Shared*
  - *No Remote*
- Non-TIE
  - *BarrierCode*
  - *- BarrierCode Required*
  - *- BarrierCode Not Required*
  - *Restriction*
  - *- Unrestricted*
  - *- Outward Restrict*
  - *- Toll Restrict*
  - *ARS Restrict*
  - *Allow List**
  - *Disallow Lst**
- TIE Lines
  - *BarrierCode*
  - *- BarrierCode Required*
  - *- BarrierCode Not Required*
  - *Restriction*
  - *- Unrestricted*
  - *- Outward Restrict*
  - *- Toll Restrict*
  - *- ARS Restrct*
  - *- Allow List**
  - *- DisallowLst**
- BarrierCode
  - *SProg/Maint*
  - *Code Info*
  - *- Code Length*
  - *- Code Entry*
  - *Restriction*
  - *- Unrestricted*
  - *- Outward Restrict*
  - *- Toll Restrict*
  - *- ARS Restrct*
  - *- Allow List**
  - *- DisallowLst**
- AutoQueuing
  - *Enable*
  - *Disable*

## Extensions
- **LinesTrunks**
- **Line Copy**
  - Single
  - Block
- **Dial OutCd**
- **Restriction**
  - Unrestricted
  - Outward Restrict
  - Toll Restrict
- **RestrctCopy**
  - Single
  - Block
- **Account***
- **BIS/HFAI***
- **Call PickUp***
- **VoiceSignl***
- **Ext Status***
- **Group Page***
- **Group Cover***
- **Grp Calling***
  - Hunt Type
    - *Circular*
    - *Linear*
    - *Most Idle*
  - DelayAnnce
    - *Primary Announcements*
    - *Secondary Announcement*
    - *Announcment Interval*
    - *Repeat Announcement*
  - GrpCoverage
  - Message
  - Queue Alarm
    - *Alarm Threshold 1*
    - *Alarm Threshold 2*
    - *Alarm Threshold 3*
  - Xtrnl Alert
    - Overflow
    - *Number Based*
    - *Time Based*
    - *Prompt Based*
  - Members*
  - Line/Pool*
  - Group Type
    - *Auto Login*
    - *Auto Logout*
    - *Integ VMI*
    - *Generic VMI*
  - Queue Control
  - Priority
  - Support
- **ARS Restrct**
- **Mic Disable***
- **Remote Frwd***
- **Auth Code**
- **Delay Frwd**
- **TrkTransfer**
- **Cover Delay**
  - Primary
  - Secondary
- **HotLine**
- **DisplayPref**
  - Calling Name
  - Calling Num
  - Both
- **ServiceObs**
  - Observer
  - Warning
    - *Yes*
    - *No*
  - Members
- **Rotary Enable**
- **ETR**

## Options
- **Transfer**
  - Return Time
  - One Touch
    - *Transfer*
    - *- Manual*
    - *- Automatic*
  - Hold
  - Audible
    - *MusicOnHold*
    - *Ringback*
  - Type
    - *Voice Announce*
    - *Ring*
- **CampOn**
- **CallParkRtn**
- **Delay Ring**
- **Callback**
- **Ext Status**
  - Hotel
  - GrpCall/CMS
- **SMDR**
  - Format
    - *Basic SMDR*
    - *ISDN SMDR*
  - Call Length
  - Call Report
    - *In/Out*
    - *Out Only*
  - New Page
  - Auth Code
    - *Home Extension Number*
    - *Authorization Code*
    - *Talk Time*
  - UDP
- **Inside Dial**
  - Inside
  - Outside
- **ReminderSrv**
- **Unassigned**
  - QCC Queue
  - Extension
  - Grp Calling
- **BehndSwitch**
  - Transfer
  - Conference
  - Drop
- **RecallTimer**
  - 350 ms
  - 450ms
  - 650 ms
  - 1 sec
- **Rotary**
  - Delay
  - No Delay
- **Inter-Digit**
- **Ringing Freq**
- **SecDTTimer**
- **Ring Disc**
  - Activation
  - Timer
- **Call Tones**
  - Action
  - Frequency
  - Duration

## Tables
- **AllowList**
- **AllowTo**
- **Disallow**
- **DisallowTo**
- **ARS**
  - ARS1+7Dial
  - ARS Input
  - ARS Input
    - *6-Digit*
    - *Area Code*
    - *Exchange*
    - *1+7*
  - Sub A Pools
  - Sub A FRL
  - Sub A Absorb
  - Sub A Digit
  - Sub B Start
  - Sub B Stop
  - Sub B Pool
  - Sub B FRL
  - Sub B Absorb
  - Sub B Digit
  - SpeclNumber
    - *ARS FRL*
    - *ARS Digit*
  - Dial 0
    - *ARS Pool*
    - *ARS FRL*
    - *ARS Digits*
  - Sub A Data
    - *Voice Only*
    - *Data Only*
    - *Voice/Data*
  - Sub B Data
    - *Voice Only*
    - *Data Only*
    - *Voice/Data*
- **UDP Routing**

## AuxEquip
- **MusicOnHold**
- **Ldspkr Pg***
- **Fax**
  - Extension*
  - Msg Waiting*
  - Threshold
- **MaintAlarms**
- **VMS/AA**
  - TransferRtn
  - TT Duration
  - TT Interval
- **CTI Link**

## NightSrvce
- **Group Assign**
  - Extensions*
  - Calling Grp
  - Lines
  - CoverContrl
- **OutRestrict**
- **Emergency**
- **ExcludeList***
- **Start***
- **Stop***
- **Time Control**
  - *On*
  - *Off*
- **Cover Contrl**

## Labeling
- **Directory**
  - System
  - Extension
  - Personal
- **LinesTrunks**
- **PostMessage**
- **Grp Calling**

## Data
- **Voice/Data***
- **2B Data**

## Print
- **All**
- **SysSet-up**
- **Dial Plan**
- **Non-Locl UDP**
- **Labels**
- **Trunk Info**
  - TIE
  - DID
  - Loop/Ground
  - General
  - S56 Data
- **T1 Info**
- **PRI Info**
- **RmoteAccess**
- **Oper Info**
- **AllowList**
- **AllowListTo**
- **DisallowLst**
- **DisallowTo**
- **ARS**
- **Ext Direct**
- **Sys Direct**
- **Group page**
- **Ext Info**
- **Grpcoverage**
- **Grp Calling**
- **Night Service**
- **Call Pickup**
- **Error Log**
- **Auth Code**
- **BRI Info**
- **Non-Local UDP**
- **ServiceObs**

## Cntr-Prg
- Program Ext
- Copy Ext

## Language
- **System Lang**
  - English
  - French
  - Spanish
  - Portuguese
- **Extensions**
  - Single
    - *English*
    - *French*
    - *Spanish*
    - *Portuguese*
  - Block
    - *English*
    - *French*
    - *Spanish*
    - *Portuguese*
- **SMDR**
  - English
  - French
  - Spanish
  - Portuguese
- **Printer**
  - English
  - French
  - Spanish
  - Portuguese

---

Please insert this Menu Hierarchy page in Appendix A of this manual.

---

*\* The inspect feature can be used with this menu option. Press Inspect or PgDn.*

*The Inspect feature can be used in entry mode with this menu option. Press Inspect or PgDn while in entry mode. This feature is not supported in Release 1.0i of the MERLIN MAGIX system.*