

# MERLIN MAGIX® Integrated System

Pocket Reference
Release 3.0 and Earlier

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Issue 1
May 2003

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## 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.

## Avaya Web Page

The world wide web home page for Avaya is http://www.avaya.com.

## Preventing Toll Fraud

Toll Fraud is the unauthorized use of your telecommunications system by an unauthorized party (for example, a person who is not a corporate employee, agent, subcontractor, or working on your company's behalf). Be aware that there is a risk of toll fraud associated with your system and that, if toll fraud occurs, it can result in substantial additional charges for your telecommunications services.

## Avaya Fraud Intervention

If you suspect that you are being victimized by toll fraud and you need technical assistance or support, call Technical Service Center’s Toll Fraud Intervention Hotline at **800 643-2353**.

## Providing Telecommunications Security

Telecommunications security of voice, data, and/or video communications is the prevention of any type of intrusion to, that is, either unauthorized or malicious access to or use of, your company’s telecommunications equipment by some party.

Your company’s “telecommunications equipment” includes both this Avaya product and any other voice/data/video equipment that could be accessed via this Avaya product (that is, “networked equipment”).

An “outside party” is anyone who is not a corporate employee, agent, subcontractor, or working on your company's behalf. A “malicious party” is anyone, including someone who may be otherwise authorized, who accesses your telecommunications equipment with either malicious or mischievous intent.

Such intrusions may be either to/through synchronous (time multiplexed and/or circuit-based) or asynchronous (character-, message-, or packet-based) equipment or interfaces for reasons of:

- Utilization (of capabilities special to the accessed equipment)
- Theft (such as, of intellectual property, financial assets, or toll-facility access)
- Eavesdropping (privacy invasions to humans)
- Mischief (troubling, but apparently innocuous, tampering)
- Harm (such as harmful tampering, data loss, or alteration, regardless of motive or intent).

Be aware that there may be a risk of unauthorized or malicious intrusions associated with your system and/or its networked equipment. Also realize that, if such an intrusion should occur, it could result in a variety of losses to your company, including, but not limited to, human/data privacy, intellectual property, material assets, financial resources, labor costs, and/or legal costs.

## Your Responsibility for Your Company's Telecommunications Security

The final responsibility for securing both this system and its networked equipment rests with you—an Avaya customer's system administrator, your telecommunications peers, and your managers. Base the fulfillment of your responsibility on acquired knowledge and resources from a variety of sources, including, but not limited to:

- Installation documents
- System administration documents
- Security documents
- Hardware-/software-based security tools
- Shared information between you and your peers
- Telecommunications security experts

To prevent intrusions to your telecommunications equipment, you and your peers should carefully program and configure your:

- Avaya provided telecommunications system and its interfaces
- Avaya provided software applications, as well as their underlying hardware/software platforms and interfaces
- Any other equipment networked to your Avaya products

## 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*.

**Part 68: Network Registration Number.** This equipment is registered with the FCC in accordance with Part 68 of the FCC Rules. See Appendix A, “Customer Support Information, “FCC Notification and Repair” section for registration numbers and more information regarding Part 68.

**Part 68: Answer-Supervision Signaling.** Allowing this equipment to be operated in a manner that does not provide proper answer-supervision signaling is in violation of Part 68 Rules. This equipment returns answer-supervision signals to the public switched network when:

- Answered by the called station
- Answered by the attendant
- Routed to a recorded announcement that can be administered by the CPE user

This equipment returns answer-supervision signals on all DID calls forwarded back to the public switched telephone network. Permissible exceptions are:

A call is unanswered

- A busy tone is received
- A reorder tone is received

## Industry Canada (IC) Interference Information

NOTICE: This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment.

Le Présent Appareil Nomérique n’émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A préscrites dans le reglement sur le brouillage radioélectrique édicté par le Industrie Canada.

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For more information about Avaya documents, refer to the section entitled “Related Documents” in “About This Guide” in *Feature Reference*.

## Support Telephone Number

In the continental U.S., Avaya provides a toll free customer helpline 24 hours a day. Call the Avaya Customer Care Center at **1 800 628-2888** or your Avaya authorized dealer if you need assistance when installing, programming, or using your system. Outside the continental U.S., contact your local Avaya authorized representative.

## Warranty

Avaya Inc. provides a limited warranty on this product. Refer to your sales agreement to establish the terms of the limited warranty. In addition, Avaya’s standard warranty language as well as information regarding support for this product, while under warranty, is available through the following website: www.avaya.com/support.

## Obtaining Products

To learn more about Avaya products and to order products, contact Avaya Direct, the direct-market organization of Avaya Business Communications Systems. Access their web site at avaya.com/direct or call 800 426-2455.

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## Release 3.0 Enhancements (May 2003)

Release 3.0 includes all Release 2.2 functionality plus the enhancements listed below.

- **Account Code Verification.** The System Manager can create up to 50 account codes using system programming to allow the system to verify the account code entered at an extension. When at least one account code exists for verification, the system verifies every account codes entered at extensions.

  **NOTE:**
  You can continue the operation of no verification of account codes by not creating an account code verification list.

- **Simultaneous Display of Caller Number and Caller Name.** Beginning in Release 3.0, when a customer subscribes to Caller ID service from the local telephone company, both calling number and name are simultaneously shown on display telephones if both are included in the subscription. Calling Party Number appears on line 1 and Calling Party Name appears on line 2 of the display on 4400-Series and MLX telephones. For Transtalk 9031/9040, Business Cordless 905, ETR and MLS telephones, you can see either Calling Party Name or Calling Party Number on the display, but not both simultaneously. You can program a button on the TransTalk 9031/9040, Business Cordless 905, ETR and MLX telephones to toggle between Calling Party Number and Calling Party Name. When the button's LED is lit, Calling Party Name and not Calling Party Number information appears and will continue to appear until you press the button again (the LED turns off).

  **NOTE:**
  Simultaneous display of Caller Number and Caller Name is not available for PRI lines with Automatic Number Identification (ANI) service; PRI (ANI) displays Caller Number only.

  Simultaneous display of Caller Number and Caller Name is available for analog loop-start lines connected to the following types of modules capable of supplying Caller ID ports:

  - 800 GS/LS-ID module
  - 408 GS/LS-ID-MLX module
  - 412 LS-ID-TDL module

  If you program the Calling Party Name button on 4400-Series and MLX telephones and activate the feature (the button's LED is lit), Calling Party Name appears on line 1 of the display and Calling Party Number appears on line 2 of the display. It is not necessary to program the button to see both Calling Party Number and Calling Party Name simultaneously on these telephones.

- **New Group Calling features.** Release 3.0 introduces the following new feature options for Group Calling:
  - **Calling Group Agent ID.** The Calling Group Agent ID feature allows multiple agents in a Call Center environment (using applications provided through a

Telephony Services Application Programming Interface (TSAPI)) to use the same extension. The feature allows a TSAPI application to report on the agent IDs, in addition to the extension thus allowing the application to determine which agent sharing the extension should be credited for work.

To activate the Agent ID feature, the System Manager defines a system-wide range of Agent IDs through System Programming. The factory setting for the range of Agent IDs is 10–9999. The Call Center agent activates the Agent ID feature by pressing a programmed Agent ID button or by pressing the Feature button or # and dialing 768. After pressing the programmed Agent ID button or dialing the feature code, the agent dials an agent ID followed by #. The agent can activate the Agent ID feature before or after the agent logs into the Calling Group.

The system checks the ID against the system-wide range and against IDs entered by other agents. When a valid ID is entered, the system sends the Agent ID to the TSAPI application along with other call handling information.

- **Group Ring.** Group Ring is a new Hunt Type for the Group Calling feature that allows a Calling Group call to ring at all available Calling Group member extensions simultaneously. The call rings at all available member extensions until the call is answered or until the caller hangs up. When a member answers the call, the call stops ringing at other member extensions and is connected to the member answering the call. Consequently, most calls are handled by the first member to answer the call. This method is used, for example, when all Calling Group members have equal responsibilities for handling calls and equal distribution is not required.
- **Group Calling Music-On-Hold.** Beginning with Release 3.0, a loop-start line/trunk jack can be assigned as Group Calling Music-On-Hold port. A music source or recorded announcement device can be connected to the assigned Group Calling Music-On-Hold port to provide the audible feedback for the following:

  Outside calls that were directed to a Calling Group that has a Delay Announcement. Group Calling Music-On-Hold is heard after the Delay Announcement has been played while the caller is waiting in queue.

  Outside calls transferred into a Group Calling queue. Group Calling Music-On-Hold is heard before and after the Delay Announcement (when available) plays.

  Outside calls to the Calling Group where the call was ringing at a Calling Group member, who refused the call (via time-out) and the call is back in queue.

  Calls that were answered by a Calling Group member and placed on either Hold, or Hold-for-Transfer/Conference hear music or recorded announcements provided by a source connected to the System Music-On-Hold port.

  If there is a Group Calling Music-On-Hold port assigned, but no System Music-On-Hold port assigned, the Group Calling Music-On-Hold source is used only for the above

listed items.

- **Conversion for previous releases**. Support for the conversion feature that allows a user to take a backed-up configuration of an earlier release of a MERLIN LEGEND system or MERLIN MAGIX system and have the file automatically mapped into a version that the new release can use. This functionality is provided as part of the WinSPM software. The user can select a backup file, select the desired product to CONVERT TO, and then select the Release number of that product. The user is prompted for all these inputs; choices for upgrades are based on the version of the backup file chosen to convert. In Release 3.0 of the MERLIN MAGIX system, there is an upgrade path from prior releases of MERLIN MAGIX and MERLIN LEGEND systems to MERLIN MAGIX Release 3.0.
- **WinSPM Release 8.** WinSPM Release 8.0 replaces WinSPM R7.0 for programming the MERLIN MAGIX systems. WinSPM R8.0 must be used to upgrade from a MERLIN MAGIX R1-R1.5/R2.0/R2.1/R2.2 to R3.0 system and to upgrade from a MERLIN LEGEND system to a MERLIN MAGIX R3.0 system. Just as with WinSPM R7.0, WinSPM R8.0 automatically drops the programmer into Standard SPM programming mode, if upgrading from a MERLIN LEGEND system to a MERLIN MAGIX system with supported modules that are not recognized. WinSPM R8.0 is compatible with Windows 98SE, ME, NT4.0, 2000, or XP operating systems. WinSPM supports all release of MERLIN LEGEND systems, but Quick Access (GUI) is available with MERLIN LEGEND Release 6.0 and later.

### Release 2.2 Enhancements (June 2002)

Release 2.2 includes all Release 2.1 functionality plus the enhancements listed below.

- **Call Screening.** Call Screening allows a user with a multiline telephone equipped with a speakerphone (excluding QCCs) to listen to a caller leaving a message in the user's voice messaging system mailbox. If the user chooses, he or she can answer the call while the message is being left.

  The System Manager must program Call Screening on a line button with LEDs by using Centralized Telephone Programming. The System Manager must also assign an authorization code to the extension (the code serves as the user's Call Screening password).

  When the user activates the feature, Call Screening begins once the voice mail system has answered the call. The user's speakerphone automatically goes on while the call is being screened, and the user is connected to the call in a listen-only mode. The user can hear both the outgoing announcement and the caller leaving a message. If the user decides to answer the call, the user presses the Call Screening button which disconnects the voice mail system from the call and allows the user to speak to the caller normally.

  Call Screening works with all voice mail systems.

- **Hot Dialpad.** The Hot Dialpad feature allows a user with a multiline telephone equipped with a speakerphone to make an inside or outside call without pressing the speakerphone button or lifting the handset before dialing the number. The telephone automatically goes off-hook on speakerphone when the number is dialed from the dialpad.

  The Idle Line Preference programmed for the user's telephone is used to choose the button. If a line button (ICOM, System Access, Shared System Access, Personal Line, or Pool) is preselected (the red LED next to the button is on) before the user makes the call, then the Hot Dialpad feature uses that button to initiate the call.

  The System Manager activates or deactivates the Hot Dialpad feature on a system-wide basis by using System Programming.
- **Headset Mode Display Enhancement.** Beginning with Release 2.2, when an extension is in Headset mode, information about incoming calls is shown on the telephone display when the call begins to ring at the extension. In previous releases, information about incoming calls is not shown on the telephone display until the user answers the call.
- **Loudspeaker Page with Group Page.** This feature enhancement allows up to two Loudspeaker Paging ports to be added to the Page All Group and to other Paging Groups. When a call is made to the Page Group, all members, along with the Loudspeaker Paging port are alerted.

- **Remote Call Forwarding with Simultaneous Internal Alert.** Remote Call Forwarding with Simultaneous Internal Alert allows a user to have internal and external calls sent to an external telephone, such as their cell phone, at the same time the call is received at their internal extension. If the user does not answer the call (at either telephone, including the external telephone's voice mail), the call is sent to the internal extension's programmed coverage arrangement for example to a voice messaging system.

  The Forwarding Delay option does not apply to Remote Call Forwarding with Simultaneous Internal Alert. As soon as the call arrives at the internal extension, it is sent out to the external telephone.

  There is new System Programming required for Remote Call Forwarding with Simultaneous Internal Alert to associate an extension with a pool. This pool must contain only PRI lines, T1 lines emulating TIE, or analog TIE lines. The pool cannot contain lines used for private networking.

  The feature is activated by using the Forwarding button/Feature code followed by a "#" followed by the outside number to alert. The pool access code should not be entered. An example would be #33#5551234#. Feature activation is denied if Remote Call Forwarding is not programmed for the extension, if the new system programming option is not assigned to the extension or if the user's extension does not have dial access to the pool assigned. The feature is mutually exclusive with both Forwarding and Remote Call Forwarding without Simultaneous Internal Alert.
- **Conversion for previous releases**. Support for the conversion feature that allows a user to take a backed-up configuration of an earlier release of a MERLIN LEGEND system or MERLIN MAGIX system and have the file automatically mapped into a version that the new release can use. This functionality is provided as part of the WinSPM software. The user can select a backup file, select the desired product to CONVERT TO, and then select the Release number of that product. The user is prompted for all these inputs; choices for upgrades are based on the version of the backup file chosen to convert. In Release 2.2 of the MERLIN MAGIX system, there is an upgrade path from prior releases of MERLIN MAGIX and MERLIN LEGEND systems to MERLIN MAGIX Release 2.2.
- **WinSPM Release 7.** WinSPM Release 7.0 replaces WinSPM R6.0 for programming the MERLIN MAGIX systems. WinSPM R7.0 must be used to upgrade from a MERLIN MAGIX R1-R1.5/R2.0/R2.1 to R2.2 system and to upgrade from a MERLIN LEGEND system to a MERLIN MAGIX R2.2 system. Just as with WinSPM R6.0, WinSPM R7.0 automatically drops the programmer into Standard SPM programming mode, if upgrading from a MERLIN LEGEND system to a MERLIN MAGIX system with supported modules that are not recognized. See the Upgrade Information section of this Offer Announcement for specific information regarding supported and non-supported MERLIN LEGEND system modules.

## Release 2.1 Enhancements (November 2001)

Release 2.1 includes all Release 2.0 functionality plus the enhancements listed below.

- Several features added and/or enhanced to compliment the MERLIN MAGIX Release 2.1 CRM (Customer Relationship Management) solution:
  - **Calling group agent in multiple calling groups.** A calling group agent can be a member of more than one calling group.
  - **Selective login.** A calling group agent can selectively log into individual calling groups or can log into all calling groups to which the agent has been assigned as a member.
  - **Selective logout.** A calling group agent can selectively log out of individual calling groups or can log out of all calling groups.
  - **Auxiliary Work Time.** When a calling group agent activates the Auxiliary Work Time feature, the calling group agent is unavailable to receive calling group calls. When the calling group agent activates or deactivates Auxiliary Work Time, the MERLIN MAGIX system maintains the agent's logged in or logged out status for calling groups.
  - **Selective Supervisor mode.** The new Selective Supervisor mode allows a calling group supervisor to see the login/logout status for all assigned group members and delay announcement units (DAUs) assigned to the calling group. The calling group supervisor can see which extensions that have selectively logged into an individual calling group. In this mode, the supervisor can log in or log out any extension assigned the group.
  - **Enhanced TSAPI events and services**. The MERLIN MAGIX system and the MERLIN MAGIX PBX Driver are enhanced to provide services providing more information about calling groups and extensions. This allows CRM applications to automatically configure their database with the support and overflow groups for an individual calling group. The application can also query the state of Do Not Disturb and Message Waiting lights at an extension allowing for a more accurate MERLIN MAGIX system view when the application is initiated. The restrictions that prevent the Deflect Call Service are removed.
- Release 2.1 also includes enhancements to address field-related issues:
  - **Caller ID display enhancement.** For customers who do not subscribe to Caller ID service or who do not have loop-start lines connected to modules that support caller ID service (800 GS/LS-ID, 408 GS/LS-ID-MLX, or 412 LS-ID-TDL modules), only the programmed label for the line appears on display telephones when a call is received on the line. The No Caller ID label does not appear on display telephones as on previous releases. This enhancement is system wide and requires no system programming.

- **100D/CSU/DSU maintenance enhancements**. The Data BERT tests for the 100DCD module are moved in the maintenance hierarchy to the same level as other data tests (for example, the Data Terminal test). When the system technician is not required to busy out the 100DCD module when running the data BERT test. The system technician can also select the direction of the test (either looped back to the MERLIN MAGIX system or going out to the network). Since 100DCD module does not provide LEDs for the Data Terminal Ready, Clear To Send, Request to Send, or Transmit and Receive data leads, new maintenance screen is available to help to diagnose problems. The new maintenance screen provides the on or off status for Data Terminal Ready, Clear to Send and Request to Send. The new maintenance screen also provides an indication of the speed of the data that is being transmitted.
- **Conversion for previous releases**. Support for the conversion feature that allows a user to take a backed-up configuration of an earlier release of a MERLIN LEGEND system or MERLIN MAGIX system and have the file automatically mapped into a version that the new release can use. This functionality is provided as part of the WinSPM software. The user can select a backup file, select the desired product to CONVERT TO, and then select the Release number of that product. The user is prompted for all these inputs; choices for upgrades are based on the version of the backup file chosen to convert. In Release 2.1 of the MERLIN MAGIX system, there is an upgrade path from prior releases of MERLIN MAGIX and MERLIN LEGEND systems to MERLIN MAGIX Release 2.1.
- **WinSPM Release 6.** New with the introduction of Release 6.0 for WinSPM is compatibility with Windows 2000 and, as well as a new telephone set label-making application. WinSPM Release 6.0 replaces WinSPM R5.0 for programming the MERLIN MAGIX systems. WinSPM R6.0 must be used to upgrade from a MERLIN MAGIX R1-R1.5/ R2.0 to R2.1 system and to upgrade from a MERLIN LEGEND system to a MERLIN MAGIX R2.1 system. WinSPM R6.0 has been enhanced to automatically drop the programmer into Standard SPM programming mode, if upgrading from a MERLIN LEGEND system to a MERLIN MAGIX system with supported modules that are not recognized. See the Upgrade Information section of this Offer Announcement for specific information regarding supported and non-supported MERLIN LEGEND system modules.

## Release 2.0 Enhancements (January 2001)

Release 2.0 includes all Release 1.5 functionality, plus the enhancements listed below.

- **Enhanced CSTA services**. CSTA services are enhanced to provide more flexibility for lines and features and to provide new services and events to help support a Customer Relationship Management application
- **More TSAPI events and services.** More TSAPI events and services are made available to Customer Relationship applications that aid the application in real-time reporting and routing
- **New current delay announcement unit (DAU) functionality**. The new current DAU functionality is available through the MERLIN Messaging System Release 2.5 and later. There is a new system programming option added to associate an announcement number with a particular delay announcement number.
- **Support for the TransTalk 9040.** The TransTalk 9040 is a digital wireless telephone with programmable buttons, on 412 LS-TDL and 024 TDL modules for Release 1.5 and later systems, and on 016 ETR modules for all releases.
- **Conversion for previous releases**. Support for the conversion feature that allows a user to take a backed-up configuration of an earlier release of a MERLIN LEGEND system or MERLIN MAGIX system and have the file automatically mapped into a version that the new release can use. This functionality is provided as part of the WinSPM software. The user can select a backup file, select the desired product to CONVERT TO, and then select the Release number of that product. The user is prompted for all these inputs; choices for upgrades are based on the version of the backup file chosen to convert. In Release 2.0 of the MERLIN MAGIX system, there is an upgrade path from prior releases of MERLIN MAGIX and MERLIN LEGEND systems to MERLIN MAGIX Release 2.0.
- **Display integration**. Display integration with MERLIN Messaging System Release 2.5 and later allows users with display telephones to view basic voice mail message information such as the number of New and Old Messages.
- **Send Caller ID information**. The MERLIN MAGIX system enhanced functionality allows Caller ID information to be forwarded to the MERLIN Messaging system for use with other messaging system features.

## Release 1.5 Enhancements (June 1999)

Release 1.5 includes all Release 1.0 functionality, plus the enhancements listed below.

- **100 DCD Module**
  The 100 DCD module provides a built-in channel service unit (CSU) and data service unit (DSU). Using this module eliminates the need to attach an external CSU/DSU, thereby allowing easier routing of calls. The 100 DCD module has the same signaling modes as the 100D and 100R INA modules, including the ability to use T1 or PRI configuration. As such, the new module counts toward the combined system total of three 100D, 100R INA, and 100 DCD modules. The 100 DCD module can fit into both metal and plastic carriers. Therefore, it can be added to an existing MERLIN LEGEND Communications System, where it functions like other 100D modules. The CSU/DSU part of the 100 DCD module, however, only functions with Release 1.5 or later of the MERLIN MAGIX system.
- **Programming Options for 100R INA and 100 DCD Modules**
  The 100R INA and 100 DCD modules use many of the same programming options as the 100D module. However, the 100R INA module has two new programming options: Activate/Deactivate the On-Board CSU and Channel Selection. The 100 DCD module has the same programming options, plus two additional ones: Activate/Deactivate the DSU and Programming Data Port Parameters.
- **Tests for the 100R INA and 100 DCD Modules**
  Three new Tests apply to both the 100R INA and 100 DCD modules:
  - Line Loopback Test
  - Payload Loopback Test
  - Bit Error Rate Test (BERT)

  Three other tests have been added specifically for the 100 DCD module:
  - Data-channel Loopback Test
  - Data Terminal Loopback Test
  - Data Port Local Loop Test
- **Automatic Daylight Savings Time Feature**
  This new feature allows the system to automatically set the system clock ahead or back one hour when Daylight Savings Time starts or ends. You can use the factory setting of “USA ADST,” or choose to customize the parameters of the feature. If you select “USA ADST,” the system time moves one hour ahead at 2:00 a.m. on the first Sunday in April and moves one hour back at 2:00 a.m. on the last Sunday in October.

- **Automatic Route Selection Feature Enhancement**
  Because of the changes in facilities and dial plans across the USA and Canada, Release 1.5 offers new enhancements to the Automatic Route Selection feature:
  - 10- and 11-digit dialing
  - 24 programmable tables
  - Wild card characters in 6-digit tables
  - Enhanced 911 service
- **Allowed Lists and Disallowed Lists Feature Enhancement**
  Two enhancements for Allowed/Disallowed Lists are supported in Release 1.5:
  - Maximum number of digits in Allowed Lists has been increased from 7 to 14.
  - One-to-one wild card character matching is supported.

  With the increase number of digits in Allowed Lists, you can allow Outward or Toll Restricted users to dial equal access codes to specific area codes and/or exchanges, for example, 1010xxx-1-xxx-xxx-xxxx.

  Now you can also use one-to-one wild card character matching in Allowed/Disallowed List entries. Press Hold to enter a wild card character. The character appears as a “p” on telephone displays and in the printed report.
- **WinSPM 4.0**
  WinSPM 4.0 software offers an automatic conversion program via the DOS-emulator version of SPM and flow control for the programming serial port.
- **Automatic Configuration of the MERLIN Messaging System**
  To ease the amount of effort during a system installation, MERLIN MAGIX Release 1.5 can automatically configure a voice mail system when Release 2.0 of the MERLIN Messaging System is housed in one of the system’s carriers. This capability takes the current data on the MERLIN MAGIX system and passes it to the MERLIN Messaging System, thereby allowing the System Administrator to configure the messaging system without having to manually enter a lot of data. Although primarily intended for installation, the automatic configuration can be used at any time.
- **Release 1.5 Upgrade Card**
  In Release 1.5, an Upgrade PCMCIA card is available which allows you to upgrade the entire system software or to upgrade only the firmware on the modules, thereby leaving the system programming intact.

- **Maintenance Enhancements**
  In addition to the new tests for the 100R INA and 100 DCD modules described earlier, Release 1.5 provides the following maintenance enhancements:
  - **Station Responding Test**. Beginning in Release 1.5, you can run a Station Responding Test to check the connection between an extension and the system. When you select this test from the maintenance screen, the system sends a request to the telephone at that extension (station), asking for the telephone's classmark. You can request the Station Responding Test locally or remotely. This test does not work for tip/ring devices because they do not have a classmark.
  - **Touch-Tone Receiver Test**. The Touch-Tone Receiver Test runs as an audit on the system. It is not a demand test but runs continuously in the background as a maintenance check. This test checks every touch-tone receiver (TTR) in the system modules, including those in the MERLIN Messaging System. If a TTR fails the test, a permanent error is logged and the TTR becomes maintenance busy. If 50% or more TTRs become maintenance busy at the same time, another permanent error is logged, and the system alarm LED lights. The Touch-Tone Receiver Test itself does not maintenance busy out 50% or more TTRs. When a maintenance-busy TTR is retested and passes the test, it is automatically placed back into service.
  - **Viewing Module Serial Numbers**. You can view the serial numbers of the following modules in the Maintenance screens:
    - Processor module
    - 024-TDL
    - 100 DCD
    - 100R INA
    - 412 LS-ID-TDL
    - MERLIN Messaging System
  - **E911 Service Error Codes**. Three new error codes have been added for E911 service.
    - E911 OVERFLOW (Error Code 0802)
    - E911 ADJUNCT OOS (Error Code 4001)
    - E911 NO OUTGOING SEIZURE (Error Code 8411)
- Support for the TransTalk 9031 and 9040 telephones, digital wireless telephones with programmable buttons, on 016 ETR modules.

## Design Benefits

**Modular components** allow easy, cost-effective growth in both size and function.

**Menu-driven system programming** maintains the customer's command of business operations.

**Built-in 1200/2400 bps modem** allows fast access to the system by customers, Avaya personnel, or authorized dealers from a remote location for system programming and maintenance.

**Flexible mode of operation** saves upgrade costs by allowing system configuration in one of three modes: Hybrid/PBX, Key, and Behind Switch.

**Connectivity to other systems** in the Behind Switch mode optimizes existing resources by allowing the system to work as part of another MERLIN MAGIX Integrated System, MERLIN LEGEND Communications System, System 25, System 75, System 85, DEFINITY 75/85, or other communications system. The control unit can connect to another system's control unit via either an off-premises telephone (OPT) line or an analog or digital tie trunk.

**Digital 2.048MHz bus** supplies a 64Kbps channel on each of the 216 time slots.

**68EC020 Motorola CPU** running at 16MHz with zero wait states provides fast system performance.

**Memory data retention** saves time by ensuring that system and extension programming information is retained for five (5) days, depending on the system configuration, in case of power failure or system shutdown.

**Integrated voice and data capabilities** allow users to talk while transmitting data at speeds up to 64Kbps.

**DS1 interface** can be configured for connection of either T1 or PRI for basic call control with the 4ESS or 5ESS PRI service specifications.

**Basic Rate interface (BRI) S/T protocol** supports premier 4400-Series and digital multiline (MLX) telephones with superior display capabilities and supports the ISDN terminal adapter Data Module for the connection of adjuncts.

## Environmental Specifications

The control unit requires a regulated environment and can be located in any room or closet that is temperature-controlled and clean. Do not mount the control unit where it will be exposed to direct sunlight.

In addition, the control unit should not be co-located with air conditioning or ventilation units, compressors, fans and blowers, heaters, arc welders, or other machinery that produces electrical interference.

The control unit is mounted on an Avaya pre-drilled backboard.

Once the control unit is installed, it is important to keep the control unit site clear of hazards, such as stacked paper or boxes, that block ventilation. Installing any machinery in the vicinity of the control unit should be avoided. If any pollution-producing work (such as sanding or spray painting) is to be done in the area, care should be taken to protect the unit.

The following table gives the environmental specifications for the control unit.

**Control Unit**

Fully loaded basic carrier

Weight: 45 lb. (20.4 kg)

Dimensions: 11 inches wide x 19 inches high x 11 inches deep
(27.9 cm x 48.3 cm x 27.9 cm)

Fully loaded 2-carrier system
(basic carrier plus 1 expansion carrier)

Weight: 90 lb. (40.8 kg)

Dimensions: 22.5 inches wide x 19 inches high x 11 inches deep
(57.2 cm x 48.3 cm x 27.9 cm)

Fully loaded 3-carrier system
(basic carrier plus 2 expansion carriers)

Weight: 135 lb. (61.2 kg)

Dimensions: 34 inches wide x 19 inches high x 11 inches deep
(86.4 cm x 48.3 cm x 27.9 cm)

**Mean Time between Failures**

(mean/average time the system is expected to operate before any type of failure occurs)

| MTBF without telephones | | | | | |
|---|---|---|---|---|---|
| Construct: 10 lines X 20 extensions | | | Construct: 20 lines X 50 extensions | | |
| MERLIN LEGEND using MLX modules | MERLIN MAGIX using TDL modules | % MERLIN MAGIX Improved over MERLIN LEGEND | MERLIN LEGEND using MLX modules | MERLIN MAGIX using TDL modules | % MERLIN MAGIX Improved over MERLIN LEGEND |
| 11.86 Years | 17.42 Years | 47% | 13.92 Years | 16.31 Years | 17% |

| MTBF with telephones | | | | | |
|---|---|---|---|---|---|
| Construct: 10 lines X 20 extensions | | | Construct: 20 lines X 50 extensions | | |
| MERLIN LEGEND using MLX 10D tele-phones | MERLIN MAGIX using 4412D+ tele-phones | % MERLIN MAGIX Improved over MERLIN LEGEND | MERLIN LEGEND using MLX 10D tele-phones | MERLIN MAGIX using 4412D+ tele-phones | % MERLIN MAGIX Improved over MERLIN LEGEND |
| 3.53 Years | 4.14 Years | 17% | 1.88 Years | 1.91 Years | 2% |

**Backboard Mounting Hardware Requirements**

This refers to the types of wall construction to which the backboard will be attached.

| Type of material | Mounting Hardware |
|---|---|
| Wood surface | Wood screws |
| Concrete surface, brick, cinder block | Masonry anchors |
| Plaster, plasterboard | Toggle bolts |
| Sheet-metal surface | Sheet-metal screws |

Hardware has a combined pullout force of 650 lb. (294.8 kg). When mounting to sheet-metal walls, attach to structural members.

**Location**

Within 5 feet (1.5 m) of dedicated AC power outlet (1 plug per carrier).

Within 1000 cable feet (304.8 m) of telephones.

**Heat Dissipation**

Fully loaded basic carrier 500 Btu/hr (35 cal/sec)

Fully loaded 2-carrier system 1000 Btu/hr (70 cal/sec)
(basic carrier with one expansion carrier)

Fully loaded 3-carrier system 1500 Btu/hr (105 cal/sec)
(basic carrier plus two expansion carriers)

**Power Requirements**

| | | |
|---|---|---|
| Basic carrier 117 VAC | 60 Hz -15% to 10% | 5.4A |
| 2-carrier 117 VAC | 60 Hz -15% to 10% | 10.8A |
| 3-carrier 117 VAC | 60 Hz -15% to 10% | 16.2A |

**Temperature/Humidity Range**

40°–104°F (4°–40°C)

20%-80% relative humidity

**Ventilation Clearances**

1 inch (2.5 cm) on right and left sides

**Radio Frequency Interference, Tolerance**

1.0 V/m

**⚠CAUTION:**

■ For the control unit, do not use an AC outlet that is controlled

by a wall switch or some other switch.

- Use an approved ground (AC receptacle for 3-prong plug).
- Do not install the control unit outdoors.
- Do not place the control unit near extreme heat (furnaces, heaters, attics, or direct sunlight).
- Do not expose the control unit to devices that generate electrical interference (such as arc welders or motors).
- Do not place anything on top of carriers.
- Do not install the control unit under any device that may drip fluid, such as an air conditioner.
- Do not expose the control unit to moisture, corrosive gases, dust, chemicals, spray paint, or similar materials.

## Power and Grounding

Proper power and grounding are essential for correct and safe functioning of the system.

### Power Specifications

The system control unit plugs into a 117-VAC outlet. To avoid accidental disconnection of the system, this outlet should not be controlled by a wall switch.

Each carrier unit requires its own power supply. Each power supply requires a maximum current of 5.4 amps. Therefore, if expansion carrier units are added to the system, extra AC outlets may be needed.

### Grounding Requirements

Proper grounding of the installation site protects the system against the following:

- Lightning
- Power surges
- Power crosses on outside lines/trunks
- Electrostatic discharge (ESD)

The local telephone company is responsible for providing protection of outside lines/trunks at the entrance to the site. The protection should consist of the following:

- Carbon blocks or gas discharge tubes connected to an approved ground
- Adequate bonding of the outside line/trunk protector ground and the power company ground

**⚠WARNING:**

*An improper ground can result in equipment failures and service outages. Verify that the AC power uses an approved ground for its primary ground, that all voltage-limiting devices are grounded to an approved ground, and that the ground is one of the approved grounds listed below.*

The following is a list of approved grounds, starting with the most preferred:

- Building steel.
- Acceptable water pipe; must be a metal, underground water pipe at least 1/2-inch (30.4 cm) in diameter, and in direct contact with the earth for at least 10 feet (3 m).
- It must be electrically continuous so that the protector ground is connected. (Check for insulated joints, plastic pipe, and plastic water meters that might interrupt electrical continuity.)
- A metallic underground water pipe must be supplemented by the metal frame of the building, a concrete-encased ground, or a ground ring.
- Other local metal underground systems or local underground structures such as tanks and piping systems.
- Rod and pipe electrodes, a 5/8-inch (1.6-cm) solid rod or 3/4-inch (1.9-cm) conduit or pipe electrode driven to a minimum depth of 8 feet (244 cm).
- Plate electrode, a minimum of 2 square feet (61 square cm) of metallic surface exposed to the exterior soil.
- Concrete-encased ground, which must be an electrode, consisting of one of the following:
  - At least 20 feet (6.1 m) of one or more steel reinforcing rods, each being at least 1/2-inch (1.27 cm) in diameter.
  - 20 feet (6.1 m) of bare copper conductor not smaller than #4 AWG, encased in 2 inches (5 cm) of concrete. This electrode must be located within and near the bottom of a concrete foundation or roofing that is in direct contact with the earth.
  - Ground ring, consisting of at least 20 feet (6.1 m) of bare copper conductor not smaller than #2 AWG, encircling the building. The ground ring must be in direct contact with the earth and buried at least 2.5 feet (77 cm) below the earth's surface.

**⚠WARNING:**

*Do not use a metal underground gas piping system. This is a safety risk.*

For most power surges, the following standard grounding requirements provide adequate lightning and surge protection:

- Properly wired/grounded/bonded outside line protectors.
- Properly wired/grounded AC outlet.
- Properly grounded single-point ground bar.
- Properly wired connection between single-point ground and power supplies.

**Additional Power Surge Protection**

The 491D1 power supply has built-in AC line protection. This built-in protection handles almost all situations.

Occasionally, additional protection may be needed if the customer is located in a heavy lightning area. The following products are available:

- The 145D protector provides AC surge protection for the entire system, including the power supply module. One unit

provides protection for six outlets.

- The 146C protector provides Central Office (CO) line surge protection. One unit covers four CO lines.
- The 146D protector provides surge protection for two tip/ring, MLS, or ETR telephones.
- The 146E protector provides surge protection for two 4400-Series or MLX telephones.
- The 146F protector provides Central Office (CO) line surge protection. One unit covers 25 CO lines.

Complete installation instructions are provided with the surge protectors.

## Control Unit Interfaces

| Interface | Applications | Signaling Channel Rate | Audio/ Data Rate |
|---|---|---|---|
| BRI S/T[1] | Control unit to 4400-Series and MLX telephones | 16Kbps (D)<br>64Kbps (B) | |
| | ISDN Terminal Adapter | 64Kbps (B) and (D) | |
| DS1 | Control unit to the following services:<br><br>**T1**<br>Emulated tie trunk<br>Emulated DID<br>Emulated loop-start<br>Emulated ground-start<br><br>**PRI services**<br>ACCUNET® switched digital service<br>MEGACOM® WATS<br>MEGACOM 800<br>Software Defined Network (SDN)<br>MultiQuest® 900 number services<br>Connectivity to 5ESS Generic 6/7/8/FTS 2000<br>Multiple incoming calls to directory number<br>Call-by-Call Service Selection<br>Password handling for FTS 2000<br>SID-ANI as Calling Party Number | 64Kbps | |
| RS-232-C | Control unit to PC connected to system programming port | 2400bps or 1200bps | 2400bps or 1200bps |
| | Control unit to Avaya model 572 printer, PC with CAS, or CAT connected to RS-232-C port | 1200bps | 1200bps |
| Tip/Ring | Control unit to single-line telephone, modem, fax, OPT, or voice mail system | 40 KHz | 300–3400 Hz |
| ETR | Control unit to ETR telephone or MLS telephone | 40 KHz | 300–3400 Hz |

1 Call handling derived from CCITT recommendation Q.931.

## Network Interface Requirements

| Line/Trunk Type | Facility Interface Code | Network Interface |
|---|---|---|
| Loop-start | 02LS2 | RJ11C, RJ14C, RJ21X |
| Ground-start | 02G S2 | RJ11C, RJ14C, RJ21X |
| DID | 02RV2-T | RJ11C, RJ14C, RJ21X |
| OPT | OL13C | RJ11C, RJ14C |
| Tie | TL31M | RJ2GX |
| T1 | 04DU9-B<br>04DU9-C | RJ48C/X |
| PRI | 04DU9-BN<br>(D4 with AMI) | RJ48C/X |
| | 04DU9-DN<br>(D4 with B8ZS) | |
| | 04DU9-IKN<br>(ESF with AMI) | |
| | 04DU9-ISN<br>(ESF and B8ZS) | |
| BRI | 021S5 | RJ49 |

## FCC Registration

| Registration Number | REN | Type |
|---|---|---|
| AS593M-72682-MF-E | 1.5A | Multi-function |
| AS593M-72914-KF-E | 1.5A | Key only |
| AS5USA-65646-PF-E | 1.5A | Hybrid/PBX |

## DOC Registration

| DOC Certification No. | CSA Certification No. | Load No. |
|---|---|---|
| 230-4095A | LR-56260 | 6 |

## Hardware and Software Capacities

You can configure the system as a stand-alone unit or as part of a private network. Maximum system capacities are as follows:

- Up to 108 simultaneous two-party conversations

  **NOTE:**
  If more than 108 conversations are in progress at the same time, blocking can occur.

- Up to 80 line/trunk jacks, including loop-start, ground-start, DID, tie, and DSI.
- Up to 400 extension endpoints that support a combination of the following:
  - Up to 272 physical extension jacks for telephones and adjuncts.
  - Up to 200 logical digital data ports (through ISDN terminal adapters connected to jacks on the MLX module) providing RS-232 connections to data terminals and personal computers.
- System call-handling capability of 3828 hundred call seconds per hour (ccs/hr).
- Up to three 100 DS1, 100R INA, or 100 DCD modules, maximum two per carrier; the 24 channels on each 100 DS1, 100 DCD, or 100R INA module count toward the 80 line/trunk capacity.
- Up to five 800 NI-BRI modules, maximum two per carrier.
- One CTI link when operating in Hybrid/PBX mode.

The system has a total capacity of 352 physical jacks (80 outside lines/trunks plus 272 extensions); however, each TDL and MLX module extension jack supports two logical endpoints (extension devices that can operate simultaneously and independently of each other). For example, an MLX telephone with a Multi-Function Module (MFM) plugs into one extension jack, but the jack supports both the telephone and the equipment (for example, a fax or an analog modem) connected to the MFM.

Similarly, although a 100 DS1, 100 DCD, or 100R INA module has only one jack, each can serve up to 24 endpoints (emulated lines/trunks or PRI lines/trunks). Thus, you can configure the system to connect up to 80 lines/trunks and 400 extension endpoints—a total of 480 endpoints.

The next table, **Hardware and Software Capacities**, lists the hardware and software capacities of the system. Constraining Factors appear with a checkmark (✓) and are explained at the end of the table.

## Hardware and Software Capacities

| | Limit | Constraining Factor |
|---|---|---|
| **100 DS1 Module (maximum 2 per carrier)** | 3 | |
| **100R INA Module (maximum 2 per carrier)** | 3 | |
| **100 DCD Module (maximum 2 per carrier)** | 3 | |
| **800 NI-BRI Module (maximum 3 per carrier)** | 5 | |
| **Account Codes** | | |
| Characters per code | 16 | |
| **Allowed/Disallowed Lists** | | |
| Number of lists | 8 | |
| Entries per list | 10 | |
| Digits per Allowed List entry | 14[1] | |
| Digits per Disallowed List entry | 7 | |
| **Authorization Codes** | 400 | |
| Digits per code | 11 | |
| **Automatic Route Selection (ARS)** | | |
| Number of programmable ARS tables | 24[2] | |
| Subpatterns per table | 2 | |
| Routes per subpattern | 6 | |
| Entries per table | 100 | |
| Entries across all tables | 1600 | |
| Default tables | 5[3] | |
| **Callback Calls in Queue** | 64 | |
| **Calling Groups** | | |
| Number of groups | 32 | |
| Members per group | | ✓ |
| Local extensions only | 20 | |
| Non-local extensions only | 1 | |
| Total agents and supervisors | 200 | |
| Total supervisors | 8 | |
| Groups per member | 1 | |
| Primary delay announcements per system | 200 | ✓ |
| Secondary delay announcements per system | 32 | ✓ |
| Primary delay announcements per group | 10 | |
| Secondary delay announcements per group | 1 | |
| Groups per delay announcement | 32 | |
| External alerts per group | 1 | |
| Coverage groups per group | 1 | |
| Priority Queuing | | |
| Support Group | 31 | home |
| Home Group | 1 | support |
| **Carriers** | 3 | |
| Line/trunk and extension module slots per basic carrier | 5 | ✓ |
| Line/trunk and extension module slots per expansion carrier | 6 | |
| Maximum slots available for line/trunk and extension modules | 17 | |
| **Coverage Groups** | | |
| Number of groups | 30 | |
| Senders per group | 400 | ✓ |
| Groups per sender | 1 | |
| Receiver buttons per group | 8 | |
| Groups per QCC receiver | 30 | |

**Hardware and Software Capacities—***Continued*

| | Limit | Constraining Factor |
|---|---|---|
| **CTI Link** | 1 | ✓ |
| **Data Hunt Groups** | | |
| Number of groups | 32 | |
| Members per group | 20 | |
| Groups per member | 1 | |
| **Direct Inward Dialing** | | |
| Number of blocks | 2 | |
| Number of trunks | 80 | |
| **Directories** | | |
| System Directory | 1 | |
| Listings | 130 | |
| Extension Directory | 1 | |
| Listings | 200 | |
| Personal Directory (4424LD+ and MLX-20L only) | 48 | |
| Listings | 50 | |
| **Endpoints (devices)** | 400 | |
| **Extensions** | | |
| Total physical jacks | 200 | |
| Total endpoints | 400 | |
| **Fax Machines with Message Waiting** | 16 | ✓ |
| **Lines/Trunks** | 80 | |
| **Message Waiting Lamp Messages** | 1499 | |
| **Night Service** | | |
| Groups | 8 | |
| Members per group | 400 | |
| Calling groups per group | 1 | |
| Groups per member | 8 | |
| Emergency Allowed List entries | 10 | |
| **Park codes (number of codes)** | 8 | |
| **Personal Lines** | 64 | |
| **Pool Buttons** | 64 | |
| **Ports (not simultaneously)** | | |
| Voice Announce to Busy extensions | 200 | |
| Voice Messaging interface (VMI) | 24 | ✓ |
| ISDN Terminal Adapter | 200 | |
| Paging | 3 | |
| Primary delay announcements | 200 | ✓ |
| Secondary delay announcements | 32 | ✓ |
| **Remote Access** | | |
| Number of barrier codes | 16 | |
| Digits per code, systemwide | 4–11 | |
| **Service Observing Groups** | | |
| Number of groups | 16 | |
| Observers per group | 1 | ✓ |
| Members per group | 200 | ✓ |
| **Shared System Access Buttons** | | |
| Number of buttons per principal extension | 27 | |

**Hardware and Software Capacities—***Continued*

| | Limit | Constraining Factor |
|---|---|---|
| **Speed Dial** | | |
| Personal Speed Dial | | ✓ |
| Entries per telephone | 24 | |
| Entries per system | 1200 | |
| Digits per entry | 28 | |
| System Speed Dial | | |
| Entries per system | 130 | |
| Digits per entry | 40 | |
| **System Operating Consoles** | | |
| Direct Line Consoles (DLCs) | | ✓ |
| 4424D+ or 4424LD+ | 8 | |
| MLX-20L or MLX-28D | 8 | |
| Queued Call Consoles (QCCs) | | ✓ |
| 4424LD+ or MLX-20L | 4 | |
| Combination of DLCs plus QCCs | 8 | |
| DSSs | 16 | |
| Number of consoles per module | | |
| 412 LS-ID-TDL, 408 GS/LS-ID-MLX, or 008 MLX | 2 | |
| 024 TDL or 016 MLX | 4 | |
| **System Programming Equipment** | | ✓ |
| 4424LD+ or MLX-20L | 1 | |
| RS-232 jack for PC with WinSPM | 1 | |
| Modem (built-in processor module) | 1 | |
| **Telephones (not simultaneously)** | | |
| 4424LD+ or MLX-20L | 48 | ✓ |
| All other 4400-Series telephones | 200 | |
| All other MLX telephones | | ✓ |
| (with/without ISDN terminal adapter/MFM) | 200 | ✓ |
| Single-line | 200 | ✓ |
| ETR/MLS | 200 | ✓ |
| TransTalk 9031/9040 | 200 | ✓ |
| Business Cordless 905 | 200 | ✓ |
| Power-failure transfer | 20 | ✓ |
| **Two-Party Conversations** | 108 | ✓ |
| **Voice Messaging Systems** | 24 | |

1 In Release 1.0 systems, an Allowed List entry may have only 7 digits.
2 In Release 1.0 systems, there are 16 programmable ARS tables.
3 In Release 1.0 systems, there are 4 default ARS tables.

## Constraining Factors

This section describes the constraining factors that limit the capabilities supplied in the previous table.

### Calling Groups

*Members of groups*. QCCs cannot be members of calling groups because the QCC position is set up as a system operator and has its own queue, which is different from the group's queue.

*Members per group*. The maximum number of local extensions in a calling group is 20. The maximum number of non-local extensions in a calling group is 1. A calling group cannot contain both local and non-local extensions.

*Primary and secondary delay announcements per system*. Up to 10 primary and one secondary announcement device can be designated for each calling group. Each announcement device decreases the 200 tip/ring station capacity.

**Carriers**

The first slot of the basic carrier is used for the processor module, with a maximum of 5 line/extension module slots.

**Coverage Groups**

*Senders per group*. QCCs cannot be senders because they do not have coverage available and use Position-Busy instead.

**CTI Link**

One CTI link is supported in Hybrid/PBX mode only.

**Fax Machines with Message Waiting**

The system can support more than 16 fax machines, but those in excess of 16 cannot use fax message waiting indication.

**Ports (not simultaneously)**

*Voice Messaging Interface*. Although the system software supports up to 24 VMI ports, all VMI ports must be in the same calling group, and the maximum number of extensions in a calling group is 20.

**Service Observing Groups**

A Service Observer station must be a 4406D+, 4412D+, 4424D+, 4424LD+, or MLX telephone (except QCC or CTI link). A Service Observing group member station can be any telephone except a QCC or CTI link. The maximum number of members per Service Observing group is equal to the maximum number of extensions in the system.

**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.

**Speed Dial**

*Personal Speed Dial*. Single-line and 5- or 10-button telephones.

**System Operator Consoles**

*DLCs*. Two consoles are allowed for each 412 LS-ID-TDL, 408 MLX, or 008 MLX module, and four consoles are allowed for each 024 TDL or 016 MLX module. A maximum of eight DLC consoles are allowed per system. Up to two DSSs can be attached to a 4400-Series or MLX operator console.

*QCCs*. Two consoles are allowed for each 412 LS-ID-TDL, 408 MLX, or 008 MLX module, and four consoles are allowed for each 024 TDL or 016 MLX module. A maximum of four QCC consoles are allowed per system.

**System Programming Equipment**

Remote access overrides onsite programming except during backup or restore.

**Telephones (not simultaneously)**

*4424LD+*. RAM limit and the total includes the 4424LD+ telephone used for system programming. Beginning with Release 1.0 of MERLIN MAGIX, all features of the MERLIN LEGEND Release 7 are offered, in addition to the ability to support the TDL sets.

*All other 4400-Series telephones*. RAM limit.

*MLX-20L*. RAM limit and the total includes the MLX-20L telephone used for system programming.

*All other MLX telephones*. RAM limit. An MFM and an ISDN terminal adapter cannot be connected to the same telephone (including the MLX-20L) at the same time.

*Single-line*. Software dial plan limit.

*Power failure transfer.* 1 for each 4 LS or GS line/trunk jacks.

*ETR/MLS.* RAM limit.

*TransTalk 9031/9040.* RAM limit.

*Business Cordless 905.* RAM limit.

**Two-Party Conversations**

216 time slots.

## Ordering Codes

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| **MODELS** | | | |
| **MERLIN MAGIX Integrated System** | | | |
| MERLIN MAGIX R3.0 V6.0 PCMCIA Upgrade Card. Used to upgrade a MERLIN MAGIX CKE5 R1.0–R2.2 Processor and MERLIN LEGEND CKE4 & CKE5 Processor to MERLIN MAGIX R3.0 | 700253495 | 700253495 | 11MX23A-1 |
| --OR | | | |
| R3.0 software download from the Avaya e-Flash tools web site | | | |
| MERLIN MAGIX R3.0 V7.0 CKE5 Processor for MAGIX (no clamshell) & used for new system sales only. Kit includes: Back-up/Restore PCMCIA Card. | 700253461 | | KX-PR2-3V7-0 |
| PCMCIA Back-up/Restore Card w/label for how to insert | 61475 | 108588468 | 10A4 |
| R3.0 CKE5 Processor w/faceplate | | 700253479 | 617X33 |
| MERLIN MAGIX R3.0 V7.0 CKE5 Processor for plastic carrier (clamshell included). Used for upgrades from MERLIN LEGEND R1-R6.1 systems that do not already have a CKE4 or CKE5 processor. Kit includes: Back-up/Restore PCMCIA Card | 700253628 | | KX-PR2-3V7-0L |
| PCMCIA Back-up/Restore Card w/label for how to insert | 61475 | 108588468 | 10A4 |
| R3.0 CKE5 Processor w/clamshell | | 700253636 | 617X33-ML |
| Basic Carrier Kit includes: Backup/Restore PCMCIA Card | 6180-CAR | 108588542 | Kit: KX-CU-BASIC |
| Basic Carrier | | 108588542 | 403L |
| 110/220V Power Unit | | 108508938 | 491D1 |
| Power Supply Safety Instructions | | 108576182 | CIB 3191 |
| Kit of Parts, includes: | | 848521167 | |
| MLX QCC Button Assign. Card | | 106587611 | CIB 3147 Issue 2 |
| 4424LD+ QCC Button Assign. Card | | 108493214 | CIB 3201 Issue 1 |
| FCC Documentation | | 107492787 | CIB 3134 |
| Blue Station Cord Labels (1-80) | | 846646248 | |
| Green Line Cord Labels (1-80) | | 846646263 | |
| 4424LD+ Overlay | | 848410130 | |
| MLX Set Overlay | | 848407961 | |
| Jack Number Labels (1-200) | | 848407995 | |
| WinSPM R8 & MAGIX R3.0 Customer Documentation on CD-ROM[1] and the System Manager's Quick Reference Guide (on paper) | 700253438 | 700253438 | |
| WinSPM R8 CD-ROM | | 700253537 | |
| Customer documentation R3.0 CD-ROM | | 700253446 | 555-730-800 |
| System Manager's Quick Reference (paper) | | 700253453 | 555-730-119 |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| Expansion Carrier Kit (metal), includes: | 61890/A | 108588567 | Kit: KX-CU-EXP |
| Power Unit | | 108508938 | 491D1 |
| Power Supply Safety Instructions | | 108576182 | CIB 3191 |
| Expansion Carrier | | 108268061 | 403M |
| Blue Station Cord Labels (81-200) | | 846646255 | |
| Expansion Carrier Kit (plastic), includes: | 61490/A | 108588567 | Kit: KX-CU-EXP |
| Expansion Wall Mount with Top/Front Cover | | 107007122 | 403H |
| Power Supply | | 107793275 | 391C1 |
| Top/Front Cover (Choose One) | | 106905953 | 18A |
| **MERLIN MAGIX 1.0i** | | | |
| (110/220) Power Supply | | 108508938 | 491D1 |
| Metal Basic Carrier Dkit | 6180-CAR | 108588542 | |
| Metal Expansion Carrier Kit | 61890/A | 108588567 | |
| R1.0 Processor DKit | 6180-PR1 | 108588518 | |
| R1.5 Processor Dkit for metal carrier | 6180-P15 | 108719147 | |
| R2.0 Processor Dkit for metal carrier | 6180-PR2 | 108871055 | |
| **MERLIN LEGEND Equipment** | | | |
| R7.0 V12 Minor Software Fixes | 6140-PR7 | 108923509 | 617R33-2-ML |
| R7.0 V12 Minor Software Fixes & Firmware fixes (including TTRs) | 6141-SW7<br>6141-SW7P | 108923475 | 11ML70-D5 |
| R7.0 V11 Processor Dkit | 6140-PR7 | 108867979 | 617R33-1-ML |
| R7.0 V9 Processor Dkit | 6140-PR7 | 108574567 | |
| R7.0 V10 Upgrade Card | 6141-SW7<br>6141-SW7P | 108515073 | |
| R7.0 V11 Upgrade Card | | | |
| B3 | 6141-SW7 | 108725441 | |
| C4 | 6141-SW7P | 108834326 | |
| Plastic Expansion Carrier Kit | 61490 | 108574427 | K-CU-EXP-1 |
| R7 Documentation - Paper | | 108370255 | |
| R7.0 Documentation and WinSPM | 6140-DWS | 108642752 | |
| R3 CD | 6140-DWSP | | |
| R7.0 Documentation and WinSPM R4 CD | | 108733627 | |
| 110/220V Power Supply | 61477/A | 107793275 | 391C1 |
| 008 ATL Module | 61485/A | 105351092 | |
| **Inactive MERLIN LEGEND Equipment** | | | |
| R1 Documentation - Paper | 61812/A | 108522277 | |
| R1.5 Documentation - Paper | 61812/A | 108736950 | |
| R7.0 V9 Processor Dkit (only available by GEM until CKE4's are used up; then switch to CKE5) | | 108515032 | 6140-PR7A |
| **ADDITIONAL CONTROL UNIT COMPONENTS** | | | |
| 2 MB Blank PCMCIA Backup/Restore Card | 61475/A | 107779878 | 10A2 |
| 4 MB Blank PCMCIA Backup/Restore Card | 61501 | 107245243 | 10A1 |
| Line/Trunk and Extension Modules | | | |
| 008 MLX | 61886/A | 108333725 | 617C21 |
| 008 OPT | 61879/A | 108318460 | 617E28 |
| 016 T/R | 61807/A | 108514159 | 617E34 |
| | | 108737065 | 617E34A |
| | | 108514183 | 617F34 (fix TTRs) |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| 016 ETR | 61851/A | 108514498 | 617B56 (fix TTRs) |
| 016 MLX | 61811/A | 108333667 | 617A54 |
| 024 TDL | 61804/A | 108514522<br>108388968 | 617B58<br>CYJ1 |
| 100D Module | 61891/A | 108458530<br>108725458 | 617N15<br>617N15A |
| 100R INA | 6158-001/A | 108515107 | 617B59 |
| 100 DCD | 61880 | 108513656 | 617S15 |
| 400 E&M (tie trunk) | 61892/A | 108333634 | 617D14 |
| 408 GS/LS-ID-MLX | 61805/A | 108829383 | 617F29 (firmware for E911 Adjunct) |
| 412 LS-ID-TDL | 61803/A | 108514423<br>108424292 | 617B52 (fix T/R plug-in)<br>CYF2 |
| 800 NI-BRI | 61810/A | 108318502 | 617B35 |
| 800 DID | 61888/A | 108318486 | 617G20 |
| 800 GS/LS-ID | 61802/A | 108357617<br>108829375 | 617B31<br>617C31 (firmware for E911) |
| Backboard for MERLIN MAGIX & PARTNER ACS | 61813 | 848556148 | |
| Empty clamshell to enable modules to be compatible with MERLIN LEGEND | 61899/A | 108541343 | |
| B25A DE cable for TDL modules (15 ft. in length) | 2720-01P | 846301000 | |
| B25A DE cable for TDL modules (20 ft. in length) | 2720-01R | 846301000 | |
| Connecting block for TDL modules (Prewired 66 type block) | 2750-D02 | 101238178 | |
| Cinch Super MOD 25, 25 Jack Adapter | | 2992400125 | |
| **Inactive Control Unit Components** | | | |
| MERLIN MAGIX R2.2 V7.0 CKE5 Processor for MAGIX (no clamshell) & used for new system sales only. Kit includes: Back-up/Restore PCMCIA Card. | 6180-P22 | 700228562 | |
| MERLIN MAGIX R2.1 V9.0 CKE5 Processor for MAGIX (no clamshell) & used for new system sales only. Kit includes: Back-up/Restore PCMCIA Card. | 6180-P21 | 700182025 | |
| MERLIN MAGIX R2.0 V9.0 CKE5 Processor for MAGIX (no clamshell) & used for new system sales only. Kit includes: Back-up/Restore PCMCIA Card. | 6180-PR2 | 108871005 | |
| R2.2 CKE5 Processor w/faceplate | | 700228570 | 617W33 |
| R2.1 CKE5 Processor w/faceplate | | 700181878 | 617U34 |
| R1.5 CKE5 Processor w/faceplate | | 108719170 | 617T33 |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| MERLIN MAGIX R2.2 V7.0 CKE5 Processor for plastic carrier (clamshell included). Used for upgrades from MERLIN LEGEND R1-R6.1 systems that do not already have a CKE4 or CKE5 processor. Kit includes: Back-up/Restore PCMCIA Card | 6140-P22 | 700228596 | |
| MERLIN MAGIX R2.0 V9.0 CKE5 Processor for plastic carrier (clamshell included). Used for upgrades from MERLIN LEGEND R1-R6.1 systems that do not already have a CKE4 or CKE5 processor. Kit includes: Back-up/Restore PCMCIA Card | 6140-P21 | 700182033 | |
| MERLIN MAGIX R2.0 V9.0 CKE5 Processor for plastic carrier (clamshell included). Used for upgrades from MERLIN LEGEND R1-R6.1 systems that do not already have a CKE4 or CKE5 processor. Kit includes: Back-up/Restore PCMCIA Card | 6140-PR2 | 108871013 | |
| R2.2 CKE5 Processor w/clamshell | | 700228588 | 617W33-ML |
| R2.1 CKE5 Processor w/clamshell | | 700181886 | 617W34-ML |
| R1.5 CKE5 Processor w/clamshell | | 108719196 | 617T33-ML |
| MERLIN MAGIX R2.2 V6.0 PCMCIA Upgrade Card. Used to upgrade a MERLIN MAGIX CKE5 R1.0–R2.2 Processor and MERLIN LEGEND CKE4 & CKE5 Processor to MERLIN MAGIX R2.2 | 6181-S22 | 700228604 | 11MX22A-1 |
| MERLIN MAGIX R2.1 V6.0 PCMCIA Upgrade Card. Used to upgrade a MERLIN MAGIX CKE5 R1.0–R2.0 Processor and MERLIN LEGEND CKE4 & CKE5 Processor to MERLIN MAGIX R2.1 | 6181-S21 | 700181902 | 11MX21A-1 |
| MERLIN MAGIX R2.0 PCMCIA Upgrade Card. Used to upgrade a MERLIN MAGIX CKE5 R1.0–R1.5 Processor and MERLIN LEGEND CKE4 & CKE5 Processor to MERLIN MAGIX R2.0 | 6181-SW2 | 108871021 | 11MX20-A1 |
| MERLIN MAGIX R1.5 V6.1 PCMCIA Upgrade Card | 6181-S15<br>6181-S15P | 108923483 | |
| MERLIN MAGIX R1.5 PCMCIA Upgrade Card | 6181-S15<br>6181-S15P | 108719204 | |
| MERLIN MAGIX R1.0 PCMCIA Upgrade Card | 6181-S15<br>6181-S15P | 108514589 | |
| 016 T/R | 61807/A | 108514159<br>108737065 | 617E34<br>617E34A |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| 016 ETR | 61851/A | 108359589 | B17A56 |
| 100R INA | 6158-001/A | 108515099 | 617A59 |
| 408 GS/LS-ID-MLX | 61805/A | 108333741 | 617E29 |
| 412 LS-ID-TDL | 61803/A | 108306036 | 617A52 (fix TTRs) |
| Backboard for MERLIN LEGEND & Partner ACS | 94958 | 847007523 | |
| Documentation & WinSPM R7 Dkit (CD ROM) | 6180-D22 | 700228521 | |
| Documentation & WinSPM R6 Dkit (CD ROM) | 6180-D21 | 700182041 | |
| Documentation & WinSPM R5 Dkit (CD ROM) | 6180-D20 | 108885260 | |
| Documentation & WinSPM R4 Dkit (CD ROM) | 6180-DWSP | 108719121 | |
| Documentation & WinSPM R3 Dkit (CD ROM) | 6180-DWS | 108588559 | |
| WinSPM R4 CD-ROM | | 408124311 | |
| WinSPM R5 | K-CDR7-SPM5 | 108885252 | 6140-DWS 6140-DWSP |
| **Telephones** | | | |
| **4400-Series Telephones** | | | |
| 4400D | | | |
| English (black) | 4400-B0D | 108198995 | |
| English (white) | 4400-W0D | 108198987 | |
| 4406D+ | | | |
| English (black) | 4400-B06 | 108199027 | |
| English (white) | 4400-W06 | 108199019 | |
| 4412D+ | | | |
| English (black) | 4400-B12 | 108199050 | |
| English (white) | 4400-W12 | 108199043 | |
| 4424D+ | | | |
| English (black) | 4400-B24 | 108199084 | |
| English (white) | 4400-W24 | 108199076 | |
| 4424LD+ | | | |
| English (black) | 4400-BLD | 108428580 | |
| English (white) | 4400-WLD | 108429598 | |
| **Inactive 4400-Series Telephones Discontinued as of 7/1/2002** | | | |
| 4400 - recommend 4400D English above | | | |
| English (black) | 4400-B0N | 108198961 | |
| English (white) | 4400-W0N | 108198953 | |
| ICON (black) | 4400-IBN | 108643016 | |
| ICON (white) | 4400-IWN | 108643008 | |
| 4400D - recommend 4400D English above | | | |
| ICON (black) | 4400-IDB | 108643032 | |
| ICON (white) | 4400-IDW | 108643024 | |
| 4406D+ - recommend 4406D+ English above | | | |
| ICON (black) | 4400-IB6 | 108643057 | |
| ICON (white) | 4400-IW6 | 108643040 | |
| 4412D+ - recommend 4412D+ English above | | | |
| ICON (black) | 4400-C2B | 108643073 | |
| ICON (white) | 4400-C2W | 108643065 | |
| 4424D+ - recommend 4424D+ English above | | | |
| ICON (black) | 4400-C4B | 108643065 | |
| ICON (white) | 4400-C4W | 108643081 | |
| 4424LD+ - recommend 4424LD+ English above | | | |
| ICON (black) | 4400-CLB | 108643115 | |
| ICON (white) | 4400-CLW | 108643107 | |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| **MLX Telephones** | | | |
| MLX-16DP | | | |
| English (black) | 3156-07B | 108047242 | |
| MLX-20L | | | |
| English (black) | 3156-05B | 108339623 | |
| English (white) | 108047374 | 108047374 | |
| MLX-28D | | | |
| English (black) | 3156-04B | 108339763 | |
| **Inactive MLX Telephones** | | | |
| MLX-5 | | | |
| English (black) | 3156-0BB | 107894719 | 7712D05D-003 |
| English (white) | 3156-0BW | 107894727 | 7712D05D-264 |
| French (black) | | 107926834 | 7712D05D(29)-003 |
| French (white) | | 107926842 | 7712D05D(29)-264 |
| Spanish (black) | | 107926859 | 7712D05D(22)-003 |
| Spanish (white) | | 107926867 | 7712D05D(22)-264 |
| Hungarian (black) | | 107926875 | 7712D05D(30)-003 |
| Hungarian (white) | | 107926883 | 7712D05D(30)-264 |
| MLX-5D | | | |
| English (black) | 3156-0DB | 107894735 | 7712D06D-003 |
| English (white) | 3156-0DW | 107894743 | 7712D06D-264 |
| French (black) | | 107926891 | 7712D06D(29)-003 |
| French (white) | | 107926909 | 7712D06D(29)-264 |
| Spanish (black) | | 107926917 | 7712D06D(22)-003 |
| Spanish (white) | | 107926925 | 7712D06D(22)-264 |
| Hungarian (black) | | 107926933 | 7712D06D(30)-003 |
| Hungarian (white) | | 107926941 | 7712D06D(30)-264 |
| MLX-10 Recommend MLX-16DP black, English | | | |
| English (black) | 3156-02B | 107108722 | 7712D01D-003 |
| English (white) | 3156-02W | 107108748 | 7712D01D-264 |
| Eastern Europe (black) | 3156-EE2 | 107108805 | |
| Eastern Europe (white) | 3156-EE2 | 107108813 | |
| French (black) | 3156-F2I | 107108797 | 7712D01D(29)-003 |
| French (white) | 3156-F2I | 107108789 | 7712D01D(29)-264 |
| Spanish (black) | 3156-S2I | 107108755 | 7712D01D(22)-003 |
| Spanish (white) | 3156-S2I | 107108771 | 7712D01D(22)-264 |
| MLX-10D Recommend MLX-16DP black, English | | | |
| English (black) | 3156-03B | 107108870 | 7712D02D-003 |
| English (white) | 3156-03W | 107108888 | 7712D02D-264 |
| Eastern Europe (black) | 3156-EE3 | 107108847 | |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| Eastern Europe (white) | 3156-EE3 | 107108854 | |
| French (black) | 3156-F3I | 107108938 | 7712D02D(29)-003 |
| French (white) | 3156-F3I | 107108920 | 7712D02D(29)-264 |
| Spanish (black) | 3156-S3I | 107108904 | 7712D02D(22)-003 |
| Spanish (white) | 3156-S3I | 107108912 | 7712D02D(22)-264 |
| MLX-10DP Recommend MLX-16DP black. | | | |
| English (black) | 3156-06B | 108214073 | |
| English (white) | 3156-06W | 108214081 | |
| MLX-16DP Recommend MLX-16DP black, English | | | |
| English (white) | 3156-07W | 108047259 | |
| Spanish (black) | 3156-S7I | 106987423 | 7715D01D(22)-003 |
| Spanish (white) | 3156-S7I | 106987456 | 7715D01D(22)-264 |
| French (black) | 3156-F7I | 106987472 | 7715D01D(29)-003 |
| French (white) | 3156-F7I | 106987498 | 7715D01D(29)-264 |
| East. Europe (black) | 3156-S7I | 106987506 | 7715D01D(22)-003 |
| East. Europe (white) | 3156-S7I | 106987514 | 7715D01D(22)-264 |
| MLX-20L Recommend MLX-20L black. | | | |
| English (white) | 3156-05W | 108339631 | |
| Eastern Europe (black) | 3156-EE5 | 107109035 | |
| Eastern Europe (white) | 3156-EE5 | 107109050 | |
| French (black) | 3156-F5I | 107109027 | 7713D01D(29)-003 |
| French (white) | 3156-F5I | 107109019 | 7713D01D(29)-264 |
| Spanish (black) | 3156-S5I | 107108995 | 7713D01D(22)-003 |
| Spanish (white) | 3156-S5I | 107109001 | 7713D01D(22)-264 |
| MLX-28D Recommend MLX-28D black. | | | |
| English (white) | 3156-04W | 108339789 | |
| Eastern Europe (black) | 3156-EE4 | 107115867 | |
| Eastern Europe (white) | 3156-EE4 | 107115875 | |
| French (black) | 3156-F4I | 107115842 | 7713D02D(29)-003 |
| French (white) | 3156-F4I | 107115859 | 7713D02D(29)-264 |
| Spanish (black) | 3156-S4I | 106613599 | 7713D02D(22)-003 |
| Spanish (white) | 3156-S4I | 106613607 | 7713D02D(22)-264 |
| **Inactive MLX Secure Telephones** | | | |
| MLX-10DS | | | |
| English (black) | 3156-03S | 107185076 | 7712DO2D1-003 |
| MLX-28DS | | | |
| English (black) | 3156-04S | 107185050 | 7713D02D1-003 |
| MLX-20LS | | | |
| English (black) | 3156-05S | 107185068 | 7713D01D1-003 |
| Fiber Interface Card with Ring Generator | 61393 | 406981217 | 93030.2 FIB INT PRN |
| Chassis with Power | | | |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| Supply, Blank Cover | 6139-SFS | 406981225 | 93030.8C MINI |
| 800 LS Card | 61394 | 406981241 | 903030.3 2 WIRE PRN |
| **ETR (PARTNER) Telephones** | | | |
| ETR-6 (black) | 3158-04B/A | 108883018 | 7311H12A-003 |
| ETR-6 (white) | 3158-04W/A | 108883034 | 7311H12A-264 |
| ETR-6 (gray) | 107854804 | 107854804 | 7311H12A-323 |
| ETR-18 (white) | 3158-85W | 107884561 | 7311H13A-264 |
| ETR-34D (black) | 3158-08B/A | 107305054 | 7515H04A-003 |
| ETR-34D (white) | 3158-08W/A | 107305062 | 7515H04A-264 |
| ETR-34D (gray) | 3158-08G/A | 107320749 | 7515H04A-323 |
| **MLS Telephones (Inactive)** | | | |
| MLS-6 (black) | 3151-04B/A | 107092165 | |
| MLS-6 (white) | 3151-04W/A | 107092181 | |
| MLS-12 (black) | 3151-05B/A | 107092116 | |
| MLS-12 (white) | 3151-05W/A | 107092124 | |
| MLS-12D (black) | 3151-06B/A | 107092157 | |
| MLS-12D (white) | 3151-06W/A | 107092132 | |
| MLS-18D (black) | 3151-07B/A | 107092215 | |
| MLS-18D (white) | 3151-07W/A | 107092207 | |
| MLS-34D (black) | 3151-08B/A | 106927551 | |
| MLS-34D (white) | 3151-08W/A | 106927569 | |
| **Single-Line Telephones** | | | |
| 2500 YMGJ (message waiting, recall, touch-tone, desk) | | | |
| Misty cream | 105414098 | 105414098 | 2500YMGJ-215 |
| 2500 YMGK | | | |
| Misty cream | 105480560 | 105480560 | 2500YMGM-215 |
| 2500 MMGK (recall, touch-tone, desk) | | | |
| Misty cream | 105414122 | 105414122 | 2500MMGK-215 |
| 6210 | | | |
| Avaya white | 3198-10W/A | 105772 | |
| 6220 | | | |
| Deep gray | 3198-20G/A | 105766 | |
| Avaya white | 3198-20W/A | 105767 | |
| **Inactive Single-Line Telephones** | | | |
| 2500 YMGK (message waiting, recall, touch-tone, desk) | | | |
| Black | | 105480578 | 2500YMGK-003 |
| Misty cream | | 105480560 | 2500YMGK-215 |
| 2500 YMGL | 3101-KFD/A | | |
| Black | | 107005043 | 2500YMGL-003 |
| Misty cream | | 107005050 | 2500YMGL-215 |
| 2500 YMGM | | | |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| Black | | 107732422 | 2500YMGM-003 |
| Misty cream | | 107732430 | 2500YMGM-215 |
| 2500 MMGL | 3101-KBD/A | | |
| Black | | 107023236 | 2500MMGL-003 |
| Misty cream | | 107023277 | 2500MMGL-215 |
| 2500 MMGK (recall, touch-tone, desk) | | | |
| Black | | 105414130 | 2500MMGK-003 |
| Misty cream | | 105414122 | 2500MMGK-215 |
| 2500 MMGJ (touch-tone, desk) | | | |
| Black | | 105414155 | 2500MMGJ-003 |
| Misty cream | | 105414148 | 2500MMGJ-215 |
| 2554 MMGJ (touch-tone, wall) | | | |
| Black | | 105480081 | 2554MMGJ-003 |
| Misty cream | | 105480032 | 2554MMGJ-215 |
| 500 MM (rotary, desk) | | | |
| Black | | 103870234 | 500MM-03 |
| Ivory | | 103870226 | 500MM-50 |
| Beige | | 103870267 | 500MM-60 |
| 554 BMPA (rotary, wall) | | | |
| Black | | 103823498 | 554BMPA-3 |
| Ivory | | 103823506 | 554BMPA-50 |
| 6210 | | | |
| Deep gray | 3198-10G/A | | |
| Avaya white | 3198-10W/A | | |
| 6211 | | | |
| Deep gray | 3198-1UG/A | 700060452 | 6211A01A-323 |
| White | 3198-1UW/A | 700060486 | 6211A01A-264 |
| 6219 | | | |
| Deep gray | 3198-9UG/A | 700058662 | 6219A01A-323 |
| White | 3198-9UW/A | 700058654 | 6219A01A-264 |
| 6221 | | | |
| Deep gray | 3198-2UG/A | 700058688 | 6221A01A-323 |
| White | 3198-2UW/A | 700058670 | 6221A01A-264 |
| 8110M Analog Voice | 3193-001 | | |
| Black | | 107535841 | 8110A01D-003 811 |
| Kit (4 black sets) | | 107538399 | 8110A01D-003 |
| White | | 107535858 | 8110A01D-264 811 |
| Kit (4 white sets) | | 107538401 | 8110A01D-264 |
| 8102M Analog Voice | 3192-001 | | |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| Black | | 107538357 | 8102A01C-003 810 |
| Kit (4 black sets) | | 107538373 | 8102A01C-003 |
| White | | 107538365 | 8102A01C-264 810 |
| Kit (4 white sets) | | 107538381 | 8102A01C-264 |
| 8101 Analog Voice | 3192-101 | | |
| Black | | 107730475 | 8101A01-B003 |
| White | | 107730483 | 8101A01-B264 |
| **Wireless Telephones** | | | |
| TransTalk™ 9000 | | | |
| Handset Model9030 (single- or dual-zone carrier assembly) | 3204-CR3 | 107955122 | |
| TransTalk™ 9040 | | | |
| Wireless Telephone Set, Black | 3204-09B | 108535998 | |
| Dual Radio Module (DRM-E) for PARTNER and MERLIN (ATL/ETR) | 3204-DRE | / 108487158 | |
| Dual Radio Module (DRM-D) for MERLIN MAGIX and DEFINITY TDL/DCP) | 3204-DRD | / 108487174 | |
| Battery, Extended Use, Textured Black | 3279-EBY | 108586553 | |
| Battery, Nickel Metal Hydride, Textured Black | 3279-3BP | 108272485 | |
| Carrying clip, plastic for slim battery | 3204-BCS | 848172847 | |
| Carrying clip, plastic for extended life battery | 3204-BCX | 848441390 | |
| Pocket phone holster | 3204-HOL | 848350930 | |
| Supra Mobility Headset single ear (adaptor required) | 3275-SUP | 407713718 | |
| Supra Radium Headset (behind the ear (adaptor required) | 3275-RAD | 407720739 | |
| Headset Adaptor cord | 3275-DWS | 408121085 | |
| TransTalk Outdoor Enclosure | 3204-OUT | 407954296 | |
| Accessories for 9030/9031 | | | |
| Headset for 9031 | 3122-042 | | |
| Supra N/C (includes adapter cord, 3204-ADP, 848047965 | 3275-042 | 407713718 | |
| Radium (behind-the-ear) | 3275-043 | 407720739 | |
| Headset for 9031 (includes adapter cord, 3204-ADP, 848047965 | | | |
| Headset for 9030 | 3122-042 | | |
| Headpiece | | 407713718 | |
| QD Cord | | 407714401 | |
| Headset for 9030 (packaged with an adapter) | 3122-043 | | |
| Headpiece | | 407720739 | |
| QD Cord | | 407714401 | |
| Headset holster, black | 32090 | 848026092 | |
| Battery pack, black | 32045 | 107733107 | |
| Carrying Case (Holster) | 32043 | 847877487 | |
| Pocket Phone replaceable antenna | 32044 | 847713450 | |
| Pocket Phone carrying clip | 32046 | 847773140 | |
| Battery charger | 32047 | 107733099 | |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| Extended Life Battery | 32049 | 107733115 | |
| **Inactive Cordless/Wireless Telephones** | | | |
| BC 905 Business Cordless | 3206-02B | 1081660 59 | |
| Battery | 32091 | 407759729 | |
| Belt Clip | 3206-CLP | 847903614 | |
| TransTalk™ 9031 | | | |
| Wireless Telephone Set (dual zone system product multiple-user version) | | | |
| Black | 3204-MDZ | 108313073Z | |
| TransTalk™ Pocket Phone | | | |
| Model 9031 (single-zone standalone product single-user version) | | | |
| Black | 3204-07B | 108046525 | |
| TransTalk™ 9031 | | | |
| Wireless Telephone Set (dual zone stand-alone product single-user version) | | | |
| Black | 3204-SDZ | 108313073 | |
| TransTalk™ Pocket Phone | | | |
| Model 9031 (single-zone system product multiple-user version) | | | |
| Black | 3204-W7B | 108046525 | |
| Wireless Telephone (stand-alone product shipped w/ power pack) | | | |
| Black | | | |
| Model 5405 | | 106440472 | CS6300U30 A-2292 |
| Model 5455 | | 106440464 | CS6300U29 A-2292 |
| MDC 9000 Business Cordless Telephone Set | | | |
| White | | 107304982 | 7311H11B-264 |
| Black | | 107304974 | 7311H11B-003 |
| Battery Pack for MDW 9010 | | | |
| White | | 106760812 | |
| Black | | 106760804 | |
| **Special-Purpose Telephones** | | | |
| Touch-tone Outdoor WL | 8800-031 | 407380922 | 2526 |
| Manual Dial Outdoor WL | 8800-002 | 407380955 | 526 |
| Auto-Dial Outdoor WL | 8800-003 | 407380930 | 526 AMACADL |
| Explosive Atmosphere Telephones 2520B | | | |
| Touch-tone, Wall | 3129-ETW | 103873030 | 2520B-3 |
| **Inactive Special-Purpose Telephones** | | | |
| 520B | | | |
| Rotary, Desk | | 103873048 | 520B-3 |
| Rotary Outdoor WL | | 105727444 | 526 |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| **Direct Station Selectors** | | | |
| DSS 4450 (4400-Series telephones) | | | |
| English (black) | 4400-B50 | 108199696 | 200A-003 |
| English (white) | 4400-W50 | 108199407 | 200A-264 |
| Auxiliary Power Supply for DSS 4450 when connected to 4424D+ | 4499-PWR | 108596412 | 1219A |
| DSS (MLX telephones) | | | |
| English (black) | 3156-DCB | 108047713 | |
| **Inactive Direct Station Selectors** | | | |
| English (white) | 3156-DCW | 108047721 | Recommend DSS black |
| ICON (black) | 4400-IB5 | 108662917 | |
| ICON (white) | 4400-IW5 | 108662925 | |
| English (white) - Will discontinue as of 7/1/2002. Recommend black DSS. | | | |
| Spanish (black) | 3156-SDI | 107013294 | 604B1(22)-003 |
| Spanish (white) | 3156-SDI | 107013302 | 604B1(22)-264 |
| **Applications** | | | |
| **Call Accounting System (CAS)** | | | |
| Avaya eCAS for Windows | | | |
| Base 50-Extension Software | 1202-E50 | 700203607 | |
| 50-Extension eCAS Upgrade System Software | 1202-EUI | 700203615 | |
| Multi-Site eCAS Upgrade System Software | 1202-EU3 | 700203631 | |
| 200-station | 1202-653/A | | |
| Custom Rate Table (mandatory) | 12055 | | |
| **Inactive Applications** | | | |
| WinSPM R3 (customer version, floppy disk) | 6181-SPM | 408124303 | |
| **Inactive CAS** | | | |
| CAS for Windows | | | |
| 50-station | 1202-651/A | | |
| 100-station | 1202-652/A | | |
| 200-station | 1202-653/A | | |
| Custom Rate Table (mandatory) | 12055 | | |
| HACKERTRACKER for Windows | 1202-660/A | | |
| Supplemental Initialization Support | 12057 | | |
| Parallel Printer (optional) | | | |
| dot matrix | 69769 | | |
| Parallel Printer Cable | 69641 | 846943298 | |
| Serial Printer | 4200-572 | | |
| Parallel Printer | 4200-570 | | |
| Hacker/Tracker | 12014 | 406806166 | PCCB6201 |
| Fax/Modem SW | | 407046317 | 92193WP |
| INTUITY CAS 50 Station | 1201-052/A | | |
| INTUITY CAS HACKERTRACKER | 1201-054/A | | |
| INTUITY CAS 50 Station Upgrade | 1201-053/A | | |
| INTUITY CAS Custom Rates | 12054 | | |
| CAS Plus V3.1.1 | | | |
| Bundle, Model 300 (does not include a printer) | | | |
| Custom Rate Table | | | |
| CAS Plus V3 Bundle w/ 80-col. Parallel Printer | | | |
| CAS Plus V3 Bundle | | | |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| w/ 132-col. Parallel Printer | | | |
| CAS Plus V3 Software | | 406362244 | |
| Rate Table[2] | | | |
| CAS Plus V3 Update (SW) | | 406158444 | 3300EA51 |
| CAS Plus Upgrade | | 406025916 | 3300KA2U |
| CAS V3 Hacker Tracker (MS-DOS) | | 406774513 | 3399EA |
| IS-III UNIX CAS 250 | 1201-U14A | 407243187 | ISIII CAS 250 |
| UNIX CAS Rate Tables | | 406140764 | 3.5 SW ATT MTS |
| IS-III UNIX CAS Upgrade 500 (250-500) | 1201-U15A | 406898254 | UN/CAS UPGR |
| IS CAS Upgrade to NANP | 1201-U16A | | IS CAS NANP |
| M/L&S – 25 Upgrade NANP | 1201-U17A | | |
| IS II CAS Upgrade to IS III | 1201-U18A | | |
| UNIX HackerTracker | 1201-U13A | 406898270 | SFTW-ISIII |
| **Inactive Call Accounting Terminal (CAT)** | | | |
| CAT BASIC/B (LEGEND) | 3600-010/A | | |
| Printer | | 406716464 | PRNTR-ML182-R2 |
| Processor | | 406669769 | PROCR-36001-C1 |
| CAT + LEGEND/H | 3600-024/A | | |
| Printer | | 406716464 | PRNTR-ML182-R2 |
| Processor | | 406478818 | PROCR-37000-C6-HQU |
| CAT + LEGEND/B | 3600-023/A | | |
| Printer | | 406716464 | PRNTR-ML182-R2 |
| Processor | | 406478800 | PROCR-37000-C6-BQU |
| CAT Basic Rate Table[<5>] (Update Chip) | 36014A | 406669739 | |
| CAT/B Rate Table [<5>] (Update) | 36023A | 406478792 | |
| CAT/H Rate Table [<5>] (Update) | 36024A | 406478784 | |
| MERLIN LEGEND Reporter | | | |
| Single Site, 50 stations | 1201-011 | | |
| Single Site, 200 stations | 1201-012 | | |
| **Inactive PassageWay Direct Connect (R2)** | **8302-500** | **407214782** | |
| PassageWay 4-Wire for PC-Console | 8302-720 | | |
| PassageWay 2-Wire for PC-Console | 8302-721 | | |
| Power Kit | 8302-901 | | |
| 9M to 25F Cable | 8302-903 | | |
| TAPI service provider | 8302-112 | | |
| **Inactive Telephony Services Netware for MERLIN MAGIX** | **8320-500/A** | | |
| PassageWay Telephony Services R2.21D for Netware (core/clients) | | 407556364 | |
| PassageWay Telephony Services R2.21D for Netware (250+user license) | | 407465558 | |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| PassageWay Telephony Services Netware Driver for MERLIN LEGEND | | 108027368 | |
| EICON ISDN Board for MERLIN LEGEND PassageWay Telephony Services | | 407556364 | |
| **MERLIN Messaging System Release 3.0** | | | |
| MERLIN Messaging R2.5 Module | 700262066 | | 617D49 |
| 2-port license and backup PC card (additional 4 ports of DAS or 6 ports of DAS only) | 7107-531 | 108491358 | |
| 4-port license and backup PC card (additional 4 ports of DAS or 8 ports of DAS only) | 7107-532 | 108491366 | |
| 6-port license and backup PC card (additional 4 ports of DAS or 10 ports of DAS only) | 7107-533 | 108491374 | |
| 8-port license and backup PC card (additional 12 ports of DAS or 12 ports of DAS only) | 7107-534 | 108491382 | |
| 10-port license and backup PC card (additional 2 ports of DAS or 12 ports of DAS only) | 7107-535 | 108679531 | |
| 12-port license and backup PC card (12 ports voice mail or 12 ports of DAS only) | 7107-536 | 108679549 | |
| DAS only port license and backup PC card | 7107-537 | 108850454 | |
| Customer doc. kit (40 end-user guides; Sys. Admin. Quick Ref. CD-ROM; and Safety doc. | 700263510 | | 585-323-200 |
| **Inactive MERLIN Messaging System** | | | |
| MERLIN Messaging R2.5 Module | 7107-R25 | 108514332 | 617C49 |
| Customer doc. kit (40 end-user guides; Sys. Admin. Quick Ref. CD-ROM; and Safety doc. | 7107-510 | 108679770 | 585-323-200 |
| 2-port MERLIN Messaging System | 7107-502 | 108541467 | 385A |
| Circuit board w/faceplate for metal housing | | 108333642 | 617A49 |
| 2-port PC card (backup and remote access card) | | 108491358 | 12H1 |
| Customer doc. kit (20 end-user guides; Sys. Admin. Quick Ref. CD-ROM; and Safety doc. | | 108594813 | 585-323-200 |
| 4-port MERLIN Messaging System | 7107-504 | 108541475 | 385B |
| Circuit board w/faceplate for metal housing | | 108333642 | 617A49 |
| 4-port PC card (4-port license, backup and remote access card) | | 108491366 | 12H2 |
| Customer doc. kit (20 end-user guides; Sys. Admin. Quick Ref.; CD-ROM; and Safety doc.) | | 108594813 | 585-323-200 |
| User guide kit (20 end-user guides; Safety Doc.; and PC Card Installation Sheet) | | 108594763 | 585-323-204 |
| 6-port MERLIN Messaging System | 7107-506 | 108541483 | 385C |
| Circuit board w/faceplate for metal housing | | 108333642 | 617A49 |
| 6-port PC card (6-port license, backup and remote access card) | | 108491374 | 12H3 |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| Customer doc. kit (20 end-user guides; Sys. Admin. Quick Ref.; CD-ROM; and Safety doc.) | | 108594813 | 585-323-200 |
| User guide kit (20 end-user guides; Safety Doc.; and PC Card Installation Sheet) | | 108594763 | 585-323-204 |
| 4-port License and Backup | 7107-503 | 108501594 | 382E |
| User guide kit (20 end-user guides; Safety Doc.; and PC Card Installation Sheet) | | 108594763 | 585-323-204 |
| 4-port PC card (4-port license, backup and remote access card) | | 108491366 | 12H2 |
| 6-port License and Backup | 7107-505 | 108501602 | 382F |
| User guide kit (20 end-user guides; Safety Doc.; and PC Card Installation Sheet) | | 108594763 | 585-323-204 |
| 6-port PC card (6-port license, backup and remote access card) | | 108491374 | 12H3 |
| Repair Parts | | | |
| Circuit board w/faceplate for metal housing | | 108333642 | 617A49 |
| 2-port PC card | | 108491358 | 12H1 |
| 4-port PC card | | 108491366 | 12H2 |
| 6-port PC card | | 108491374 | 12H3 |
| MERLIN Messaging Administration GUI and Documentation CD-ROM | 7107-510 | 108873894 | |
| MERLIN Messaging Module | 7107-R25 | 108514316 | |
| Delay Announcement Service (DAS) Only Card | 7107-537 | 108850454 | |
| **Inactive Octel 100 Voice Messaging System** | | | |
| 4-port voice messaging system[3] | 7052-004<br>106217 | | |
| 4 port dialog4 | | 407909993 | |
| Monitor – color | | 407900547 | |
| 6-port voice messaging system[<5>] | 7052-006<br>106218 | | |
| 6 port dialog4 | | 407910009 | |
| Monitor – color | | 407900547 | |
| 8-port voice messaging system[<5>] | 7052-008<br>106219 | | |
| 8 port dialog4 | | 407910017 | |
| Monitor – color | | 407900547 | |
| 12-port voice messaging system[<5>] | 7052-012<br>106220 | | |
| 12 port dialog4 | | 407910025 | |
| Monitor – color | | 407900547 | |
| 4-port voice/2-port fax messaging system[<5>] | 7052-204<br>106221 | | |
| 4 port dialog4, 2 port fax | | 407910033 | |
| Monitor – color | | 407900547 | |
| 6-port voice/2-port fax messaging system[<5>] | 7052-206<br>106222 | | |
| 6 port dialog4, 2 port fax | | 407910066 | |
| Monitor – color | | 407900547 | |
| 8-port voice/2-port fax messaging system[<5>] | 7052-208<br>106223 | | |
| 8 port dialog4, 2 port fax | | 407910082 | |
| Monitor – color | | 407900547 | |
| 12-port voice/2-port fax messaging system[<5>] | 7052-212<br>106224 | | |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| 12 port dialog4, 2 port fax | | 407910108 | |
| Monitor – color | | 407900547 | |
| 4-port voice/4-port fax messaging system[5] | 7052-404 106225 | | |
| 4 port dialog4, 4 port fax | | 407910058 | |
| Monitor – color | | 407900547 | |
| 6-port voice/4-port fax messaging system[5] | 7052-406 106226 | | |
| 6 port dialog4, 4 port fax | | 407910074 | |
| Monitor – color | | 407900547 | |
| 8-port voice/4-port fax messaging system[5] | 7052-408 106227 | | |
| 8 port dialog4, 4 port fax | | 407910090 | |
| Monitor – color | | 407900547 | |
| 4- to 6-port voice upgrade | 7052-606U 106234 | | |
| Dialog4 board | | 407901412 | |
| 4 to 6 Port License/Sentinal Disk Utility | | 407920792 | |
| 6- to 8-port voice upgrade | 7052-608U 106235 | | |
| Dialog4 board | | 407901412 | |
| 6 to 8 Port License/Sentinal Disk Utility | | 407920800 | |
| 8- to 12-port voice upgrade | 7052-612U 106236 | | |
| Dialog4 board | | 407901412 | |
| 8 to 12 Port License/Sentinal Disk Utility | | 407920818 | |
| 12- to 16-port voice upgrade | 7052-616U 106237 | | |
| Dialog4 board | | 407901412 | |
| 12 to 16 Port License/Sentinal Disk Utility | | 407920826 | |
| 2-port fax upgrade | 7052-200U 106238 | | |
| 2 port Brooktrout fax board | | 407914423 | |
| Port License/Sentinal Disk Utility | | 407914498 | |
| 2- to 4-port voice upgrade | 7052-400U 106239 | | |
| 2 port Brooktrout fax board | | 407914423 | |
| Port License/Sentinal Disk Utility | | 407923770 | |
| Visual Mailbox Starter Kit | 7052-700 407914445 | 407914415 | |
| Visual Mailbox Software License | | | |
| 10 Seats | 7052-710U 106240 | 407914431 | |
| 25 Seats | 7052-725U 106241 | 407914449 | |
| 50 Seats | 7052-750U 106242 | 407914464 | |
| 100 Seats | 7052-752U 106243 | 407914472 | |
| 250 Seats | 7052-755U 106244 | 407914480 | |
| **Intuity Voice System** | | | |
| 4-port | 7055-004 | | |
| 6-port | 7055-006 | | |
| 8-port | 7055-008 | | |
| 10-port | 7055-010 | | |
| 12-port | 7055-012 | | |
| Administration | 6128-KBD | 406891556 | |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| Controller Assembly with PC Administration | 6128-PCA | 406891564 | |
| **DISCONTINUED** | | | |
| Controller Assembly with Display Keyboard | | | |
| Display Assembly with Wall-Mounting | | 406891572 | |
| Call Alert Software | | 406891721 | |
| Bracket Assembly, ATL Telephone Mounting | | 406891937 | |
| Fixture, Display Wallmount | | 406891929 | |
| PC Administration Adapter Kit | | 406960930 | |
| Printer Adapter Kit | | 406960948 | |
| Printer Port to PC Adapter Kit | | 406960955 | |
| Installation and System Administration Manual | | 406891713 | |
| Quick Reference Card for MERLIN Identifier Users | | 406891705 | |
| Display Unit | | 406891663 | |
| Keyboard 101 | | 406891655 | |
| Controller with Mounting Panel | | 406891648 | |
| Cable, Serial RS-232, Controller to PC | | 406891903 | |
| **MERLIN MAGIX Computer Telephony Integration (CTI) Link** | | | |
| MERLIN MAGIX CTI Link Includes: EICON Board & MMPD R3.0 CD and disk kit | 700253545 | | |
| **Inactive MERLIN LEGEND R5.0 TSAPI Offers** | | | |
| MERLIN LEGEND TSAPI Solution | 8320-500 | | |
| PassageWay Telephony Services R2.21D for NetWare Core/Clients) | | 407556364 | |
| PassageWay Telephony Services R2.21D for NetWare - 250+User License | | 407465558 | |
| Legend Driver Software | | 108027368 | |
| EICON Card | | 407556364 | |
| MERLIN MAGIX CTI Link Includes: EICON Board & MMPD R2.2 CD and disk kit | 6180-CTI | 108923517 | |
| MERLIN MAGIX CTI Link Includes: EICON Board & MMPD R2.1 CD and disk kit | 6180-CTI | 700212491 | |
| EICON Card | | 408458032 | |
| MMPD R2.1 CD and disk kit, contains NT R2.1 Driver Software, CentreVu Telephone Services CD, authorization disk and license disk. | | 700209919 | |
| CCOM Application (PhoneLine) (does not include Professional Services) | | | |
| 5 Users License | | | |
| 10 Users License | | | |
| 25 Users License | | | |
| 50 Users License | | | |
| Q.SYS Application (PhoneWare) (does not include Professional Services) | | | |
| 5 Users License | | | |
| 10 Users License | | | |
| 25 Users License | | | |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| 50 Users License | | | |
| CALLWARE Application | | | |
| (Phonetastic) | | | |
| (does not include Professional Services) | | | |
| 5 Users License | | | |
| Phonetastic Admin Guide | | | |
| User Guide | | | |
| Application (core) | | | |
| 10 Users License | | | |
| Phonetastic Admin Guide | | | |
| User Guide | | | |
| Application (core) | | | |
| 25 Users License | | | |
| Phonetastic Admin Guide | | | |
| User Guide | | | |
| Application (core) | | | |
| 50 Users License | | | |
| Phonetastic Admin Guide | | | |
| User Guide | | | |
| Application (core) | | | |
| 100 Users License | | | |
| Phonetastic Admin Guide | | | |
| User Guide | | | |
| Application (core) | | | |
| Professional Services Offers | | | |
| 1 Application | | | |
| 2 Applications | | | |
| Custom Contract | | | |
| **Inactive CTI Applications** | | | |
| Group Phoneware | | | |
| 5 Seats | 6156-205 | | |
| 10 Seats | 6156-210 | | |
| 25 Seats | 6156-225 | | |
| 50 Seats | 6156-250 | | |
| Phonetastic | | | |
| 5 User Right-to-Use | 6156-305 | | |
| 10 User Right-to-Use | 6156-310 | | |
| 25 User Right-to-Use | 6156-325 | | |
| 50 User Right-to-Use | 6156-350 | | |
| 100 User Right-to-Use | 6156-400 | | |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| **System Adjuncts and Adapters** | | | |
| **Channel Service Units (CSUs)** | | | |
| T1 CSU (3150 CSU) | 21581 | 107087546 | |
| T1 ESF CSU Stand-alone | | 107063828 | 21581-00001 |
| 115VAC in line Transformer | | 406942284 | |
| Converter Cable | | 107083711 | 3100-F1-560 |
| RJ48M to RJ48M Unshielded Twisted Pair Cable (T1) | | 406941559 | 3110-F1-500 |
| 3160-DSU | 2151-DP2 | 107115784 | 3160-A1-DSU |
| 3164-DSU | 2151-DP4 | 107115792 | 3164-A1-DSU-CSU |
| **Inactive** | | | |
| Auxiliary Power Unit 9024 | | 406467142 | 9024 |
| T1 ESF CSU Stand-alone | | 107063828 | 21581-00001 |
| 115VAC in line Transformer | | 406942284 | |
| Converter Cable | | 107063711 | 3100-F1-560 |
| RJ48M to RJ48M Unshielded Twisted Pair Cable (T1) | | 406941559 | 3110-F1-500 |
| Optional Equipment: | | | |
| Unshielded TW Pair Cable (T1) Canada | | 107063703 | 3100-F1-510 |
| Straight-Thru Cable PC Serial Port | | 406941542 | 3100-F1-550 |
| Straight-Thru Cable Terminal/Printer | | 406941534 | 3100-F1-540 |
| Modular DC Voltage Adapter | | 406941492 | 3100-F1-250 |
| Wall Mount Kit | | 406941674 | 3100-F1-400 |
| Cables for Mounting | | | |
| 25' D4BU-29 Cord | | 106472921 | ASSY-4400-F1-533 |
| 2' D4BU-29 Cord | | 106472905 | ASSY-4400-F1-530 |
| Dial Back Modem FLD | | 106842271 | ASSY-3400-F2-201 |
| Dial Back Modem FAC | | 106842289 | ASSY-3400-G2-201 |
| Dial Back Modem NFLD | | 106842305 | ASSY-4000-F2-201 |
| Dial Back Modem NFAC | | 106842297 | ASSY-4000-G2-201 |
| Prism MUX Field | | 106842313 | ASSY-3400-F2-200 |
| Optional Equipment: | | | |
| Peripheral Interface | 62515 | 105179303 | KIT PRTS-D181558 |
| Async. Data Unit, Receptacle | 2169-004 | 103963971 | Z3A2 |
| RS232 Connector/Cord | | 105388474 | CORD M8AJ-87 |
| Async, Data Unit, Plug | 2169-001 | 103963971 | Z3A2 |
| RS232 Connector/Cord | | 105388466 | CORD M8AK-87 |
| Aux Power (2 required) | 21691 | | |
| Transformer (2012-D) | | 102599354 | TRNSF-2012D-49 |
| Adapter (248B) | | 102802113 | ADPTR-248B-50 |
| Cord | | 102937620 | CORD-D6AP-87 |
| Adapter (400B) | | 104152558 | ADPTR-400B2 |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| Electrostatic discharge/ (ESD) suppression kits | | | |
| D-181574 | | 105179329 | D181574 |
| D-181589 | | 105201891 | D181589 |
| D-181590 | | 105201909 | D181590 |
| D-181591 | | 105201917 | D181591 |
| D-181593 | | 105201933 | D181593 |
| EMI filter | | 103965208 | Z200A |
| In-Range Out-of-Building[4] 146E (IROB) unit | | | |
| IROB unit-MLX | 8310-013 | 407568161 | 505A ASSY 0A WD |
| Fuse block 505A for IROB (8 fuse blocks per box) | | 406610337 | |
| 2 IROBs | 8310-020 | | |
| 4 IROBs | 8310-021 | | |
| 6 IROBs | 8310-022 | | |
| 8 IROBs | 8310-023 | | |
| Off-Premises Range Unit | 2302-OPT | 107531337 | 122A-215 |
| Digital Magic on Hold® Basic Prerecorded | | | |
| Package | 3128-020 | | |
| Digital Deck | | 407464684 | DMOH1DIGITAL |
| Cassette | | 407166941 | DMOH-02 GENERIC |
| Personalized Recording | | | |
| Package | 3128-030/A | | |
| Digital Deck | | 407464684 | DMOH1 DIGITAL |
| Cassette | | 406876664 | DMOH-01 PERSONALIZE |
| Custom Production | | | |
| Package (Std. Tape program) | 3128-040/A | | |
| Digital Deck | | 407464684 | DMOH1 DIGITAL |
| Cassette | | 406876680 | DMOH-05 SIN F/CUST |
| Stand-alone Package of 4 Custom Productions | 31280/A | 405126632 | M4 FOUR |
| Package of 6 Custom Recordings | 31281/A | | |
| Package of 12 Custom Recordings | 31282/A | | |
| Stand-alone Package of 3 Custom Productions | 31283/A | 406876649 | DMOH-03 |
| Stand-alone Single Custom Production Package | 31284/A | 405135344 | INDIV |
| Duplicate of a Custom Production (for Second Location) | 31289 | 405127945 | D-IP/EM DUB IND MSTR |
| Package of 4 Duplicate Recordings | 31285/A | | |
| Package of 6 Duplicate Recordings | 31286/A | | |
| Package of 12 Duplicate Recordings | 31287/A | | |
| Re-License of Music | 31288 | 405127879 | D24 24 DUB |
| Melody System Algorithm System and Custom | 3128-015/A | | |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| Production | 3128-080/A | | |
| Algorithm System and Duplicate Production | 3128-085/A | | |
| Express Custom Recording | 3128-001/A | | |
| Package of 4 Express Custom Recordings | 3128-004/A | | |
| Magic Messenger Personalized Recording | 3128-125/A | | |
| Magic Messenger Customized Recording | 3128-130/A | | |
| Package of 3 Magic Messenger Custom Recordings | 3128-133/A | | |
| Digital Announcer Unit (one minute) | 3119-001 | | |
| Announcer | | 407344365 | |
| Recorder | | 406659342 | RCDR-DMOH2 |
| Cassette | | 406769455 | CSTT-DMOH5 |
| Digital Announcer Unit (three minute) | 3119-003 | | |
| Announcer | | 407344357 | |
| Recorder | | 406659342 | |
| Cassette | | 406659359 | |
| Four Channel System (1-minute recording per channel) | 3119-141 | 407716638 | |
| Four Additional Channels (1-minute recording per channel) | 3119-041 | | |
| Four Channel System (1-minute recording per channel, remote recording capability) | 3271-141 | 407038512 | ADP02/A |
| Eight Channel System (1-minute recording per channel, remote recording capability) | 3271-241 | 407079003 | |
| Four Channel System (2-minutes recording per channel, remote recording capability) | 3271-142 | 407556232 | |
| Package of 12 Headset Prong Adapters | 3122-012 | | |
| Package of 12 Headset Modular Adapters (for MLX sets) | 3122-024 | | |
| Package of 12 Supra Noise Canceling Headpieces | 3122-155 | | |
| Modem 2224G (limited availability) | 2224-CEO | 105659965 | 2224C-L1 D/2 |
| Music Coupler | 61398 | 406143925 | ASSY-K23395 L3 |
| PagePac Plus | | | |
| PagePac Plus Controller | 5323-100 | 406914598 | UNIT-22051-000 |
| PagePac Plus Controller with Power | 5323-105 | | |
| PagePac Plus 16 Zone | 5335-100 | 406914614 | UNIT-22051-016 |
| D20 PagePac Plus Amplicenter | 5328-020 | 406915280 | UNIT-22051-020 |
| D100 PagePac Plus | | | |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| Amplicenter | 5328-100 | 406915264 | UNIT-22051-100 |
| D300 PagePac Plus Amplicenter | 5328-300 | 406915330 | UNIT-22051-300 |
| Universal 70V Door Spkr. | 5330-230 | 406914630 | UNIT-22050-070 |
| SMDR Printers | | | |
| AP Printer (80-column) | 4200-570 | 406637314 | ML182 |
| 571Parallel Printer | | 406516989 | 571-MCII 6FT |
| (132-column) | 4200-571 | 406712067 | ML321P |
| AP CAT Printer (serial) | 4200-572 | 406716464 | 571-MCII 6FT |
| Uninterruptible Power Supply | | 406716464 | ML182-R2 |
| 500 VA (15 min)(inactive) | | 105610141 | 515005C111 |
| Reserve (1 hr) (inactive) | | 105610174 | 0053150 |
| PagePal Interface | 5335-700 | 407120716 | |
| **Audio Visual Paging** | | | |
| 215C Message Center | 5332-100 | | |
| 4120C Message Center | 5332-150 | | |
| Connector Kit | 5332-900 | | |
| Wireless Keyboard | 5332-905 | | |
| Alpha Net Plus Software | 5332-910 | | |
| R2485 Repeater | 5332-915 | | |
| **External Alerts** | | | |
| Loud external ringer | 31016 | 407105691 | RINGER-L1AMP-49 |
| External ringer | 31019 | | |
| Supplemental Alerts | | | |
| Universal Alert | 5580-001 | | |
| Alert Horn | 5580-021 | 406207217 | THET4-1 |
| Alert Strobe | 5580-041 | 403319197 | AT-WHL LK |
| **Inactive System Adjuncts and Adapters** | | | |
| ExpressRoute 1000 Data Unit | | 107651796 | |
| V.35 Cable | | 107651275 | |
| 7500B data module | | 105657639 | 7500B-L1 |
| Stand-alone power supply | | 405509852 | WP90110L7 |
| Multiple mounting | | 105441166 | Z77A |
| 7500A upgrade kit | | 105688501 | D182208 |
| Ring generator unit | | 105213201 | 129B RING GEN |
| Universal Paging | | 405891698 | KIT-UPAM |
| Access Module (UPAM) | | | |
| TAM-B | | 405899972 | D181900 |
| PRS-48 | | 405742735 | D181900 |
| WMT-1A | | 405891680 | D181900 |
| Zonemate™ 9 | | | |
| Dialer unit | | 404057911 | DIAL UNIT-9ZONE |
| Control unit | | 405024134 | CNTL 22050-020 |
| Zonemate 39 | | | |
| Dialer unit | | 404057929 | 39 ZONE SELECT |
| Control unit | | 405024134 | CNTL-22050-020C |
| E1CM ringer and parts | 61211 | | D-181233 |
| 290A adapter | | 102992252 | 290A ADPTR |
| Ringer | | 407105683 | E1CM-49 |
| Mounting plate | | 102988466 | 1049A |
| Cord | | 103938494 | CORD-D4CH-87-25 |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| Network Interface Alert Bell | 61211 | 407105683 | RINGER-E1CM-49 |
| **Telephone Adjuncts and Adapters** | | | |
| Multi-Function Module (digital) | 3156-MFM | 108053489 | |
| Supplemental Alert Adapter (SAA) | 2301-SSA | 105031199 | ADPTR-856A |
| MLX-10/MLX-10D cover | | 406648469 | |
| MLX Telephone Power Supply | 2404-010 | | |
| MSP1 Power Supply | | 406743419 | WP92464L1 |
| 7' Cord | | 103786778 | |
| **Single-line telephones** | | | |
| S202A Speakerphone | 3152-008 | | |
| Black | | 105721088 | TEL-S202A-003 |
| Misty cream | | 105721096 | TEL-S202A-215 |
| Message-Waiting Indicator | 3152-004 | 103966396 | Z34A |
| Polycom Speakerphones | | | |
| Standard | 3127-STD | 407428697 | |
| Sound Station EX | 3127-EXP | 407428739 | |
| Lapel Microphone | 3127-MIC | 407428432 | |
| Avaya Analog Premier EX | | | |
| Without Microphone | 3127-APE | 407795251 | |
| With Microphone | 3127-APX | 407795269 | |
| **Single-Line Telephones—Miscellaneous Add-Ons** | | | |
| Ground-Start Button | 31021 | 405792839 | Key-KS23566L1 |
| 6218/6220/6219/6221 Replacement designation card package | 31952 | 160329 | |
| **Inactive Single-line Telephones** | | | |
| Program, Pause, and Auto Dial button conceal kit for 8100-series telephones | | 106248370 | Kit-D 182363 Analog |
| Speakerphone | 3131-004 | 103786786 | D8W-87 7FT |
| Black | | 106270325 | MOD-CS201A-003 |
| Misty cream | | 106270333 | MOD-CS201A-215 |
| 4A Speakerphone | | | 4A |
| Power unit | | 102139938 | PWR UNIT-85B1 |
| Block connector | | 102434925 | BLK CON-82B-49 |
| Adapter for single-line telephone | | 102813888 | ADPTR-223C |
| Adapter for multiline telephone | | 102949013 | ADPTR-223D IP |
| Transmitter (black) | | 103971891 | TRMR-680AF-03 |
| Transmitter (ivory) | | 103971909 | TRMR-680AF-50 |
| Loudspeakers | | | |
| Black | | 103873873 | LSPK-108AA-03 |
| Ivory | | 103873881 | LSPK-108AA-50 |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| Green | | 103873899 | LSPK-108AA-51 |
| Beige | | 103873907 | LSPK-108AA-60 |
| White | | 103873964 | LSPK-108AA-58 |
| S201 Speakerphone | | 103786786 | D8W-87 7FT |
| Black | | 106192651 | MOD-S201AP-003 |
| Misty cream | | 106192693 | MOD-S201AP-215 |
| CS201 Conference | | | |
| S203A Speakerphone | | | |
| Black | | 106058340 | MOD-S203A-003 |
| Misty cream | | 106508365 | MOD-S203A-215 |
| Hands-Free Unit (HFU) | | 103814356 | MOD-S102A |
| **Headsets and Adapters** | | | |
| Headset Network Amplifier (M12LU/CM) | 3122-022 | 407639715 | KS23822L26 |
| StarSet® Headpiece | 3122-030/A | 406445627 | KS23822L3 |
| Supra® Ultra Headpiece | 3122-040 | 406445791 | KS23822L5 |
| Supra® Wire/Cordless for use with Transtalk MDC 9000 | 3122-041 | 407560010 | |
| Supra® Headpiece for use with Transtalk MDW9030P | 3122-042 | | |
| Radium ear set for use with Transtalk MDW9030P | 3122-043 | | |
| Supra Ultra II Twin Top Headpiece | 3122-045 | 406976076 | KS23822L13 |
| Supra Noise Canceling Headpiece | 3122-055 | 406445809 | KS23822L6 |
| Supra Ultra II (NC) Headpiece | 3122-060 | 406445817 | KS23822L7 |
| Cord Free Model LKA 10 | 3122-097 | 408271385 | |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| **Inactive Headsets and Adapters** | | | |
| Headset Adapter | | 105752042 | ADPTR-502C-003 |
| 500A Headset Adapter | | 106690043 | Adapter EL-500A-265 |
| | | 405331711 | Pwr Sup-KS2291 1L2 |
| | | 102479904 | Cord-D4BU-29 Std 7FT |
| | | 104152558 | Adapter-40082 |
| Modular Base Unit for Headset (M12LU) | 3124-022 | 408094704 | KS23822L26 LU |
| Headset Adapter Cord | 3124-HIC | 408122950 | 45283-01 |
| Mirage® Ultra Headpiece | 3122-050 | 406445783 | KS23822L4 |
| Mirage® Ultra NC Headpiece | 3124-050 | 408020998 | KS23822L48 NA |
| Supra® Starter Headpiece | 3122-046 | 408018943 | KS23822L59 VA |
| Supra® Starter (NC) Headpiece | 3122-047 | 408001436 | KS23822L59 NA |
| Modular Amplifier | 3122-020/A | 406741900 | KS23822L2 |
| Plug Prong Amplifier | 3122-010 | 406445601 | KS23822L1 |
| Earset Starter Headpiece | 3122-031 | 408018901 | KS23822L58 VA |
| Earset Starter Headpiece with Noise Canceling Feature | 3122-032 | 408001428 | KS23822L58 NA |
| Starter Duoset | 3122-048 | 408018869 | KS23822L57 VA |
| Starter Special NC Duoset | 3122-049 | 408001386 | KS23822L57 NA |
| Tristar Ultra Headpiece | 3124-035 | 407547058 | KS23822L17 |
| Tristar Ultra NC Headpiece | 3124-036 | 408020758 | KS23822L56 NA |
| Encore Ultra VT Headpiece | 3124-062 | 408021004 | KS23822L49 VA |
| Encore Ultra (NC) Headpiece | 3124-065 | 408020980 | KS23822L46 NA |
| Encore Ultra II Headpiece | 3124-067 | 408021095 | KS23822L55 VA |
| Encore Ultra II (NC) | 3124-070 | 407547074 | KS23822L20 |
| **4400-Series Telephones—Miscellaneous Add-Ons/ Replacement Parts** | | | |
| **Cords** | | | |
| D2R 14-ft. Line Cord/Clear[5] | 4499-D2R | 408272953 | D2R-029 |
| D4BU 14-ft. Line Cord/Satin[6] Silver | 4499-D4B | 408250629 | D4BU-87 |
| D8Y 3-ft. Interface Cord for 4450 | 4499-D8Y | 108650623 | D8Y |
| D2R 1-ft. Line Cord/Clear for 4400-series wall-mount) | 4499-CD1 | 408220432 | |
| H4DU 9-ft. Handset Cord, black (quantity: 1) | 26300 | 108004292 | H4DU-003-9 |
| H4DU 9-ft. Handset Cord, black (quantity: 3) | 26315 | 108004292 | H4DU-003-9 |
| H4DU 12-ft. Handset Cord, black (quantity: 1) | 26301 | 108004300 | H4DU-003-12 |
| H4DU 12-ft. Handset Cord, black (quantity: 3) | 26316 | 108004300 | H4DU-003-12 |
| H4DU 25-ft. Handset Cord, black (quantity: 1) | 26302 | 108004318 | H4DU-003-25 |
| H4DU 25-ft. Handset Cord, black (quantity: 3) | 26317 | 108004318 | H4DU-003-25 |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| H4DU 9-ft. Handset Cord, white (quantity: 1) | 26303 | 108004326 | H4DU-264-9 |
| H4DU 9-ft. Handset Cord, white (quantity: 3) | 26318 | 108004326 | H4DU-264-9 |
| H4DU 12-ft. Handset Cord, white (quantity: 1) | 26304 | 108004334 | H4DU-264-12 |
| H4DU 12-ft. Handset Cord, white (quantity: 3) | 26319 | 108004334 | H4DU-264-12 |
| H4DU 25-ft. Handset Cord, white (quantity: 1) | 26305 | 108004342 | H4DU-264-25 |
| H4DU 25-ft. Handset Cord, white (quantity: 3) | 26326 | 108004342 | H4DU-264-25 |
| **Handsets** | | | |
| Replacement Handset-Standard (Black) | 33082 | 108216177 | AB1C-003 |
| Replacement Handset-Standard (White) | 33080 | 108216185 | AB1C-264 |
| **Specialty Handsets** | | | |
| Push-to-Talk Handset, black | 33120 | 408117950 | AJ5A-003 |
| Push-to-Talk Handset, white | 33121 | 408117968 | AJ5A-264 |
| Amplified Receive Handset, black | 33114 | 408057479 | AJ6A-003 |
| Amplified Receive Handset, white | 33115 | 408056487 | AJ6A-264 |
| Noisy Location Handset, black | 33117 | 408057503 | AJ8A-003 |
| Noisy Location Handset, white | 33118 | 408057511 | AJ8A-264 |
| K-Style Push-to-Talk Handset, black | 31055A-09 | 406712430 | K5H1 (KS23843L4) |
| K-Style Push-to-Talk Handset, white | 31055A-10 | 406712448 | K5H1 (KS23843L5) |
| K-Style High Noise-Canceling Handset, black | 31057A-09 | 406712497 | K6S2 (KS23843L10) |
| K-Style High Noise-Canceling Handset, white | 31057A-10 | 406712505 | K6S2 (KS23843L11) |
| K-Style Amplified Speech, black | 31054A-09 | 406712406 | K7S2 (KS23843L1) |
| K-Style Amplified Speech, white | 31054A-10 | 406712414 | K7S2 (KS23843L2) |
| K-Style Noise-Canceling Handset, black | 31056A-09 | 406712463 | K8S1 (KS23843L7) |
| K-Style Noise-Canceling Handset, white | 31056A-10 | 406712471 | K8S1 (KS23843L8) |
| K-Style Amplified, Push-to-Listen Handset, black | 31053A-09 | 407327212 | K8S2 |
| K-Style Amplified, Push-to-Listen Handset, white | 31053A-10 | 106382369 | K8S2 |
| Shoulder Rest, white | 33112 | 108357369 | 35A-264 |
| **Power Supply** | | | |
| Auxiliary Power Supply for 4424LD+/4450 DSS Power Supply | 4499-PWR | 108596412 | D183028 |
| **Wall-Mount and Desk Stands** | | | |
| Small Mounting stand (fits 4400/4400D/4406D/4406D+/450DSS) | | | |
| Optional Stand - black | 4499-SBS | 108541194 | |
| Optional Stand - white | 4499-SWS | 108541202 | |
| Large Mounting stand (fits 4412D+/4424D+/4424LD+ | | | |
| Optional Stand - black | 4499-SBL | 108541269 | |
| Optional Stand - white | 4499-SWL | 108541277 | |
| **Designation Cards and Covers** | | | |
| 4406D+ Designation Cards (10 per package) | CIB 3205 | 108522855 | |
| 4412D+/4424D+ Designation Cards (10 per package) | CIB 3208 | 108522889 | |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| 4424LD+ Designation Cards (10 per package) | CIB 3209 | 108522897 | |
| 4450 DSS Designation Cards (10 per package) | CIB 3211 | 108523010 | |
| QCC Button Designation Cards (2 cards per package) | CIB 3201 | 108493289 | |
| 4406D+ Designation Card Covers (3 per package) | 4499-CV6 | 408220440 | |
| 4412D+/4424D+/4424LD+ Designation Card Covers (10 per package) | 4499-CV2 | 408220457 | |
| 4450 Designation Card Covers (25 per package) | 4499-CVD | 848410965 | |
| 4424LD+ System Programming Overlay | | 848410130 | |
| **MLX Telephones—Miscellaneous Add-Ons/Replacement Parts** | | | |
| **Handsets and Cords** | | | |
| Handset Hook (black) | | 845544998 | |
| Handset Hook (white) | | 845545003 | |
| Handset (black) | | 106050065 | K2S1-003 |
| Handset (white) | | 106053408 | K2S1-264 |
| Handset, amplified hearing | 31052 | | |
| Black | | 105581896 | K6S2-003 |
| White | | 106248248 | K6S2-264 |
| Misty cream | | 105581904 | K6S2-215 |
| Noise Canceling Handset | 31056 | | |
| Black | | 406712463 | KS23843L7 |
| White | | 406712471 | KS23843L8 |
| Misty cream | | 406712489 | KS23843L9 |
| High-Noise Canceling Handset | 31057 | | |
| Black | | 406712497 | KS23843L10 |
| White | | 406712505 | KS23843L11 |
| Misty cream | | 406712513 | KS23843L12 |
| Amplified Speech Handset | 31054 | | |
| Black | | 406712406 | KS23843L1 |
| White | | 406712414 | KS23843L2 |
| Misty cream | | 406712422 | KS23843L3 |
| Push-to-Talk Handset | 31055 | | |
| Black | | 406712430 | KS23843L4 |
| White | | 406712448 | KS23843L5 |
| Misty cream | | 406712455 | KS23843L6 |
| Push-to-Listen Handset | 31053 | | |
| Black | | 406382344 | K8S2-003 |
| White | | 406382369 | K8S2-264 |
| Misty cream | | 406382351 | K8S2-215 |
| Handset cord, 9' (2.74 m), black | | 105635429 | H4DU-003 9 FT |
| Handset cord, 9' (2.74 m), white | | 105701809 | H4DU-264 9'BULK |
| Handset cord, 12' (3.66 m), black | | 102401445 | H4DU-3 12FT IP |
| Handset cord, 12' (3.66 m), white | | 102402609 | H4DU-26412'IP |
| Handset cord, 25' (7.62 m), black | | 105523866 | H4DU-3 25' CORD |
| DSS line cord, 2' (61 cm) | | 106187545 | D8AC-87 |

## Ordering Codes—*Continued*

| Component | PE/SAP Code | Mat. Code | App. Code |
|---|---|---|---|
| **Desk Stands and User Trays** | | | |
| Stand (large, black) | | 846320851 | STAND-LARGE BL |
| Stand (large, white) | | 846320844 | STAND-LARGE WH |
| Stand (small, black) | | 846320810 | STAND-SMALL BL |
| Stand (small, white) | | 846320802 | STAND-SMALL WH |
| User tray (black) | | 846320240 | USER TRAY DWR B |
| User tray (white) | | 846320232 | USER TRAY DWR W |
| **Designation (Button Assignment) Cards and Covers** | | | |
| Card[7]—MLX-10, MLX-10D, MLX-10DP, MLX-16DP, MLX-20L, MLX-28D | | 847355559 | |
| Card set-DSS[8] | | 106448756 | KIT-D182464 |
| Card covers-DSS (black)<5> | | 106448731 | KIT-D182462 PRT |
| Card covers-DSS (white) <5> | | 106448749 | KIT-D182463 PRT |
| Card set-QCC [9] | | 106561673 | KIT-D182562 PRT |
| Card covers[10]—MLX-10, MLX-10D, MLX-20L | | 106448681 | KIT-D182457 PRT |
| Card covers<5>—MLX-16DP | | 107499162 | KIT-D182846 PRT |
| Card covers<5>—MLX-28D | | 106448699 | KIT-D182458 PRT |
| **Wiring Kits** | | | |
| Interconnect Wiring Kit | | | |
| 110AB1-100JP12 | | 104409396 | |
| 110A1 trough | | 104407960 | |
| D-Rings | | 842139248 | |
| D8W cords | | 103786802 | |
| Parts list | | | |
| SYSTIMAX® | | | |
| MERLIN Wiring Kit | 3103-MER | 106393671 | |
| 110A1 trough (5) | | 104407960 | |
| 110AB1-100JP12 modular block (2) | | 104409960 | |
| 110AB1-100 FT punch down block (1) | | 103823845 | |
| D-Rings (6) | | 842139248 | |
| Patch cords 12 cords, 4-pair, 5' (1.5 m) | | 846619989 | |
| D8W cords 24 cords, 14' (4.3 m) | | 103786802 | |
| Template | | 846613933 | |
| Instruction sheet | | 846613941 | |
| Parts List | | 846623924 | |
| CAT 3 Standard 4-Pair Wire | 2782-004 | | |
| CAT 3 Additional 4-Pair Run | 2783-MU3 | | |
| CAT 5 Standard 4-Pair Wire | 2782-CT5 | | |
| CAT 5 Additional 4-Pair Run | 2782-MU5 | | |

1 Contains the *Feature Reference*, *Feature Reference On-Line Tool* and *System Manager's Quick Reference*.
2 Consult Avaya for other area-specific information.

3 Includes the following documentation: the *System Manager's Manual*, the *Implementation and Service Manual*, the *Quick Reference Guide*, Wallet Cards, Worksheets, and *Implementation and Service Release Notes*.
4 Any multiline off-premises telephone must have an appropriate IROB protector both at the control unit location and at the off-premises location.
5 6-position, 2-conductor cord for connection of 4400 telephone to line interface when auxiliary power is not required.
6 6-position, 4-conductor cord for connection of 4400 telephone to auxiliary power supply.
7 Ten sheets per package.
8 Includes both top and bottom cards or covers.
9 Eight cards per kit (four sets).
10 Four per package.

Notes

### Control Unit Modules

| Module | Trunk Type | Extension Type |
|---|---|---|
| Processor | N/A | N/A |
| Power supply | N/A | N/A |
| 008 MLX[1] | N/A | MLX extensions, including:<br>■ MLX voice only<br>■ MLX voice with Voice Announce<br>■ MLX voice and Multi-Function Module (MFM) with T/R adjunct<br>■ MLX voice and MFM with Supplemental Station Adapter (SSA)<br>■ ISDN terminal adapter only<br>■ Access device for data communications between a PC on the system and a high-speed Internet connection, connection to remote node LAN access server, or ISDN router<br>■ Computer Telephony Integration (CTI) link<br>■ Videoconferencing systems using one jack and 2B data feature or 2 jacks with ISDN terminal adapters (depending on video system)[2] |
| 008 OPT[2] | N/A | On-premises or off-premises single-line telephones |

1 Frmware can be upgraded by using a PCMCIA card.
2 Even though the OPT module has only 8 jacks, it uses 12 ports of capacity, thereby decreasing overall extension capacity by 4 extensions for every OPT module.

**Specifications**

**Highlights**: 68EC020 processor at 16 MHz, built-in 1200/2400-bps modem; built-in diagnostics; Hybrid/PBX, Key, or Behind Switch mode option; 1.5 MB RAM backup for 4 days; PCMCIA interface
**Ports**: 3 RS-232-C ports—1 for debugging (plugged to prevent access), one for SMDR, and 1 for system administration

**Power input**: 117 VAC
**Power output**: +5 VDC (10 A), -5 VDC (2.50 A), -48 VDC (2.05 A)
**Capacity**: 54 unit loads

**Capacity**: 8 digital extension jacks, each with 1 or 2 extensions (each extension is assigned an individual extension number)
**Signaling**: BRI S/T protocol (two 64-kbps B channels, one 16-kbps D channel) on a passive bus
**Power**: 48 VDC phantom power to telephone, 48 VDC over a separate pair (7–8) to an operator console with a DSS
**Loop range**: 3000 feet (914 m), in-building or in-range out-of-building (with MLX IROB protectors) service only

**Capacity**: 8 T/R extensions on 2-way voice transmission path with support for telephones with message waiting lights, 2 TTRs
**Ringing current**: 75-Vrms, 20-Hz trapezoidal ringing superimposed on -48 VDC.
**REN**: ≤ 1.0 per port
**Disconnect signal**: 900 ms (T/R short for analog modem, G3 fax, etc.)
**Switchhook flash detection**: 300–1200 ms
**Loop resistance**: Serves 2-wire loops to 1300 ohms, including extensions
**dB loss**[1]: 3dB (factory setting), 0dB if all calls are to another OPT station.

1 If one OPT station calls another OPT station, the loss values of the two OPT stations are added resulting in transmission levels that are too low.008 OPT modules (517D28) may be hardware configured to 0dB loss, however this should only be done if all or the majority of calls from the OPT stations are to other OPT stations. Setting the loss value to 0dB violates EIA-464-A-1 specifications. Contact Tier 4 before modifying the loss value settings of 008 OPT modules.

**Control Unit Modules** *—Continued*

| Module | Trunk Type | Extension Type |
|---|---|---|
| 016 T/R | N/A | Single-line telephones; Intuity AUDIX®; Octel 100; T/R adjuncts (such as answering or fax machine); analog data devices (such as modems) |
| 016 ETR[1] | N/A, TTR | All ports, when programmed for ETR: MLS, ETR, Business Cordless 905, and TransTalk 9031/9040 telephones. Ports 11–16 when programmed for T/R: any T/R device such as single-line telephones;<br>Intuity AUDIX®; Octel 100; T/R adjuncts (such as answering or fax machine); analog data devices (such as modems) |
| 016 MLX<5> | N/A | MLX extensions, including:<br>■ MLX voice only<br>■ MLX voice with Voice Announce<br>■ MLX voice and MFM with T/R adjunct<br>■ MLX voice and MFM with SSA<br>■ ISDN terminal adapter only<br>■ Access device for data communications between a PC on the system and a high-speed Internet connection, connection to remote node LAN access server, or ISDN router<br>■ CTI link<br>■ Videoconferencing systems using one jack and 2B data feature or 2 jacks with ISDN terminal adapters (depending on video system)[1] |
| 024 TDL | N/A | TDL extensions for 4400-Series and TransTalk 9040 telephones. Access device for data communications between a PC on the system and a high-speed Internet connection, connection to remote node LAN access server, or ISDN router |

1 Firmware can be upgraded by using a PCMCIA card.

**Specifications**

**Capacity**: 16 T/R extensions on 2-way voice transmission path with support for telephones with message waiting lights, 4 TTRs
**Power**: 40-VDC, 600-ohm battery source
**Ringing current**: 105-Vrms, 30-Hz sinusoidal ringing superimposed on -48 VDC
**REN**: ≥ 4.0 per port
**Disconnect signal**: 900 ms (T/R short for analog modems, G3 fax, etc.)
**Switchhook flash detection**: 300–1200 ms

**Capacity**: 16 ETR station ports including 6 with T/R functionality and 4 TTRs. First 10 ports are ETR ports only; remaining 6 ports can support either T/R or ETR, but not both simultaneously
**Power**: -48V for ETR and -49V normal for T/R
**Ringing current**: 20/25 Hz balanced trapezoidal ring signal
**REN**: 2 per port
**Off-hook detection**: ≥18mA, ≤30ma, ≥20 msec for T/R; massage control for ETR
**On-hook detection**: ≤14mA for T/R; massage control for ETR
**T/R switchhook flash detection**: 300-1200 ms

**Capacity**: 16 digital station ports
**Signaling**: BRI S/T protocol (two 64-kbps B channels, one 16-kbps D channel) on a passive bus
**Power**: 48 VDC phantom power to telephone, 48 VDC over a separate pair (7–8) to an operator console with a DSS
**Loop range**: 3000 feet (914 m), in-building or in-range out-of-building (with MLX IROB protectors) service only

**Capacity**: 24 digital station ports and 8 TTRs
**Signaling**: BRI S/T protocol (two 64-kbps B channels, one 16-kbps D channel) on a passive bus
**Power**: 48 VDC phantom power to telephone, 48 VDC over a separate pair (7–8) to an operator console with a DSS
**Loop range**: 3000 feet (914 m), in-building or in-range out-of-building (with IROB protectors) service only

**Control Unit Modules**—*Continued*

| Module | Trunk Type | Extension Type |
|---|---|---|
| 100 D[1] | T1 or PRI | T1 emulates 24 lines/trunks: loop-start, ground-start, tie, and Direct Inward Dial (DID; Hybrid/PBX mode only); can also supply subscriber services. T1 can also provide high-speed (56K) data communications and digitally emulated tie trunks for data communications. PRI supports subscriber services, allows high-speed digital data communications, and includes special features. |
| 100R INA[1] | T1 or PRI | T1 emulates 24 lines/trunks: loop-start, ground-start, tie, and Direct Inward Dial (DID; Hybrid/PBX mode only); can also supply subscriber services. T1 can also provide high-speed (56K) data communications and digitally emulated tie trunks for data communications. PRI supports subscriber services, allows high-speed digital data communications, and includes special features. Channels can be dedicated for data only to provide high-speed access to the Internet. Contains built-in Channel Service Unit. |
| 100 DCD[1] | T1 or PRI | T1 emulates 24 lines/trunks: loop-start, ground-start, tie, and Direct Inward Dial (DID; Hybrid/PBX mode only); can also supply subscriber services. T1 can also provide high-speed (56K) data communications and digitally emulated tie trunks for data communications. PRI supports subscriber services, allows high-speed digital data communications, and includes special features. Contains built-in Channel Service Unit (supported in Release 1.5 and later systems). |
| 400 E&M | Tie trunk | N/A |

1 Firmware can be upgraded by using a PCMCIA card.

**Specifications**

**Capacity**: 24 channels (“virtual” lines/trunks) for voice and analog data or for digital data only (T1); or 23 B-channels for voice and data, and 1 channel used for signaling (PRI). Supports networking in Hybrid/PBX mode only.
**Mode**: Multiplexes up to 24 channels into 1 facility and demultiplexes 1 facility into up to 24 channels.
**Speed**: Up to 64 kbps
**Signaling**: DS1 over 4-wire; common channel is not an option for T1; PRI uses 23 B+D

**Capacity**: 24 channels (“virtual” lines/trunks) for voice and analog data or for digital data only (T1); or 23 B-channels for voice and data, and 1 channel used for signaling (PRI). Supports networking in Hybrid/PBX mode only.
**Mode**: Multiplexes up to 24 channels into 1 facility and demultiplexes 1 facility into up to 24 channels.
**Speed**: Up to 64 kbps
**Signaling**: DS1 over 4-wire; common channel is not an option for T1; PRI uses 23 B+D

**Capacity**: 24 channels (“virtual” lines/trunks) for voice and analog data or for digital data only (T1); or 23 B-channels for voice and data, and 1 channel used for signaling (PRI). Supports networking in Hybrid/PBX mode only.
**Mode**: Multiplexes up to 24 channels into 1 facility and demultiplexes 1 facility into up to 24 channels.
**Speed**: Up to 64 kbps
**Signaling**: DS1 over 4-wire; common channel is not an option for T1; PRI uses 23 B+D

**Capacity**: 4 analog tie trunks. Supports networking in Hybrid/PBX mode only
**Method of completion**: Automatic start, immediate-start, wink-start, or delay-dial-start
**Signaling**: E&M type 1S, type 1C, type 5

**Control Unit Modules—***Continued*

| Module | Trunk Type | Extension Type |
|---|---|---|
| 408 GS/LS-ID-MLX[1] | Loop-start or ground-start | 1 PFT telephone; Caller ID |
| 412 LS-ID-TDL[1] | Loop-start | 1 PFT telephone; Caller ID |

1 Firmware can be upgraded by using a PCMCIA card.

**Specifications**

**Capacity**: 4 ground-start and/or loop-start lines/trunks, 8 digital extension jacks for MLX extensions, including:

- MLX voice only
- MLX voice with Voice Announce
- MLX voice and MFM with T/R adjunct
- MLX voice and MFM with SSA
- ISDN terminal adapter only
- Access device for data communications between a PC on the system and a high-speed Internet connection, connection to remote node LAN access server, or ISDN router
- CTI link
- Videoconferencing systems using one jack and 2B data feature or 2 jacks with ISDN terminal adapters (depending on video system)

**Extension signaling**: BRI S/T protocol (two 64-kbps B channels, one 16-kbps D channel) on a passive bus
**Trunk signaling**: Loop-start or ground-start trunk (optional per port), analog voice
**Loop range**: 3000 feet (914 m), in-building or in-range out-of-building (with MLX IROB protectors) only. If adjuncts (MFM or DSS) are used, auxiliary power must be in place
**Protocol:** Requires calling name and/or number identification service from central office

**Capacity**: 4 loop-start lines/trunks, 12 digital extension jacks for TDL extensions, and 4 TTRs. Access device for data communications between a PC on the system and a high-speed Internet connection, connection to remote node LAN access server, or ISDN router
**Extension signaling**: BRI S/T protocol (two 64-kbps B channels, one 16-kbps D channel) on a passive bus
**Trunk signaling**: Loop-start trunk (optional per port), analog voice
**Loop range**: 3000 feet (914 m), in-building or in-range out-of-building (with IROB protectors) only. If DSS is used, auxiliary power must be in place
**Protocol:** Requires calling name and/or number identification service from central office

**Control Unit Modules—***Continued*

| Module | Trunk Type | Extension Type |
|---|---|---|
| 800 DID | Direct Inward Dialing and TTR | N/A |
| 800 GS/LS-ID | Loop-start or ground-start | 2 PFT telephones; Caller ID (loop-start trunks only), if you subscribe to caller identification from the local telephone company, displays the number of incoming callers and the name of incoming callers as well, on MLX, MLS, TransTalk 9031/9040, Business Cordless 905, and ETR display telephones |
| 800 NI-BRI | T1 NI-BRI interface | Voice, data, video, and other services at 64 kbps over standard ISDN lines/trunks |
| MERLIN Messaging[1] | none | MERLIN Messaging System resides on this module |

1 The system assigns 12 logical IDs and extensions to the MERLIN Messaging module. The first 6 are available for use as MERLIN Messaging ports and the 12$^{th}$ is used by the Remote Maintenance Device (RMD). The 7$^{th}$ –11$^{th}$ are not used and are not available for other tip/ring devices or applications.

| Specifications |
| --- |
| **Capacity**: 8 lines/trunks, 2 TTRs<br>**Transmission**: Incoming calls only; 2-way (1-pair) fixed impedance to DID trunks; no outgoing calls<br>**Signaling**: Loop-reverse battery; wink-start or immediate-start; accepts touch-tone dialing |
| **Capacity**: 8 ground-start and/or loop-start lines/trunks; 2 TTRs<br>**Signaling**: Loop-start or ground-start<br>**Protocol**: Requires calling name and/or number identification service from central office |
| **Capacity**: 8 BRI facilities, each with 2 B-channels (“virtual” lines) for voice and data and 1 channel used for signaling<br>**Speed**: Up to 64 kbps<br>**Signaling**: ISDN Basic Rate 2B+D |
| **Capacity**: 7 internal, system-defined T/R jacks; 2 TTRs; internal remote maintenance device; serial port for PC connection |

## Adjunct Summary

| Equipment Type | Specifications | Avaya Products |
|---|---|---|
| Alerts (AC)[1] | ■ Any audible or visual alert that operates on 20–30 Hz ringing signals.<br>■ Associated with a specific extension (supplemental alert) or works on a programmed trunk port (external alert). | External Ringer—Loud<br>External Ringer |
| Alerts (DC) | ■ Any audible or visual alert that operates on 48-VDC signals.<br>■ Associated with a specific extension (supplemental alert) or works on a programmed trunk port (external alert).<br>**Note:** 48-VDC is supplied via the white/green pair on an MFM in SSA mode | Alert bell<br>Alert horn<br>Alert strobe<br>Alert chime<br>Alert deluxe horn<br>Alert switch |
| Answer/ record machine[1] | ■ Industry-standard machine.<br>■ Low ringer equivalence (less than 0.15 or (4.0 total REN for T/R port.)<br>■ Ability to recognize 600-ms disconnect signal or other means of automatic disconnect (such as voice reset disconnect timer, fixed recording time). | Model 1300 Answering Machine<br>Model 1531 Remote Answering System telephone |

1 Cannot be connected to a QCC.

| Interface | | |
|---|---|---|
| **LS or GS/LS** | **T/R** | **MFM** |
| **Line/Trunk Jack** | **T/R Extension Jack[1]** | **MLX Extension Jack** |
| | ✓ | ✓ |
| ✓ | | ✓ |
| | ✓ | ✓ |

1 T/R jacks on a 016 T/R module or jacks programmed for T/R operation on a 016 ETR module.

**Adjunct Summary—***Continued*

| Equipment Type | Specifications | Avaya Products |
|---|---|---|
| Cordless Telephone[1] | ■ Must have touch-tone dialing capability when connected via MFM; rotary or touch-tone dialing can be used on T/R port.<br>■ Single line. | 5650 Cordless Telephone<br>5481 Cordless Telephone<br>5552 Cordless Telephone |
| Credit Card Verification Terminal[1] | ■ Must have touch-tone dialing capability when connected via MFM; rotary or touch-tone dialing can be used on T/R port. | N/A |
| Dial Dictation[1] | ■ A device that requires contact closure can be used on LS/GS line jack only with UPAM. | N/A |
| Direct Station Selector | ■ A maximum of 2 DSSs can be connected to an operator console.<br>■ A 4499-PWR power unit must be added to a 4400-Series operator console having 1 or 2 DSSs.<br>■ A 329A power unit must be added to an MLX operator console having 2 DSSs.<br>■ Connects to DSS jack on operator console. | Direct Station Selector (DSS) |

1 Cannot be connected to a QCC.

| Interface | | |
|---|---|---|
| **LS or GS/LS** | **T/R** | **MFM** |
| **Line/Trunk Jack** | **T/R Extension Jack[1]** | **MLX Extension Jack** |
| | ✓ | ✓ |
| | ✓ | ✓ |
| ✓ | ✓ | ✓ |
| | | |

1 T/R jacks on a 016 T/R module or jacks programmed for T/R operation on a 016 ETR module.

**Adjunct Summary**—*Continued*

| Equipment Type | Specifications | Avaya Products |
|---|---|---|
| Fax[1] | ■ Must have touch-tone dialing capability when connected via MFM; rotary or touch-tone dialing can be used on T/R port.<br>■ Industry-standard analog interface. | |
| Group Calling Delay Announcement[1] | ■ Industry-standard announcement device.<br>■ Must provide automatic disconnect.<br>■ Each calling group can have its own announcement (maximum 32). Each calling group can have 10 primary announcement devices and 1 secondary announcement device.<br>■ A device can provide delay announcement for more than one group. | Model 1330 Answering Machine<br><br>Digital Announcement Device, Model 18A for single unit; Model 15A for 4-port unit |

1 Cannot be connected to a QCC.

| Interface | | |
|---|---|---|
| **LS or GS/LS** | **T/R** | **MFM** |
| **Line/Trunk Jack** | **T/R Extension Jack[1]** | **MLX Extension Jack** |
| | ✓ (can also use 008 OPT Extension Jack) | ✓ |
| | ✓ | ✓ |

1 T/R jacks on a 016 T/R module or jacks programmed for T/R operation on a 016 ETR module.

**Adjunct Summary**—*Continued*

| Equipment Type | Specification | Avaya Products |
|---|---|---|
| Headset for 4400-Series and MLX telephones | (N/A) | Starset<br>Mirage<br>Supra<br>Supra NC<br>Tristar Ultra<br>Encore Ultra |
| Headset Adapter | ■ Connects directly to telephone OTHER jack. | |
| Loudspeaker Paging | ■ External paging system using DTMF signaling connected to LS or GS line jack.<br>■ CPE paging systems require an interface unit; if CPE has 2-wire input, the PagePal interface (5335-700) can be used. | PagePac Plus Amplicenters D20, D100, D300<br>PagePac Plus Controller<br>PagePac 6<br>PagePac 6 Plus |
| Message Waiting Indicator | ■ For single-line telephones.<br>■ Connects directly to telephone. | Z34A (PEC 3 1032) |
| Modem | ■ If the modem supports touch-tone dialing via the associated data terminal, the keyboard can be used for dialing.<br>■ If the modem does not support touch-tone dialing, an associated basic (single-line) telephone can be used for dialing. | |

| Interface | | |
|---|---|---|
| **LS or GS/LS** | **T/R** | **MFM** |
| **Line/Trunk Jack** | **T/R Extension Jack[1]** | **MLX Extension Jack** |
| | | |
| | | |
| ✓ | | |
| | ✓ | |
| | ✓ | ✓ |

1 T/R jacks on a 016 T/R module or jacks programmed for T/R operation on a 016 ETR module.

**Adjunct Summary**—*Continued*

| Equipment Type | Specifications | Avaya Products |
|---|---|---|
| Music-On-Hold[1] | ■ Any FCC-registered 8-ohm music source or recorded announcement device. | Magic On Hold |
| Speakerphone | ■ Connect directly to telephone.<br>■ For single-line telephones only. | 203A (PEC 3131-008) |
| SMDR Printer | ■ Connects to upper RS-232-C jack on processor module.<br>■ Must be located within 50 feet (15 m) of control unit or use ADU to extend distance. | CAT Terminal printers |

1 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). Or you can purchase a Magic on Hold system, which does not require you to obtain such a license, from Avaya or an authorized dealer.

| Interface | | |
|---|---|---|
| **LS or GS/LS** | **T/R** | **MFM** |
| **Line/Trunk Jack** | **T/R Extension Jack[1]** | **MLX Extension Jack** |
| ✓[2] | | |
| | ✓ | |
| | | |

1 T/R jacks on a 016 T/R module or jacks programmed for T/R operation on a 016 ETR module.
2 Music Coupler required (PEC 61398).

## Power Supply Unit Load Requirements

### Unit Load Calculation Rules

| Mode | Installed Modules | Calculation |
|---|---|---|
| Hybrid/PBX, Modified Key, or Behind Switch | 6 | Not required. |
| Square Key or Behind Switch | 5 or more | Use the "Unit Load Rating of System Modules" table and the instructions below to determine the estimated unit loads (ULs):<br>■ If ULs > 96, reconfigure the system so that the total ULs does not exceed 96 per carrier.<br><br>For more information on unit load calculation, refer to Appendix F of *System Planning*. |

### Unit Load Rating of System Modules

| Module | Unit Load | Module | Unit Load |
|---|---|---|---|
| 008 MLX | 13.5 | 400 E&M | 8.0 |
| 008 OPT | 8.0 | 408 GS/LS-ID-MLX | 13.5 |
| 016 ETR | 24 | 412 LS-ID-TDL | 13.0 |
| 016 T/R | 12.8 | 800 GS/LS-ID | 0.0 |
| 016 MLX | 27 | 800 DID | 8.0 |
| 024 TDL | 24 | 800 NI-BRI | 0.0 |
| 100D/100DCD | 0.0 | Processor | 0.0 |
| 100R INA | 0.0 | MERLIN Messaging | 0.0 |

K Key mode
P Hybrid/PBX mode
B Behind Switch mode

## Telephone and Operator Features for Multiline 4400-Series and TransTalk 9040 (on a TDL Port) Telephones

| Feature | Program Code | Feature Code |
|---|---|---|
| Account Code Entry | *82 | 82 + code |
| Alarm [2] | *759 | |
| Alarm Clock | | |
| Authorization Code | *80 | 80 |
| Auto Dial | | |
| Inside (ext., group, zone) | *22 + ext. no. | |
| Outside | *21 + tel. no. | |
| Automatic Line Selection | | |
| Begin Sequence | *14 | |
| End Sequence | **14 | |
| Barge-In [2, 3, 4] | *58 | |
| Call Screening[3, 5] | *89 | |
| Call Waiting | | |
| On | *11 | |
| Off | **11 | |
| Call Waiting Pickup | | 87 |
| Callback | | |
| Automatic | | |
| On | *12 | |
| Off | **12 | |
| Selective | *55 | 55 |
| Cancel selective | | *55 |
| Caller ID Number/ Name Toggle Button | *763 | 763 |
| Camp-On | *57 | 57 |
| Conference | *772 | 772 |
| Coverage | | |
| Cover inside and outside calls | *48 **48 | |
| Cover outside calls only | | |
| Receiver Buttons | *42 + ext. no. | |
| Group | *40 + ext. no. | |
| Primary | *41 + ext. no. | |
| Secondary | | |
| Sender Buttons | | |
| Coverage Off | *49 | |
| Coverage VMS Off | *46 | |
| Direct Voice Mail | *56 | 56 |
| Directories | | |
| Extension Directory | (display only) | |
| Personal Directory | (display only) | |
| System Directory | (sys. prog.) | |
| Do Not Disturb | *47 | |
| Drop | *771 | 771 |
| 4400-Series Drop | *787 | 787 |

| TransTalk 9040, 4406D+[2] | 4412D+, 4424D+ | 4424LD+ |
|---|---|---|
| KPB | KPB | KPB |
| | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| B | B | B |
| KPB | KPB | KPB |
| KPB<br>KPB<br>KPB | KPB<br>KPB<br>KPB | KPB<br>KPB<br>KPB |
| KPB<br>KPB | KPB<br>KPB | KPB<br>KPB |
| KP | KP | KP |
| KPB<br>KPB | KPB | KPB<br>KPB<br>KPB |
| KPB | KPB | KPB |
| B<br>KPB | B<br>KPB | B<br>KPB |

## Telephone and Operator Features for Multiline 4400-Series and TransTalk 9040 (on a TDL Port) Telephones—*Continued*

| Feature | Program Code | Feature Code |
|---|---|---|
| Extension Status | | |
| Direct-Line Console[6] | | |
| Status Off | *760 | 760 + DSS button |
| Status 1 | *761 | 761 + DSS button |
| Status 2 | *762 | 762 + DSS button |
| Auxiliary Work Time[4] | *767 | 767 + DSS button |
| Telephones (rooms or agents) | | |
| Status Off: | | |
| All Calling Groups to which ext. assigned | *44 | *44 |
| Individual Calling Group | *765 | 765 + * |
| Status 1/ACW[4] | *45 | 45 |
| Status 2: | | |
| All Calling Groups to which ext. assigned | *44 | 44 |
| Individual Calling Group | *764 | 764 + Clg. Grp ext. |
| Auxiliary Work Time[4] | *766 | 766 + Clg. Grp ext. |
| Feature Button | *20 | 20 |
| Forward and Follow Me | | |
| Activate | | |
| Forward (inside) | *33 | 33 + ext. no. |
| Remote Call Forward (outside) | *33 | 33 + tel. no. |
| Remote Call Forward with Simultaneous Internal Alert[5] | *33 | 33# + tel. no. + # |
| Centrex Transfer via Remote Call Forward | *33 + dial-out code or *+ optional pauses + tel. no. + # | |
| Follow Me | | 34 + ext. no. |
| Cancel | | |
| Cancel sending from your telephone | | 33 + your ext. no. |
| Cancel sending from one extension | | *34 + ext. no. |
| Cancel sending from all extensions | | *34* |

| TransTalk 9040, 4406D+[2] | 4412D+, 4424D+ | 4424LD+ |
|---|---|---|
| | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |

## Telephone and Operator Features for Multiline 4400-Series and TransTalk 9040 (on a TDL Port) Telephones—*Continued*

| Feature | Program Code | Feature Code |
|---|---|---|
| Group Calling | | |
| In-Queue Alarm Button | *22 + calling group ext. no. | |
| Calling Group Supervisor[3] | | |
| Enter supervisor mode[3] | | 32 + Hold |
| Enter selective supervisor mode[4] | | 32 + Clg. Grp. ext. |
| Exit supervisor mode [3] | | 32 + Drop |
| In Supervisor Mode: | | |
| Log ext. out of all Clg. Grps to which assigned (ES Status Off) | *760 | 760 + DSS button |
| After Call Work[4] (ES Status 1) | *761 | 761 + DSS button |
| Log ext. into all Clg. Grps to which assigned (ES Status 2) | *762 | 762 + DSS button |
| Auxiliary Work Time[4] | *767 | 767 + DSS button |
| In Selective Supervsr. Mode[4]: | | |
| Log ext. out of individual Calling Group.(ES Status Off) | *760 | 760 + DSS button |
| Log ext. into individual Calling Group (ES Status 2) | *762 | 762 + DSS button |
| Auxiliary Work Time[4] | *767 | 767 + DSS button |
| Calling Group Members | | |
| Log into all Clg. Grps. (Available) | *44 | 44 |
| Log out of all Calling. Groups (Unavailable) | *44 | *44 |
| Release 2.1 and later: | | |
| After Call Work | *45 | 45 |
| Log into indiv. Calling. Group | *764 | 764 + Calling Group ext. |
| Log into all Clg. Grps to which assigned | *44 | 764 + * |
| Log out of indiv. Calling. Group | *44 | 765 + Calling Group ext. |
| Log out of all Clg. Grps to which assigned | *44 | 765 + * |
| Auxiliary Work Time | *766 | 766 + Calling Group ext. |
| Activate Agent ID[7] | *768 | 768 + Agent ID + # |
| Deactivate Agent ID[7] | | 768 + # |
| Group Page Auto Dial button | *22 + Paging Group ext. no. | |

| TransTalk 9040[1], 4406D+[2] | 4412D+, 4424D+ | 4424LD+ |
|---|---|---|
| KPB | KPB | KPB |
| | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |

## Telephone and Operator Features for Multiline 4400-Series and TransTalk 9040 (on a TDL Port)

### Telephones—*Continued*

| Feature | Program Code | Feature Code |
|---|---|---|
| Headset Options[2] | | |
| Auto Answer | *780 | |
| Hang Up [6] | *781 | |
| Mute (Headset/Handset) | *783 | |
| Status | *782 | |
| HFAI Button | *779 | 779 |
| Hold | | 771 |
| Hold Release | | ** |
| Inspect Button[2] | *778 | 778 |
| Intercom Buttons | | |
| Assign Buttons | | |
| ICOM (Default Ring) | *16 | |
| ICOM Originate Only | *18 | |
| Change Button Type | | |
| Ring | **19 | |
| Voice | *19 | |
| Language Choice | | |
| English | | 790 |
| French | | 791 |
| Spanish | | 792 |
| Messaging | | |
| Leave Message | | |
| After calling | *25 | 25 |
| Without calling | | 53 + ext. no. |
| Cancel message left | | *53 + ext. no. |
| Message LED off | *54 | 54 |
| Posted Message | *751 | |
| Send/Remove Message[2] | *38 | 38 + ext. no. |
| Receiving Messages | | |
| Delete Messages | *26 | 26 |
| Next Message | *28 | 28 |
| Return Call | *27 | 27 |
| Scroll | *29 | 29 |
| Night Service[3] | *39 | 39 |
| Notify[2] | | |
| Send | *757 + ext. no. | |
| Receive | *758 + ext. no. | |
| Paging | | |
| Group Paging | | |
| Loudspeaker Paging | | |
| Park | *86 | |
| Park Zone Auto Dial[3] | *22 + Park Zone | |
| Personal Speed Dial | # + (01-24) + *21 + tel no. + ## | |
| Personalized Ringing | *32 + ring (1–8) | |

| TransTalk 9040[1], 4406D+[2] | 4412D+, 4424D+ | 4424LD+ |
|---|---|---|
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| B | B | B |
| B | B | B |
| KPB | KPB | KPB |
| KB | KB | KB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| | KPB | KPB |
| KPB | | |
| KPB | KPB | KPB |

## Telephone and Operator Features for Multiline 4400-Series and TransTalk 9040 (on a TDL Port) Telephones—*Continued*

| Feature | Program Code | Feature Code |
|---|---|---|
| Pickup | | |
| General Use | *9 | |
| Specific Extension | *9 + ext. no. | 9 + ext. no. |
| Specific Line | *9 + line no. | 9 + line no. |
| Group | *88 | 88 |
| Privacy | | |
| On | *31 | 31 |
| Off | | *31 |
| Recall[2] | *775 | 775 |
| Redial[2] | *84 | 84 |
| Reminder Service | | |
| Set[3] | *81 | 81 + time + A or P |
| Operator Set[3, 7] | | 81 + ext. no. + time + A or P |
| Cancel | **81 | *81 |
| Operator Cancel[3] | | *81 + ext. no. |
| Missed[2] | *752 | |
| Ringing/Idle Line Preference | | |
| On | *343 | |
| Off | *344 | |
| Ringing Options | | |
| Individual Lines | | |
| Immediate ring | *37 | |
| Delay ring | *36 | |
| No ring | *35 | |
| All Lines | | |
| Immediate ring | *347 | |
| Delay ring | *346 | |
| No ring | *345 | |
| Abbreviated Ring | | |
| On | *341 | |
| Off | *342 | |
| Send Ring (Shared SA) | | |
| On | *15 | |
| Off | **15 | |
| Saved Number Dial | *85 | |
| Service Observing[3] | *59 | |
| Signal (manual)[2] | *23 + ext. no. | |
| System Access Buttons | | |
| Assign buttons[3] | | |
| SA (Default Ring) | *16 | |
| SA Originate Only | *18 | |
| Shared SA | *17 + primary ext. no. | |
| Change type (SA or Shared SA) | | |
| Ring | **19 | |
| Voice | *19 | |
| System Speed Dial | *24 + code (600-729) | 600-729 |

| TransTalk 9040[1], 4406D+[2] | 4412D+, 4424D+ | 4424LD+ |
|---|---|---|
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| P | P | P |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| KPB | KPB | KPB |
| P | P | P |
| KPB | KPB | KPB |

## Telephone and Operator Features for Multiline 4400-Series and TransTalk 9040 (on a TDL Port)

### Telephones—*Continued*

| Feature | Program Code | Feature Code |
|---|---|---|
| Transfer | *774 | 774 |
| Voice Announce[3] | | |
| On | *10 | |
| Off | **10 | |

1 You cannot select features from the display of a 4406D+ telephone.
2 System operator feature only.
3 Not on TransTalk 9040 telephone connected to a TDL port.
4 Release 2.1 and later systems only.
5 Release 2.2 and later systems only.
6 Centralized telephone programming only.
7 U.S. English only; time is 12-hour (0100–1159) + 2 (A) or 7 (P). French and Spanish: time is 24-hour (0000–2359).
5 Centralized telephone programming only.
6 U.S. English only; time is 12-hour (0100–1159) + 2 (A) or 7 (P). French and Spanish: time is 24-hour (0000–2359).
6 Release 3.0 and later systems only.

| TransTalk 9040[1], 4406D+[2] | 4412D+, 4424D+ | 4424LD+ |
|---|---|---|
| B | KP | B |
| KPB | KPB | KPB |

K Key mode
P Hybrid/PBX mode
B Behind Switch mode

## Telephone Features for 4400, 4400D, and Single-Line Telephones

| Feature | Program Code | Feature Code | 4400, 4400D<5> | Single-Line |
|---|---|---|---|---|
| Account Code Entry | *82 | 82 + code | KPB | KP |
| Authorization Code | *80 | 80 | KPB | KPB |
| Call Waiting | | | KPB | KPB |
| On | *11 | | | |
| Off | **11 | | | |
| Call Waiting Pickup | | 87 | | |
| Callback | | | KPB | KPB |
| Automatic | | | | |
| On | *12 | | | |
| Off | **12 | | | |
| Selective | *55 | 55 | | |
| Cancel Selective | | *55 | | |
| Caller ID Name[2] | *763 | 763 | KPB | N/A |
| Camp-On | *57 | 57 | KPB | KPB |
| Conference | *772 | 772 | B | B |
| Coverage | | | KPB | KPB |
| Cover Inside and Outside Calls | | | | |
| Cover Outside Calls only | | | | |
| Receiver Buttons | | | | |
| Group | | | KPB | KPB |
| Primary | | | KPB | KPB |
| Secondary | | | KPB | KPB |
| Direct Voice Mail | *56 | 56 | KP | KP |
| Directories | | | | |
| System Directory | (sys. prog.) | | KPB | KPB |
| Extension Status Telephones (rooms or agents) | | | KPB | KPB |
| Status Off: | | | | |
| All Calling Groups to which ext. assigned | *44 | *44 | | |
| Individual Calling Group | *765<br>*45 | 765 + *<br>45 | | |
| Status 1/ACW[3] | | | | |
| Status 2: | | | | |
| All Calling Groups to which ext. assigned | *44 | 44 | | |
| Individual Calling Group | *764<br>*766 | 764 + Clg. Grp ext. | | |
| Auxiliary Work Time[3] | | 766 + Clg. Grp ext. | | |

## Telephone Features for 4400, 4400D, and Single-Line Telephones—*Continued*

| Feature | Program Code | Feature Code | 4400, 4400D<5> | Single-Line |
|---|---|---|---|---|
| Forward and Follow Me | | | KPB | KPB |
| Activate | | | | |
| Forward (inside) | | 33 + ext. no. | | |
| Remote Call Forward (outside) | | 33 + tel. no. | | |
| Remote Call Forward with Simultaneous Alert[4] | | 33# + tel. no. + # | | |
| Centrex Transfer via Remote Call Forward | *33 + dial-out code or *+ optional pauses + tel. no. + # | | | |
| Follow Me | | | | |
| Cancel | | 34 + ext. no. | | |
| Cancel sending from your telephone | | 33 + your ext. no. | | |
| Cancel sending from one extension | | *34 + ext. no. | | |
| Cancel sending from all extensions | | *34* | | |
| Group Calling | | | | |
| Calling Group Members | | | KPB | KPB |
| Log into all Clg. Grps. | *44 | 44 | | |
| Log out of all Calling Groups | *44 | *44 | | |
| Release 2.1 and later: | | | | |
| After Call Work | *45 | 45 | | |
| Log into indiv. Calling Group | *764 | 764 + Calling Group ext. | | |
| Log into all Clg. Grps to which assigned | *44 | 764 + * | | |
| Log out of indiv. Calling Group | *44 | 765 + Calling Group ext. | | |
| Log out of all Clg. Grps to which assigned | *44 | 765 + * | | |
| Auxiliary Work Time | *766 | 766 + Calling Group ext. | | |
| Release 3.0 and later: | | | | |
| Activate Agent ID | *768 | 768 + Agent ID + # | | |
| Deactivate Agent ID | | 768 + # | | |
| Hold | | 771 | PB | PB |
| Hold Release | | ** | PB | PB |
| Paging | | | KPB | KPB |
| Group Paging | | | | |
| Loudspeaker Paging | | | | |

## Telephone Features for 4400, 4400D, and Single-Line Telephones—*Continued*

| Feature | Program Code | Feature Code | 4400, 4400D<5> | Single-Line |
|---|---|---|---|---|
| Park | 4400 and single-line: Recall or Flash + your ext. 4400D: Trnsfr + your ext. + Trnsfr | | KPB | KPB |
| Personal Speed Dial | # + (01-24) + *21 + tel. no. + ## | | KPB | KPB |
| Pickup | | | KPB | KPB |
| General Use | | | | |
| Specific Extension | | 9 + ext. no. | | |
| Specific Line | | 9 + line no. | | |
| Group | | 88 | | |
| Privacy | | | KPB | KPB |
| On | | 31 | | |
| Off | | *31 | | |
| Recall | | 775 | KPB | KPB |
| Redial | | 84 | KPB | KPB |
| Reminder Service | | | KPB | KPB |
| Set [5] | | 81 + time + A or P | | |
| Cancel | | *81 | | |
| Ringing/Idle Line Preference | | | KPB | KPB |
| On | *343 | | | |
| Off | *344 | | | |
| Ringing Options | | | | |
| Individual Lines | | | KPB | KPB |
| Immediate ring | *37 | | | |
| Delay ring | *36 | | | |
| No ring | *35 | | | |
| System Speed Dial | | 600-729 | KPB | KPB |
| Transfer | | 774 | B | B |

1 You cannot select a feature from the display of a 4400D telephone.
2 4400D telephone only.
3 Release 2.1 and later systems only.
4 Release 2.2 and later systems only.
5 U.S. English only: time is 12-hour (0100-1259) + 2 (A) or 7 (P). French and Spanish: time is 24-hour (0000-2359).
4

K Key mode
P Hybrid/PBX mode
B Behind Switch mode

## Telephone Features for ETR, MLS, TransTalk 9031/9040 (on an ETR Port), and Business Cordless 905 Telephones

| Feature | Program Code | Feature Code | ETR | MLS |
|---|---|---|---|---|
| Account Code Entry | *82 | 82 + code | KPB | KPB |
| Authorization Code | *80 | 80 | KPB | KPB |
| Auto Dial | | | KPB | KPB |
| Inside (ext., group, zone) | *22 + ext. no. | | | |
| Outside | *21 + tel. no. | | | |
| Automatic Line Selection | | | KPB | KPB |
| Begin Sequence | *14 | | | |
| End Sequence | **14 | | | |
| Barge-In<5> | *58 | | KPB | KPB |
| Call Screening (R2.2 and later) | *89 | | KPB | KPB |
| Call Waiting | | | KPB | KPB |
| On | *11 | | | |
| Off | **11 | | | |
| Call Waiting Pickup | | 87 | | |
| Callback | | | KPB | KPB |
| Automatic | | | | |
| On | *12 | | | |
| Off | **12 | | | |
| Selective | *55 | 55 | | |
| Caller ID Number/ Name Toggle Button | *763 | 763 | KPB | KPB |
| Camp-On | *57 | 57 | KPB | KPB |
| Conference | *772 | 772 | B | B |
| Contrast<5> | | | | |
| Coverage | | | KPB | KPB |
| Cover Inside and Outside Calls | *48 | | | |
| Cover Outside Calls Only | **48 | | | |
| Receiver Buttons | | | | |
| Group | *42 + ext. no. | | KPB | KPB |
| Primary | *40 + ext. no. | | KPB | KPB |
| Secondary | *41 + ext. no. | | KPB | KPB |
| Sender Buttons | | | | |
| Coverage Off | *49 | | KPB | KPB |
| Coverage VMS Off | *46 | | KPB | KPB |
| Data Status | *83 + ext. no. | | KPB | KPB |
| Direct Voice Mail | *56 | 56 | KPB | KPB |
| Do Not Disturb | *47 | | KPB | KPB |
| Drop | *773 | 773 | B | B |
| ETR Drop Button | *777 | 777 | KPB | KPB |

## Telephone Features for ETR, MLS, TransTalk 9031/ 9040 (on an ETR Port), and Business Cordless 905 Telephones—*Continued*

| Feature | Program Code | Feature Code | ETR | MLS |
|---|---|---|---|---|
| Forward and Follow Me | | | KPB | KPB |
| Activate | | | | |
| Forward (inside) | *33 | 33 + ext. no. | | |
| Remote Call Forward (outside) | *33 | 33 + tel. no. | | |
| Remote Call Forward with Simultaneous Alert (R2.2 and later) | *33 | 33 + tel. no. + # | | |
| Centrex Transfer via Remote Call Forward | *33 + dial-out code or *+ optional pauses + tel. no. + # | | | |
| Follow Me | | 34 + ext. no. | | |
| Cancel | | | | |
| Cancel sending from your telephone | | 33 + your ext. no. | | |
| Cancel sending from one extension | | *34 + ext. no. | | |
| Cancel sending from all extensions | | *34* | | |
| Group Calling | | | KPB | KPB |
| In-Queue Alarm Button | *22 + Calling Group ext. no. | | | |
| Calling Group Members | | | KPB | KPB |
| Log into all Clg. Grps. | *44 | 44 | | |
| Log out of all Calling Groups | *44 | *44 | | |
| Release 2.1 and later: | | | | |
| After Call Work | *45 | 45 | | |
| Log into indiv. Calling Group | *764 | 764 + Calling Group ext. | | |
| Log into all Clg. Grps to which assigned | *44 | 764 + * | | |
| Log out of indiv. Calling Group | *44 | 765 + Calling Group ext. | | |
| Log out of all Clg. Grps to which assigned | *44 | 765 + * | | |
| Auxiliary Work Time | *766 | 766 + Calling Group ext. | | |
| Release 3.0 and later: | | | | |
| Activate Agent ID | *768 | 768 + Agent ID + # | | |
| Deactivate Agent ID | | 768 + # | | |
| Group Page Auto Dial Button | *22 + Paging Group ext. no. | | KPB | KPB |
| Hold | | 771 | B | B |
| Hold Release | | ** | B | B |

## Telephone Features for ETR, MLS, TransTalk 9031/ 9040 (on an ETR Port), and Business Cordless 905 Telephones—*Continued*

| Feature | Program Code | Feature Code | ETR | MLS |
|---|---|---|---|---|
| Intercom Buttons | | | KPB | KPB |
| Assign Buttons[5] | | | | |
| ICOM (Default Ring) | *16 | | | |
| ICOM Originate Only | *18 | | | |
| Change Button Type | | | | |
| Ring | **19 | | | |
| Voice | *19 | | | |
| Language Choice | | | KPB | KPB |
| English | | 790 | | |
| French | | 791 | | |
| Spanish | | 792 | | |
| Messaging | | | | |
| Leave Message | *25 | | KPB | KPB |
| After calling | | 25 | KPB | KPB |
| Without calling | | 53 + ext. no. | KPB | KPB |
| Cancel message left | | *53 + ext. no. | KPB | KPB |
| Message LED Off (non-display telephones) | *54 | 54 | KPB | KPB |
| Message Operation Mode (display telephones)[5] | *54 | 54 | KPB | KPB |
| Posted Message | *751 | | KPB | KPB |
| Receiving Messages | | | | |
| Delete Message[5] | *26 | 26 | KPB | KPB |
| Next Message[5] | *28 | 28 | KPB | KPB |
| Return Call[5] | *27 | 27 | KPB | KPB |
| Scroll[5] | *29 | 29 | KPB | KPB |
| Notify[5] | | | KPB | KPB |
| Send | *757 + ext. no. | | | |
| Receive | *758 + ext. no. | | | |
| Paging | | | KPB | KPB |
| Group Paging | | | | |
| Loudspeaker Paging | | | | |
| Park | *86 | | KPB | KPB |
| Personal Speed Dial | # + (01-24) + *21 + tel. no. + ## | | KPB | KPB |
| Personalized Ringing | *32 + ring (1–8) | | KPB | KPB |
| Pickup | | | KPB | KPB |
| General Use | *9 | | | |
| Specific Extension | *9 + ext. no. | 9 + ext. no. | | |
| Specific Line | *9 + line no. | 9 + line no. | | |
| Group | *88 | 88 | | |
| Privacy | | | KPB | KPB |
| On | *31 | 31 | | |
| Off | | *31 | | |
| Recall[5] | *775 | 775 | KPB | KPB |
| Redial[5] | *84 | 84 | KPB | KPB |

## Telephone Features for ETR, MLS, TransTalk 9031/ 9040 (on an ETR Port), and Business Cordless 905 Telephones—*Continued*

| Feature | Program Code | Feature Code | ETR | MLS |
|---|---|---|---|---|
| Reminder Service | | | KPB | KPB |
| Set[5] | *81 | 81 + time + A or P | | |
| Cancel | **81 | *81 | | |
| Ringing/Idle Line Preference | *343 | | KPB | KPB |
| On | *344 | | | |
| Off | | | | |
| Ringing Options | | | KPB | KPB |
| Individual Lines[5] | | | KPB | KPB |
| Immediate ring | *37 | | KPB | KPB |
| Delay ring | *36 | | KPB | KPB |
| No ring | *35 | | KPB | KPB |
| All Lines | | | KPB | KPB |
| Immediate ring | *347 | | KPB | KPB |
| Delay ring | *346 | | KPB | KPB |
| No ring | *345 | | KPB | KPB |
| Abbreviated Ring | | | KPB | KPB |
| On | *341 | | KPB | KPB |
| Off | *342 | | KPB | KPB |
| Send Ring (Shared SA) | | | P | P |
| On | *15 | | P | P |
| Off | **15 | | P | P |
| Saved Number Dial | *85 | | KPB | KPB |
| Signal (manual) | *23 + ext. no. | | KPB | KPB |
| System Access Buttons | | | P | P |
| Assign Buttons[5] | | | | |
| SA (Default Ring) | *16 | | P | P |
| SA Originate Only | *18 | | P | P |
| Shared SA | *17 + primary ext. no. | | P | P |
| Change Type (SA or Shared SA) | | | | |
| Ring | **19 | | KPB | KPB |
| Voice | *19 | | KPB | KPB |
| System Speed Dial | *24 + code (600-729) | 600-729 | KPB | KPB |
| Transfer | *774 | 774 | B | B |
| Voice Announce | | | KPB | KPB |
| On | *10 | | | |
| Off | **10 | | | |

1 Centralized telephone programming only.
2 Press the * button and use the volume up and down key; for ETR telephones only.
3 For 4406D+, ETR, and MLS display telephone users, pressing *54 enters/ exits Message operation mode. MLS telephones return to normal call handling after 15 seconds if the user has no messages. If an MLS telephone user has messages, he or she must delete the messages or use the feature code or programmed button to exit Message operation. A 4406D+ or ETR telephone user must use the feature code or the programmed button to exit Message operation whether or not he or she has messages.

4 Display telephones only. Programming and feature codes are used with ETR, TransTalk 9031/9040, Business Cordless 905, and MLS telephones.
5 Not on TransTalk 9031/9040 or Business Cordless 905 telephones.
6 U.S. English only: time is 12-hour (0100-1259) +2 (A) or 7 (P). French and Spanish: time is 24-hour (0000-2359).
7 With Immediate Ring (steady red LED), incoming calls are immediately delivered. With Delay Ring (slow red LED), incoming calls are delayed (default is 2 rings). With No Ring (LED off), no calls are delivered.

K Key mode
P Hybrid/PBX mode
B Behind Switch mode

## Telephone and Operator Features for MLX Telephones

| Feature | Program Code | Feature Code |
|---|---|---|
| Account Code Entry | *82 | 82 + code |
| Alarm[1] | *759 | |
| Alarm Clock | | |
| Authorization Code | *80 | 80 |
| Auto Dial | | |
| Inside (ext., group, zone) | *22 + ext. no. | |
| Outside | *21 + tel. no. | |
| Automatic Line Selection | | |
| Begin Sequence | *14 | |
| End Sequence | **14 | |
| Barge-In[1,2] | *58 | |
| Call Screening | *86 | |
| Call Waiting | | |
| On | *11 | |
| Off | **11 | |
| Call Waiting Pickup | | 87 |
| Callback | | |
| Automatic | | |
| On | *12 | |
| Off | **12 | |
| Selective | *55 | 55 |
| Cancel selective | | *55 |
| Caller ID Number/ Name Toggle Button | *763 | 763 |
| Camp-On | *57 | 57 |
| Conference | *772 | 772 |
| Contrast | | |
| Coverage | | |
| Cover inside and outside calls | *48 **48 | |
| Cover outside calls only | | |
| Receiver Buttons | *42 + ext. no. | |
| Group | *40 + ext. no. | |
| Primary | *42 + ext. no. | |
| Secondary | | |
| Sender buttons | *49 | |
| Coverage Off | *46 | |
| Coverage VMS | | |
| Off | | |
| Data Status | *83 + ext. no. | |
| Direct Voice Mail | *56 | 56 |
| Directories | | |
| Extension Directory | (display only) | |
| Personal Directory | (display only) | |
| System Directory | (sys. prog.) | |
| Do Not Disturb | *47 | |
| Drop | *773 | 773 |

| MLX-5D, MLX-10D | MLX-16DP, MLX-28D | MLX-20L | MLX-5, MLX-10 |
|---|---|---|---|
| KPB | KPB | KPB | |
| | KPB | KPB | |
| KPB | KPB | KPB | |
| KPB | KPB | KPB | |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | PB |
| KPB | KPB | KPB | KPB |
| B | B | B | B |
| KPB | KPB | KPB | |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KP | KP | KP | KP |
| KPB | KPB | KPB | |
| | | KPB | |
| KPB | KPB | KPB | |
| KPB | KPB | KPB | KPB |
| B | B | B | B |

## Telephone and Operator Features for MLX Telephones—*Continued*

| Feature | Program Code | Feature Code |
|---|---|---|
| Extension Status | | |
| Direct-Line Console[1] | | |
| Status Off | *760 | 760 + DSS button |
| Status 1 | *761 | 761 + DSS button |
| Status 2 | *762 | 762 + DSS button |
| Auxiliary Work Time[4] | *767 | 767 + DSS button |
| Telephones (rooms or agents) | | |
| Status Off: | | |
| All Calling Groups to which ext. assigned | *44 | *44 |
| Individual Calling Group[3] | *765 | 765 + * |
| Status 1/ACW[4] | *45 | 45 |
| Status 2: | | |
| All Calling Groups to which ext. assigned | *44 | 44 |
| Individual Calling Group[3] | *764 | 764 + Clg. Grp ext. |
| Auxiliary Work Time[3] | *766 | 766 + Clg. Grp ext. |
| Forward and Follow Me | | |
| Activate | | |
| Forward (inside) | *33 | 33 + ext. no. |
| Remote Call Forward (outside) | *33 | 33 + tel. no. |
| Remote Call Forward with Simultaneous Alert (R2.2 and later) | | 33# + tel. no. + # |
| Centrex Transfer via Remote Call Forward | *33 + dial-out code or *+ optional pauses + tel. no. + # | |
| Follow Me | | 34 + sending ext. no. |
| Cancel | | |
| Cancel sending from your telephone | | 33 + ext. no. |
| Cancel sending from one extension | | *34 + ext. no. |
| Cancel sending from all extensions | | *34* |

| MLX-5D, MLX-10D | MLX-16DP, MLX-28D | MLX-20L | MLX-5, MLX-10 |
|---|---|---|---|
| | KPB | KPB | |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |

## Telephone and Operator Features for MLX Telephones—*Continued*

| Feature | Program Code | Feature Code |
|---|---|---|
| Group Calling | | |
| In-Queue Alarm button | *22 + calling group ext. no. | |
| Calling Group Supervisor[1] | | |
| Enter supervisor mode[1] | | 32 + Hold |
| Enter selective supervisor mode[4] | | 32 + Clg. Grp. ext. |
| Exit supvsr/sel. supvsr.[3] mode [1] | | 32 + Drop |
| In Supervisor Mode: | | |
| Log ext. out of all Clg. Grps to which assigned (ES Status Off) | *760 | 760 + DSS button |
| After Call Work[3] (ES Status 1) | *761 | 761 + DSS button |
| Log ext. into all Clg. Grps to which assigned (ES Status 2) | *762 | 762 + DSS button |
| Auxiliary Work Time[4] | *767 | 767 + DSS button |
| In Selective Supervsr. Mode[4]: | | |
| Log ext. out of individual Calling Group.(ES Status Off) | *760 | 760 + DSS button |
| Log ext. into individual Calling Group (ES Status 2) | *762 | 762 + DSS button |
| Auxiliary Work Time[3] | *767 | 767 + DSS button |
| Calling Group Members | | |
| Log into all Clg. Grps. (Available) | *44 *44 | 44 *44 |
| Log out of all Calling. Groups (Unavailable) | | |
| Release 2.1 and later: | | |
| After Call Work | *45 | 45 |
| Log into indiv. Calling. Group | *764 | 764 + Calling Group ext. |
| Log into all Clg. Grps to which assigned | *44 | 764 + * |
| Log out of indiv. Calling. Group | *44 | 765 + Calling Group ext. |
| Log out of all Clg. Grps to which assigned | *44 | 765 + * |
| Auxiliary Work Time | *766 | 766 + Calling Group ext. |
| Release 3.0 and later: | | |
| Activate Agent ID | *768 | 768 + Agent ID + # |
| Deactivate Agent ID | | 768 + # |

| MLX-5D, MLX-10D | MLX-16DP, MLX-28D | MLX-20L | MLX-5, MLX-10 |
|---|---|---|---|
| KPB | KPB | KPB | KPB |
| | KPB | KPB | |
| KPB | KPB | KPB | KPB |

## Telephone and Operator Features for MLX

### Telephones—*Continued*

| Feature | Program Code | Feature Code |
|---|---|---|
| Group Page Auto Dial button | *22 + paging group ext. no. | |
| Headset Options | | |
| Auto Answer | *780 | |
| Hang Up[2] | *781 | |
| Mute (Headset/Handset) | *783 | |
| Status | *782 | |
| Hold | | 771 |
| Hold Release | | ** |
| Intercom Buttons | | |
| Assign Buttons[2] | | |
| ICOM (Default Ring) | *16 | |
| ICOM Originate Only | *18 | |
| Change Button Type | | |
| Ring | **19 | |
| Voice | *19 | |
| Language Choice | | |
| English | | 790 |
| French | | 791 |
| Spanish | | 792 |
| Messaging | | |
| Leave Message | *25 | |
| After calling | | 25 |
| Without calling | | 53 + ext. no. |
| Cancel message left | | *53 + ext. no. |
| Message LED off | *54 | 54 |
| Posted Message | *751 | |
| Send/Remove Message[1] | *38 | 38 + ext. no. |
| Receiving Messages | | |
| Delete Messages[4] | *26 | 26 |
| Next Message[4] | *28 | 28 |
| Return Call[4] | *27 | 27 |
| Scroll[4] | *29 | 29 |
| Night Service[1] | *39 | 39 |
| Notify | | |
| Send | *757 + ext. no. | |
| Receive | *758 + ext. no. | |
| Paging | | |
| Group Paging | | |
| Loudspeaker Paging | | |
| Park | *86 | |
| Park Zone Auto Dial[1] | *22 + Park Zone | |
| Personal Speed Dial | # + (01-24) + *21 + tel no. + ## | |
| Personalized Ringing | *32 + ring (1–8) | |

| MLX-5D, MLX-10D | MLX-16DP, MLX-28D | MLX-20L | MLX-5, MLX-10 |
|---|---|---|---|
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| PB<br>B | PB<br>B | PB<br>B | PB<br>B |
| K B | K B | K B | K B |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | |
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| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| | KPB | KPB | |
| KPB | | | KPB |
| KPB | KPB | KPB | KPB |

## Telephone and Operator Features for MLX Telephones—*Continued*

| Feature | Program Code | Feature Code |
|---|---|---|
| Pickup | | |
| General use | *9 | |
| Specific extension | *9 + ext. no. | 9 + ext. no. |
| Specific line | *9 + line no. | 9 + line no. |
| Group | *88 | 88 |
| Privacy | | |
| On | *31 | 31 |
| Off | | *31 |
| Recall | *775 | 775 |
| Redial | *84 | 84 |
| Reminder Service | | |
| Set[5] | *81 | 81 + time + A or P |
| Operator Set[1,5] | | 81 + ext. no. + time + A or P |
| Cancel | **81 | *81 |
| Operator Cancel[1] | | *81 + ext. no. |
| Missed[1] | *752 | |
| Ringing/Idle Line Preference | | |
| On | *343 | |
| Off | *344 | |
| Ringing Options | | |
| Individual Lines | | |
| Immediate ring | *37 | |
| Delay ring | *36 | |
| No ring | *35 | |
| All Lines | | |
| Immediate ring | *347 | |
| Delay ring | *346 | |
| No ring | *345 | |
| Abbreviated Ring | | |
| On | *341 | |
| Off | *342 | |
| Send Ring (Shared SA) | | |
| On | *15 | |
| Off | **15 | |
| Saved Number Dial | *85 | |
| Service Observing[2] | *59 | |
| Signal (manual) | *23 + ext. no. | |
| System Access Buttons | | |
| Assign buttons[2] | | |
| SA (Default Ring) | *16 | |
| SA Originate Only | *18 | |
| Shared SA | *17 + primary ext. no. | |
| Change type (SA or Shared SA) | | |
| Ring | **19 | |
| Voice | *19 | |

| MLX-5D, MLX-10D | MLX-16DP, MLX-28D | MLX-20L | MLX-5, MLX-10 |
|---|---|---|---|
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| P | P | P | P |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| KPB | KPB | KPB | KPB |
| P | P | P | P |

## Telephone and Operator Features for MLX Telephones—*Continued*

| Feature | Program Code | Feature Code |
|---|---|---|
| System Speed Dial | *24 + code (600-729) | 600-729 |
| Transfer | *774 | 774 |
| Voice Announce | | |
| On | *10 | |
| Off | **10 | |
| VA on Idle Only | *130 | |

1 System operator features only.
2 Centralized telephone programming only.
3 Release 2.1 and later systems only.
4 Display telephones only.
5 U.S. English only: time is 12-hour (0100-1259) + 2 (A) or 7 (P). French and Spanish: time is 24-hour (0000-2359).

| MLX-5D, MLX-10D | MLX-16DP, MLX-28D | MLX-20L | MLX-5, MLX-10 |
|---|---|---|---|
| KPB | KPB | KPB | KPB |
| B | B | B | B |
| KPB | KPB | KPB | KPB |

**System Feature Availability by Operating Mode**

| | Mode | | |
|---|---|---|---|
| **Feature** | **PBX** | **Key** | **Behind Switch** |
| Account Code Entry | ✓ | ✓ | ✓ |
| Account Code Verification[1] | ✓ | ✓ | ✓ |
| Authorization Codes | ✓ | ✓ | ✓ |
| Automatic Configuration of MERLIN Messaging System | ✓ | ✓ | ✓ |
| Automatic Daylight Savings Time | ✓ | ✓ | ✓ |
| Automatic Maintenance Busy | ✓ | ✓ | ✓ |
| Automatic Route Selection | ✓ | | |
| Callback | ✓ | ✓ | ✓ |
| Calling Restrictions | ✓ | ✓ | ✓ |
| Centralized Voice Messaging | ✓ | | |
| Centrex Transfer via Remote Call Forwarding | ✓ | ✓ | ✓ |
| Copy Options for Lines/Trunks | ✓ | ✓ | ✓ |
| Coverage | ✓ | ✓ | ✓ |
| Coverage VMS Off | ✓ | ✓ | ✓ |
| CTI Link | ✓ | | |
| Delayed Ring interval | ✓ | ✓ | ✓ |
| Direct Inward Dialing | ✓ | | |
| Direct-Line Console options | ✓ | ✓ | ✓ |
| Direct Voice Mail | ✓ | ✓ | |
| Directory | ✓ | ✓ | ✓ |
| Extension Status | ✓ | ✓ | ✓ |
| Feature Button | ✓ | ✓ | ✓ |
| Forced Account Code Entry | ✓ | ✓ | ✓ |
| Group Calling[2] | ✓ | ✓ | ✓ |
| Hands-Free Answer Intercom (HFAI) | ✓ | ✓ | ✓ |
| Headset Status | ✓ | ✓ | ✓ |
| Hold disconnect | ✓ | ✓ | ✓ |
| Hot Dialpad (R2.2 and later) | ✓ | ✓ | ✓ |
| Inside dial tone | ✓ | ✓ | ✓ |
| Inspect | ✓ | ✓ | ✓ |
| Labeling | ✓ | ✓ | ✓ |
| Language selection | ✓ | ✓ | ✓ |
| Loudspeaker Paging | ✓ | ✓ | ✓ |

**System Feature Availability by Operating Mode**—*Continued*

| | Mode | | |
|---|---|---|---|
| **Feature** | **PBX** | **Key** | **Behind Switch** |
| Microphone Disable | ✓ | ✓ | ✓ |
| Music-On-Hold<br>System<br>Group Calling[1] | ✓ | ✓ | ✓ |
| Night Service | ✓ | ✓ | ✓ |
| Paging groups | ✓ | ✓ | ✓ |
| Park | ✓ | ✓ | ✓ |
| Pickup groups | ✓ | ✓ | ✓ |
| Pools (trunk groups) | ✓ | | |
| Queued Call Console options | ✓ | | |
| Recall | ✓ | ✓ | ✓ |
| Redial | ✓ | ✓ | ✓ |
| Reminder Cancel | ✓ | ✓ | ✓ |
| Remote Access | ✓ | ✓ | ✓ |
| Remote Call Forward | ✓ | ✓ | ✓ |
| Service Observing | ✓ | ✓ | ✓ |
| Station Message Detail Recording | ✓ | ✓ | ✓ |
| System Numbering | ✓ | ✓ | ✓ |
| System Restart | ✓ | ✓ | ✓ |
| System Speed Dial | ✓ | ✓ | ✓ |
| Tandem Trunking | ✓ | ✓ | ✓ |
| Toll Type | ✓ | ✓ | ✓ |
| Touch-tone or rotary signaling | ✓ | ✓ | ✓ |
| Transfer options | ✓ | ✓ | ✓ |
| Uniform Dial Plan (UDP) | ✓ | | |
| Voice Announce | ✓ | ✓ | ✓ |
| Volume | ✓ | ✓ | ✓ |

1 Release 3.0 and later
2 Non-local members may be assigned to calling groups in Hybrid/PBX mode only.

## Reference Documents

| Document Number No. | |
|---|---|
| 555-730-110 | *Feature Reference* |
| 555-730-112 | *System Planning* |
| 555-730-113 | *System Planning Forms* |
| 555-730-119 | *System Manager's Quick Reference* |
| 555-661-150 | *Network Reference* |
| 555-730-800 | *Customer CD-ROM:* Contains the *System Manager's Quick Reference, Feature Reference (print version), Feature Reference Online Tool, System Planning (with forms), Pocket Reference, and Installation, System Programming Basics and Maintenance and Troubleshooting.* |
| **Telephone User Support** | |
| 555-710-123 (U.S. English) | *4400/4400D Telephone User's Guide* |
| 555-710-123FRC (Canadian French) | *4400/4400D Telephone User's Guide* |
| 555-710-127 (U.S. English) | *4406D+/4412D+/4424D+/4424LD+ Telephone User's Guide* |
| 555-710-127FRC (Canadian French) | *4406D+/4412D+/4424D+/4424LD+ Telephone User's Guide* |
| 555-660-122 | *MLX Display Telephones User's Guide* |
| 555-630-150 | *MLX-5D, MLX-10D and MLX-10DP Display Telephone Tray Cards* (5 cards) |
| 555-630-152 | *MLX-28D and MLX-20L Telephone Tray Cards* (5 cards) |
| 555-660-124 | *MLX-5®and MLX®-10 Nondisplay Telephones User's Guide* |
| 555-630-151 | *MLX-5 and MLX-10 Nondisplay Telephone Tray Cards* (6 cards) |
| 555-630-155 | *MLX-16DP Display Telephone Tray Cards* (5 cards) |
| 555-670-151 | *MLS and ETR Telephone Tray Cards* |
| 555-670-152 | *MLS and ETR Telephone Tray Cards* (16 cards) |
| 555-660-126 | *Single-Line Telephones User's Guide* |
| 555-660-138 | *MDC and MDW Telephones User's Guide* |
| **System Operator Support** | |
| 555-710-134 | *Digital Direct Line Console Operator's Guide* |
| 555-710-136 | *Digital Queued Call Console Operator's Guide* |
| **Miscellaneous User Support** | |
| 555-661-130 | *Calling Group Supervisor and Service Observer User Guide* |
| 555-650-105 | *Data and Video Reference* |
| 555-730-140 *Troubleshooting* | *Installation, Programming Basics, Maintenance and* |
| 555-730-116 | *Pocket Reference* |
| **Toll Fraud Security** | |
| 555-025-600 | *BCS Products Security Handbook* |

## How to Comment on This Guide

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Documentation Manager
Avaya Inc.
211 Mount Airy Road, Room 2E-116
Basking Ridge, New Jersey 07920

## Maintenance Error Codes

| Error Code | Description | Action |
|---|---|---|
| 0001 | TIMEOUT COLD START: System programming OK. | No action required; however, if problem persists, troubleshoot the processor. |
| 0002 | POWER UP WARM START: System programming OK. | No action required; however, if problem persists, troubleshoot the processor. |
| 0003 | SOFTWARE COLD START: System programming OK. | If problem persists, troubleshoot the processor. |
| 0004 | SOFTWARE WARM START: System programming OK. | If problem persists, troubleshoot the processor. |
| 0005 | Reset - DIAGNOSTIC SWITCH: | |
| 0006 | INCOMPLETE COLD START: System cold-started while restart in progress. | If problem persists, troubleshoot the processor. |
| 0007 | SANITY TIMEOUT RESET: Faulty software, module, carrier, or processor sanity timer. | Check module and/or processor. |
| 0008 | MAX RESET COUNT EXCEEDED: System cold-started because of too many warm starts. | If problem persists, troubleshoot the processor. |
| 0009 | FRIGID START: System restarted and initialized to defaults; also logged after System Erase. | If processor was removed while in use, system may perform frigid start because of loss of system programming. Restore system as described in *System Programming and Maintenance (SPM)*. |
| 000A | POWER UP COLD START: RAM failure in processor; system programming OK. | If problem persists, check processor. |
| 000B | CARD INSERTED/REMOVED: | None. |
| 000C | SLOT STREAM CNT EXCEEDED: Slot generated excessive interrupts. or The system was powered down incorrectly; for example, carrier 2 was powered down before carrier 1. If errors exist because of the improper power-down, no action is required. | If problem persists, check module. |

## Maintenance Error Codes—*Continued*

| Error Code | Description | Action |
|---|---|---|
| 000D | FMWR NOT IN STANDBY MODE:<br>Module firmware not in standby mode. | If problem persists, check module. |
| 000E | COMMAND BUFFER FULL: | If problem persists, check processor and module. |
| 000F | TASK RUNNING TOO LONG | None; if problem persists, check processor. |
| 00DE | MERLIN Messaging System (M1000) was upgraded. | None. |
| 0010 | INVALID SLOT INTERRUPT:<br>Cannot determine module responsible for interrupt.<br>or<br>The system was powered down incorrectly; for example, carrier 2 was powered down before carrier 1. If errors exist because of the improper power-down, no action is required. | Check modules and replace if necessary; if problem persists, check processor. |
| 0011 | STACK OVERFLOW:<br>Processor problem. | Check processor. |
| 0012 | INVALID RESET FLAG:<br>Processor problem. | Check processor. |
| 0013 | DUART STREAMING INT:<br>Processor problem.<br>or<br>The system was powered down incorrectly. If errors exist because of the improper power-down, no action is required. | Check processor. |
| 0014 | PROCESSOR ERR INTERRUPT:<br>Processor problem. | Check processor. |
| 0015 | MODULE MISMATCH:<br>Module inserted into wrong slot. | Change system programming for proper module or install proper module. |
| 0016 | POWER UP COLD START:<br>Module dual port ram failure; system programming OK. | If problem persists, check module for slot indicated. |
| 0017 | REAL TIME CLOCK FAULT:<br>Date and/or time incorrect or unreadable. | If problem persists, replace processor module. |
| 0018 | RTC COLD START:<br>This error is not displayed. | |

## Maintenance Error Codes—*Continued*

| Error Code | Description | Action |
|---|---|---|
| 0019 | RESET TIME & DATE:<br>System cold-starts because real-time clock chip is not working correctly. | If problem persists, replace processor module. |
| 0401 | ABK CARD NOT INSERTED:<br>PCMCIA memory card for translation is not inserted. | Insert a translation card or an unformatted card. |
| 0402 | ABK INCORRECT CARD TYPE:<br>PCMCIA memory card for non-translation is inserted. | Remove current card and insert a translation card or an unformatted card. |
| 0403 | ABK CARD WRITE-PROTECTED:<br>Translation card has write-protected switch on. | Turn write-protection switch to off. If problem persists, try another card. If still not working, replace processor module. |
| 0404 | ABK EXTENSION BUSY:<br>A station is in program, administration, or maintenance mode. | Wait until station changes mode. |
| 0405 | ABK FAULTY CARD:<br>Unknown cause of a bad card. | Reset card and retry. If problem persists, try another card. If still not working, replace processor module. |
| 0801 and 1C07 and 5801 | CTI LINK DELETED:<br>A board renumber or slot restore moved the CTI link to an unacceptable port and the system has removed the link. | Check that the following are true:<br>■ The system is in Hybrid/PBX mode.<br>■ The link is on a 008 MLX or 408 MLX board.<br>■ The MLX board firmware vintage is not 29.<br>■ The extension is not an operator position.<br>■ An MLX telephone is not connected to that port.<br>■ Board renumber has not moved the MLX extension to the system programming port. |
| 0802 | E911 OVERFLOW:<br>One of the following has occurred:<br>■ All lines assigned to the E911 Partition or Adjunct are busy or bad.<br>■ No lines are assigned to E911 Partition or Adjunct.<br>■ No physical line is connected to the system, the network, or the E911 Adjunct. | Do the following:<br>■ Make sure the proper number of trunks are assigned to E911 Partition or Adjunct.<br>■ Assign lines to E911 Partitions or Adjunct.<br>■ Check that ground-start or loop-start trunks are connected to the E911 Adjunct.<br>■ Check the network interface connection.<br>When the condition returns to normal, the external alarm turns off automatically. You must remove the entry from the permanent error log. |

## Maintenance Error Codes—*Continued*

| Error Code | Description | Action |
|---|---|---|
| 0C01 | NO I-VMS PORT IN SERV: vms machine may be down. | None |
| 0C02 | DID INTERDIGIT TIMEOUT: Noisy line or central office problem. | None; if problem persists, check DID line and inform Central Office, if necessary. |
| 0C03 | ALL TTRs UNAVAILABLE: System needed to use a TTR, but one was not available for any and all reasons including: in use, not physically present, out of service. | Check count and first and last occurrences to determine if error occurs too frequently. If so, check to see if you can add TTRs to the system.<br>If prompt out of queue is active, shorten the delay announcement message length.<br>If prompt out of queue feature and secondary announcement(s) are active, increase the interval between the announcements.<br>If you reprogram the delay announcement device, recheck it to verify that the problem no longer exists. |
| 0C04 | MWL Fac Timeout: Two consecutive messages to update Message Waiting lights have been sent across the private network for the same tandem trunk and have not been acknowledged. When this happens three times, the error becomes permanent. The alarm remains in the log until a message is acknowledged or five days pass. | Check the error log for additional error codes. If the error log also contains errors indicating problems with the 100 DS1 and/or 400 E&M module, troubleshoot the 100 DS1 and/or the 400 E&M module (see Chapter 4 of *Maintenance and Troubleshooting)*.<br>If the 100 DS1 and/or the 400 E&M module are functioning properly, troubleshoot the trunks using instructions in Chapter 5 of *Maintenance and Troubleshooting*. |

## Maintenance Error Codes—*Continued*

| Error Code | Description | Action |
|---|---|---|
| 0C05 | MWL Delivery Delay:<br>A message to update the Message Waiting lights has exceeded the time period for delivery. A transient alarm occurs after one minute, and a permanent alarm occurs after 15 minutes. The alarm remains in the error log until a message is delivered or five days pass. | Check the error log for additional error codes. If the error log also contains errors indicating problems with the 100 DS1 and/or 400 E&M module, troubleshoot the 100 DS1 and/or the 400 E&M module using instructions in Chapter 4 of *Maintenance and Troubleshooting*. If the 100 DS1 and/or the 400 E&M module are functioning properly, troubleshoot the trunks using instructions in Chapter 5 of *Maintenance and Troubleshooting*. Check that the system receiving the message had enough TTRs to handle the volume of calls. Check the error log on the sending system and then on the receiving system. More facilities or TTRs may be needed. |
| 1C01 | POOL M-BUSY EXCEEDS 50%:<br>more than half the trunks in pool are busy. | Check trunk. |
| 1C02 | DPR TEST NOT COMPLETED: | Slot did not complete initializing. |
| 1C03 | FW UPGRADE ATTEMPT: | No action required. |
| 1C04 | FW UPGRADE COMPLETE | No action required. |
| 1C05 | INVALID FMW 29 DETECTED:<br>Incompatibility problem; specified video endpoint or UDM is connected to a 008 or 408 MLX module with firmware of vintage 0x29. | Replace 008 or 408 MLX module with one of another firmware vintage. Retire permanent alarm manually. |
| 1C06 | BAD BOARDS IN SYSTEM:<br>At least one incompatibility problem of type HER 0x1C05 detected. Turns on red LED on processor. | Replace 008 or 408 MLX module with one of another firmware vintage. Retire permanent alarm manually. |
| 1C07 | See error code 0801 | |
| 1C08 | BAD TTR:<br>Touch-Tone receiver failed the internal Touch-Tone Receiver Test. | If TTR passes the next test, the system automatically restores it. |
| 1C09 | TTR BUSY-OUT EXCEEDS 50%:<br>50% or more TTRs have been busied out. | Check the modules containing the TTRs. Try to manually restore some TTRs. If necessary, replace the modules. |

## Maintenance Error Codes—*Continued*

| Error Code | Description | Action |
|---|---|---|
| 2C01 | T1 ACCESS VIOLATION: T1 services (channels-voice/ data) programmed incorrectly. | Check facility provisioning and re-administer channels for voice or data. Ensure that T1 data facilities are accessed from data terminals only (such as UDMs or desktop video systems) and that T1 voice facilities are accessed from telephones only (such as MLX telephones). |
| 2C02 | Bearer Capability Incompatibility: A 64 kbps clear-channel data call was routed to a facility that does not have sufficient bandwidth to handle the call. | Verify that the ARS or UDP routing tables route a data call to a DS1 facility. Check the DS1 Type administration item for the specified facility. If the programmed value is T1, the caller must initiate a 56 kbps call. Check the DS1 Suppression administration item for the specified facility. If the programmed value is AMI-ZCS, the caller must initiate a 56 kbps call. |
| 3001 | ALARM TABLE FULL: error logs are full; turns on processor led. | Correct indicated errors, and then remove entries from the transient system error log. If problem persists, cold-start the system. SysProgram→System→ Restart |
| 4001 | E911 ADJUNCT OOS: The E911 Adjunct has detected an error condition (such as the disconnection of the trunk cable). This error condition has caused an E911 Adjunct alarm, and the trunks connected to the E911 Adjunct are in the Trunk Maintenance Busy state. | Check the E911 Adjunct to make sure it is in working condition. Check the cable connections to this unit.<br><br>The alarm and Trunk Maintenance Busy state automatically clear when the E911 Adjunct returns to normal operation. |
| 4401 | USER REQUESTED SYS ERASE: Logged after System Erase. If System Erase is successful, this error is removed immediately. | If error remains in transient log, repeat System Erase. If problem persists, check processor. |
| 4402 | USER REQST UPGRD/INSTALL: | None. |
| 4C01 | POOL EMPTY: System needed to use a trunk in a pool but no trunks were physically present in the pool—i.e., all of the boards were removed from the system. | Replace boards. |

## Maintenance Error Codes—*Continued*

| Error Code | Description | Action |
|---|---|---|
| 4C02 | POOL BUSY:<br>System needed to use a trunk in a pool. Trunks are physically present; however, none are idle and available for use—i.e., they may be in use or out of service. | |
| 4C03 | POOL BUSY &/OR OOS:<br>System needed to use a trunk in a pool. Trunks are physically present; some may be busy but some are idle. However, the idle trunks are not in service. | Restore if out of service. |
| 5801 | See error code 0801 | |
| 5802 | Board Renumber<br>Board renumber took place. | If the system is functioning properly, simply remove the error from the Transient Error Log. If the system is not functioning properly, check the Transient Error Log to verify that a board renumber took place. Then compare the system's previous configuration to the one after board renumbering to determine if the board renumber caused logical IDs to shift. |
| 6C01 | DS1 LOSS OF SIGNAL ALARM:<br>Service on link has been lost. | Usually no action. Check T1 facility. If problem persists, contact NSAC Tier III. |
| 6C02 | DS1 BLUE ALARM:<br>All 1s being received; service on link has been lost. | Usually no action. Check T1 facility. If problem persists, contact NSAC Tier III. |
| 6C03 | DS1 RED ALARM:<br>Invalid framing information on incoming signal; service on link has been lost. | Usually no action. Check T1 facility. If problem persists, contact NSAC Tier III. |
| 6C04 | DS1 YELLOW ALARM:<br>Far end of network interface has lost frame synchronization; service on link has been lost. | Usually no action. Check T1 facility. If problem persists, contact NSAC Tier III. |
| 6C05 | DS1 LOSS OF MULTIFRAME:<br>Service on link has been lost. | Usually no action. Check T1 facility. If problem persists, contact NSAC Tier III. |
| 6C06 | DS1 REMOTE MULTIFRAME:<br>Far end of network interface is experiencing loss of multiframe; service on link has been lost. | Usually no action. Check T1 facility. If problem persists, contact NSAC Tier III. |

## Maintenance Error Codes—*Continued*

| Error Code | Description | Action |
|---|---|---|
| 6C07 | DS1 MAJOR ALARM: Average bit error rate exceeds 10E-3; service on link has been lost. | Usually no action. Check T1 facility. If problem persists, contact NSAC Tier III. Maintenance→Slot→ Error Events→ Current hr |
| 6C08 | DS1 MINOR ALARM: Average bit error rate exceeds 10E-6. | Usually no action. Check T1 facility. If problem persists, contact NSAC Tier III. Maintenance→Slot→ Error Events→ Current hr |
| 6C09 | DS1 MISFRAME ALARM: Misframe count reached 18. | Usually no action. Check T1 facility. If problem persists, contact NSAC Tier III. Maintenance→Slot→ Error Events→ Current hr |
| 6C0A | DS1 SLIP ALARM: Slip count reached 88. | Usually no action. Check T1 facility. If problem persists, contact NSAC Tier III. Maintenance→Slot→ Error Events→ Current hr |
| 6C0B | HARDWARE INOPERATIVE: Hardware not operating properly. If this is the only 100 DS1 module or 800 NI-BRI module, or if this is the designated clock module, its tdm bus clock generator was not activated. | A Busy-Out/Restore or Reset/ Restore may clear problem. If problem persists, contact NSAC Tier III. |
| 6C0C | BRI LOSS OF SYNC: Service on link has been lost. | Usually none; check BRI facility. If problem persists, contact NSAC Tier III. |
| 6C0D | BRI SLIPS > 88: Slip count > 88. Service on link is still operative. | Usually none; check BRI facility. If problem persists, contact NSAC Tier III. |
| 6C0E | BRI NET REQUESTED CCRCs: Outgoing signal to the network does not have valid framing information. Service on link is still operative. | Usually none; link should return to normal once test is completed. If problem persists, contact NSAC Tier III. |
| 6C0F | BRI NET DEACTIVATE: Layer 1 of the link is down. Service on link has been lost. | Usually none; link should return to normal once test is completed. If problem persists, contact NSAC Tier III. |
| 6C10 | BRI NET INV 2B+D LB ACT: Service on link has been lost. | Usually none; link should return to normal once test is completed. If problem persists, contact NSAC Tier III. |

## Maintenance Error Codes—*Continued*

| Error Code | Description | Action |
|---|---|---|
| 6C11 | BRI NET INV B1 LB ACT: Service on link has been lost. | Usually none; link should return to normal once test is completed. If problem persists, contact NSAC Tier III. |
| 6C12 | BRI NET INV B2 LB ACT: Service on link has been lost. | Usually none; link should return to normal once test is completed. If problem persists, contact NSAC Tier III. |
| 6C13 | BRI NET INV IL LB ACT: Service on link has been lost. | Usually none; link should return to normal once test is completed. If problem persists, contact NSAC Tier III. |
| 6C14 | BRI NET INV QM LB ACT: Service on link has been lost. | Usually none; link should return to normal once test is completed. If problem persists, contact NSAC Tier III. |
| 7001 | PRI SVC AUDIT TIMEOUT: | Check PRI facility and report to service provider; otherwise, no action is needed. If problem persists, contact NSAC Tier III. |
| 7002 | PRI SVC STATE INCONSIST: | Check PRI facility and report to service provider; otherwise, no action is needed. If problem persists, contact NSAC Tier III. |
| 7003 | PRI D-CHNL INOPERATIVE: | Check PRI facility and report to service provider; otherwise, no action is needed. If problem persists, contact NSAC Tier III. |
| 7004 | PRI B-CHNL NOT RELEASED: | Check PRI facility and report to service provider; otherwise, no action is needed. If problem persists, contact NSAC Tier III. |
| 7005 | PRI B-CH GROUP INCONSIST: | Check PRI facility and report to service provider; otherwise, no action is needed. If problem persists, contact NSAC Tier III. |
| 7006 | PRI PROTOCOL MISMATCH: A mismatch in the protocol being supplied versus the protocol expected by the MERLIN MAGIX system. | Inform the service provider to change the administration for this circuit. After the service provider restarts the circuit, verify that all alarms for this slot are cleared. |
| 7401 | TRK UPLINK MESSAGE ERROR: Communication problems between processor and modules; unrecognized message from module to processor. | Test trunk with single-line telephone. If problem is not in trunk, replace module with one known to work. If problem is not seen with known working module, replace module and restart. |

## Maintenance Error Codes—*Continued*

| Error Code | Description | Action |
|---|---|---|
| 7402 | LOOP CONTROL BIT NOT SET:<br>No loop current on outgoing call. If error occurs four times consecutively, and if automatic maintenance-busy is enabled with less than 50% maintenance busy, trunk is busied-out automatically. | Test trunk with single-line telephone. If problem is not in trunk, replace module with one known to work. If problem is not seen with known working module, replace module and restart. |
| 7403 | NO LOOP CURRENT:<br>Communication problems between module and CO. No loop current. If error occurs four times consecutively, and if automatic maintenance-busy is enabled with less than 50% maintenance busy, trunk is busied-out automatically. | Test trunk with single-line telephone. If problem is not in trunk, replace module with one known to work. If problem is not seen with known working module, replace module and restart. |
| 7404 | STUCK RINGING:<br>Communication problems between module and CO. If error occurs two times consecutively, trunk is busied-out automatically whether or not automatic maintenance-busy is enabled. | Test trunk with single-line telephone. If problem is not in trunk, replace module with one known to work. If problem is not seen with known working module, replace module and restart. |
| 7801 | The MERLIN Messaging System (M1000) reset at 2:00 a.m.<br>or<br>The MERLIN Messaging System software was upgraded. | If the M1000 software was upgraded, no action is required. |
| 7802 | SANITY INT NOT GENERATED:<br>Applies only to modules with extension jacks.<br>or<br>The MERLIN Messaging System (M1000) software was upgraded. | Reset module. If problem persists, check module.<br><br>If the M1000 software was upgraded, no action is required. |
| 7803 | NO PORT BOARDS AVAILABLE:<br>Modules not present. | None; delete entry from transient log. |
| 7804 | INVALID SANITY RESPONSE:<br>Sanity test received invalid responses; applies only to modules with extension jacks.<br>or<br>The MERLIN Messaging System (M1000) software was upgraded. | Reset board. If problem persists, check module.<br><br>If the M1000 was upgraded, no action is required. |

## Maintenance Error Codes—*Continued*

| Error Code | Description | Action |
|---|---|---|
| 7805 | INVALID SLOT NUMBER:<br>Rare; software could not process an event detection because slot number was invalid. | None; if problem persists, restart system. |
| 7806 | NOT IN STANDBY MODE:<br>Reported during cold start or background check. | Reset board. If problem persists, check module. |
| 7807 | SELF TEST NOT COMPLETED:<br>Reported during cold start. | Reset board. If problem persists, check module. |
| 7808 | TEST RESULT REGISTER BAD:<br>A module or processor error during test run. | Reset board. If problem persists, check module. |
| 7809 | TEST STATUS REGISTER BAD:<br>A module or processor error during test run. | Reset board. If problem persists, check module. |
| 780A | DPR TEST NOT COMPLETED:<br>Reported during cold start. | If problem persists, check module. |
| 780C | RAM TEST FAILURE:<br>Memory failed ram test; turns on processor led. | If problem persists, replace processor. |
| 780D | UPPER ROM FAILURE:<br>Memory failed rom test; turns on processor led. | If problem persists, replace processor. |
| 780E | LOWER ROM FAILURE:<br>Memory failed rom test; turns on processor LED. | If problem persists, replace processor. |
| 8001 | UNEXPECTED ETR MESSAGE<br>Indicates one of the following:<br>■ An unsupported ETR telephone was connected.<br>■ An ETR/MLS telephone is faulty.<br>■ An ETR board is faulty.<br>■ The software is showing the message in error. | If a single user is complaining about an ETR/MLS telephone not working properly, check to be sure the telephone is a supported model. If the ETR/MLS telephone is supported, replace the faulty telephone.<br>If multiple ETR/MLS telephone users connected to the same ETR module are complaining that the telephones are not working properly, troubleshoot the module and replace it if necessary. If no users are complaining, simply clear the error. |
| 8401 | MISCELLANEOUS ERROR:<br>Not reported. | None. |

## Maintenance Error Codes—*Continued*

| Error Code | Description | Action |
|---|---|---|
| 8402 | WINK TOO SHORT: Outbound dialing problems on tie trunks. Wink from the far end of network interface is less than 100 ms, the minimum for delay-dial or wink-start tie trunks. Tie trunk waits for valid signal. | Check far end of network. Check for faulty cable. Replace module. |
| 8403 | NO EXTERNAL RELEASE: Communication problems between module and CO. Far end has not disconnected within 4 minutes. If error occurs twice consecutively, trunk is busied-out automatically whether or not automatic maintenance-busy is enabled. | Check far end of network interface. Check for faulty cable. |
| 8404 | ON HOOK BEFORE WINK: Outbound dialing problems on tie trunks. Far end of network interface went on-hook before handshake was completed (for delay-dial or wink-start tie trunk). | If problem persists, check tie trunk configuration. Check far end. Check for faulty cable. Replace module. |
| 8405 | ON HOOK BEFORE READY: Outbound dialing problems on tie trunks. Far end of network interface went on-hook before guard time elapsed (for delay-dial or wink-start tie trunk). | Check far end of network interface. Check wink start and for faulty cable. Check far end of network. Replace module. |
| 8406 | INTERDIGIT TOO SHORT: Inbound dialing problems on tie and DID trunks. | Check far end of network interface. Check for faulty cable. Replace module. |
| 8407 | BAD UPDATE: Communication problems between processor and modules; module may need to be replaced. | Turn processor off and then on. Repeat system programming procedure. If problem persists, contact NSAC Tier III. |
| 8408 | ROTARY RATE > 12PPS: Inbound dialing problems on tie and did trunks. | Check far end of network interface. Check for faulty cable. Replace module. |
| 8409 | ROTARY RATE < 8PPS: Inbound dialing problems on tie and did trunks. | Check far end of network interface. Check for faulty cable. Replace module. |

## Maintenance Error Codes—*Continued*

| Error Code | Description | Action |
|---|---|---|
| 8411 | E911 NO OUTGOING SEIZURE:<br>The system has tried to seize a trunk assigned either to E911 Partition or E911 Adjunct for a 911 call and cannot seize the trunk. The trunks assigned to the E911 Partition or to the E911 Adjunct go into a Trunk Maintenance Busy (TMB) state.<br>**NOTE:**<br>An E911 Partition trunk in a Trunk Maintenance Busy state can still be used to make and receive non-E911 calls. | For an E911 Partitions trunk, any one of the following can occur:<br>■ The trunk may automatically clear if the line is seized for an outgoing call.<br>■ Manually seize the trunk by dialing *03 and dialing some digits.<br>■ The trunk may automatically clear if the line is used for an incoming call.<br>■ The error message is dropped, and the trunk clears.<br>For an E911 Adjunct trunk, do the following:<br>■ Check the connections on the E911 adjunct. If the situation is corrected, the TMB state ends during the system's TMB recovery.<br>■ Manually drop the error message.<br>■ Manually seize the trunk by dialing *03.<br>*If you manually seize the E911 Adjunct trunk, the adjunct may place a call to the E911 Service.* |
| 840A | BAD DOWNLINK MESSAGE:<br>Communication problems between processor and modules; module received an unrecognized message from processor. | Turn processor off and then on. Repeat system programming procedure. If problem persists, replace module. |
| 840B | NO LOOP CURRENT:<br>Communication problems between module and CO; no loop current. If error occurs four times consecutively and if automatic maintenance-busy is enabled and maintenance-busy limit is less than 50%, trunk is busied-out automatically. | Replace module with similar module and test. If problem is resolved, replace bad module. If problem persists, reinstall old module and test trunk. |
| 840C | STUCK RINGING:<br>Communication problems between module and CO; no loop current. If error occurs four times consecutively and if automatic maintenance-busy is enabled and maintenance-busy limit is less than 50%, trunk is busied-out automatically. | Replace module with similar module and test. If problem is resolved, replace bad module. If problem persists, reinstall old module and test trunk. |

## Maintenance Error Codes—*Continued*

| Error Code | Description | Action |
|---|---|---|
| 840D | INCORRECT FIRMWARE STATE: If error occurs four times consecutively and if automatic maintenance-busy is enabled and maintenance-busy limit is less than 50%, trunk is busied-out automatically. | Turn power off for at least one second, and then turn it on. Repeat system programming procedure. If problem persists, replace module. |
| 840E | UPLINK MESSAGE ERROR: Communication problems between processor and modules. Module received unrecognized message from processor. | Turn processor off and then on. Repeat system programming procedure. If problem persists, replace module. |
| 840F | LOST IDLE MESSAGE ERROR: Loop start trunk lost an idle message during glare timing. | System has taken corrective action. If problem persists, contact NSAC Tier III. |
| 8C01 | SLOTS NOT EQUAL: Module that occupies indicated slot does not match slot information contained in PC or PCMCIA card backup file. | Check slot descriptions in backup file against actual system modules that occupy slots. After mismatch is corrected, restore. |
| 9801 | MCARD WRITE ERROR: Write to memory card is unsuccessful or too slow. | Reset card and try again. If problem persists, replace card and try again. If problem continues, replace processor module. |
| 9802 | MCARD ERASE ERROR: Erasure of memory card is unsuccessful or too slow. | Reset card and try again. If problem persists, replace card and try again. If problem continues, replace processor module. |
| 9803 | MCARD 12-VOLT ERROR: Memory card voltage is incorrect. | Reset card and try again. If problem persists, replace card and try again. If problem continues, replace processor module. |
| 9C01 | NW REJECTS SPID: Service on link has been lost. | Check programmed line. Modify if required, or call Central Office to correct. |
| 9C03 | LINK ESTABLISHMENT FAIL: Service on link has been lost. | Check that line is securely connected to port and that LEDs on module show proper operation. If card appears to work properly, line may not have been activated by Central Office. |
| 9C04 | NW NOT RESPOND TO SETUP: Service on link has been lost. | Network not responding to LEGEND messages. Contact Central Office. |
| 9C05 | NW NOT RESPOND TO RELEASE: Service on link has been lost. | Network not responding to LEGEND messages. Contact Central Office. |

## Maintenance Error Codes—*Continued*

| Error Code | Description | Action |
|---|---|---|
| 9C07 | ENDPOINT UNINIT (L2/L3): Service on link is uninitialized. | If this lasts more than three minutes, replug the DSL. If the error remains, contact Central Office. |
| 9C08 | PROTOCOL ERROR: Service on link may be affected. | Verify line provisioning. If correct, contact NSAC Tier III. |
| 00DE | MERLIN Messaging System (M1000) software was upgraded. | If the M1000 software was upgraded, no action is required. |
| A401 | CTI LINK BROADCAST RESET: Occurs during a broadcast reset. | If several of these occur:<br>■ Check that the system is in Hybrid/PBX mode.<br>■ Validate the wiring and the connections.<br>■ Press the Restart Button (see the procedure "Restart" in Chapter 4 of *Maintenance and Troubleshooting*).<br>■ Call the TSO's Telephony Services Maintenance Group (800 242-2121) for procedures to unload and reload the PBX driver. |
| A801 | CTI LINK HIDDEN RESET: Occurs during a hidden reset. | If several of these occur, and the client application has "slow" response time:<br>■ Validate the wiring and the connections.<br>■ Press the Restart Button (see the procedure "Restart" in Chapter 4 of *Maintenance and Troubleshooting*).<br>■ Call the TSO's Telephony Services Maintenance Group (800 242-2121) for procedures to unload and reload the PBX driver. |

## Telephone LEDs

### 4424LD+ or MLX-20L Console

| System Programming Menu Option | Option | LED Status Green LED ON | Green LED OFF | Red LED ON | Red LED OFF |
|---|---|---|---|---|---|
| Lines Trunks | Tie Lines | | | | |
| | Inmode | Incoming tie line is touch-tone | Incoming tie line is rotary dial[1] | | |
| | Outmode | Outgoing tie line is touch-tone | Outgoing tie line is rotary dial[1] | | |
| | Dialtone | Remote dial tone[1] | Local dial tone | | |
| Lines Trunks | TT/LS Disc | | | | |
| | Outmode | Line/trunk is touch-tone[1] | Line/trunk is rotary dial | | |
| Lines Trunks | Pools | | | Trunk is in pool | Trunk is not in pool |
| Lines Trunks | Toll Type | Must dial 1 + area code[1] | 1 + dialing is not needed | | |
| Lines Trunks | Hold Disconc | Long—450 ms[1] | Short—50 ms | | |
| Lines Trunks | LS-ID Delay | LS-ID Delay is on | LS-ID Delay is off[1] | | |
| Extensions | Lines Trunks | Line/trunk or pool is assigned to button | Line/trunk or pool is not assigned to button | Trunk is assigned to a pool | |

1 Factory setting

## Telephone LEDs—*Continued*

### DSS Console

| System Programming Menu | | Red LED Status | | |
|---|---|---|---|---|
| **Option** | **Option** | **ON** | **OFF** | **FLASHING** |
| Extensions | Account (FACE) | Forced Account Code Entry assigned | Forced Account Code Entry not assigned[1] | |
| Extensions | Call Pickup | Telephone is assigned to Call Pickup Group | Telephone is not assigned to Call Pickup Group[1] | |
| Extensions | VoiceSignl | Voice Announce assigned | Voice Announce not assigned[1] | |
| Extensions | Ext status | Extension Status assigned | Extension Status not assigned | Extension Status can be assigned |
| Extensions | Group Page | Telephone is in group | Telephone is not in group[1] | |
| Extensions | Group Cover | Telephone is in coverage group | Telephone is not in coverage group[1] | |
| Extensions | Group Calling Members | Telephone is assigned to group | Telephone is not assigned to group[1] | |
| Extensions | Mic Disable | Telephone microphone is disabled | Telephone microphone is enabled | |
| Extensions | Remote Frwd | Telephone can transfer calls to a remote telephone number | Telephone cannot transfer calls to a remote telephone number[1] | |
| Night Service | Group Assign | Telephone is in group | Telephone is not in group[1] | |
| Night Service | Exclude List | Telephone is excluded | Telephone is not excluded[1] | |
| Aux Equip | Msg Waiting | Station is a fax message-waiting station | Station is not a fax message-waiting station | |
| Aux Equip | Fax Extension | Extension is a fax machine | Extension is not a fax machine | |
| Tables | AllowTo | Allowed List assigned to telephone | Allowed List is not assigned to telephone[1] | |
| Tables | DisallowTo | Disallowed list assigned to telephone | Disallowed list is not assigned to telephoneAppendix | |

## DSS Console—*Continued*

| System Programming Menu Option | Option | Red LED Status ON | OFF | FLASHING |
|---|---|---|---|---|
| Data | Voice/Data | Voice/data pair | Not voice/data pair[1] | |
| Operator | Direct Trunk Queued Call | Operator position | Other | Can be assigned as operator position |
| Operator | Queued Call Message Center | Message Center position | Other | Can be assigned as Message Center |
| Operator | In Queue Alert | Position receives In-Queue alert | Other | Position can receive In-Queue alert |
| | Call Types—Dial 0, LDN Unassigned, DID, Grp Coverage | Position receives call type | Other | Position can receive call type |

1 Factory setting

## Wiring Constraints

***System Wiring***

- System within 5 feet of dedicated AC power outlet.
- System within 25 feet of the network interface.
- Telephones within 1000 cable feet (304.8 m) of all telephones except MLX telephones. MLX telephones within 3000 feet of control unit. IROBs if needed. Distance for the 4400-Series telephones varies according to the gauge of the wire:
  - 26 gauge—2000 feet
  - 24 gauge—3000 feet
  - 22 gauge—5000 feet
- MLX telephones using 24 gauge wire have a distance limitation of 3,000 feet.
- PARTNER ETR telephones using 24 gauge have a distance limitation of 1,000 feet.
- PARTNER ETR ports programmed for Tip/Ring using 24 gauge wire have a distance limitation of 3,000 feet.
- Ground wire for the power supply cannot be over 10 feet.
- If the SMDR printer is over 50 feet from the control unit, use an Asynchronous Data unit (ADU).
- Back-to-back connection of the DS1 facility with another system's facility is possible when the cable distance is less than 1300 feet.
- Telephone Wiring.
- Maximum cord length from an MLX telephone to a ISDN data module is 80 feet (24 m).
- Total length of cords between the KS22911-L2 or 406743419 power supply and the MLX telephone cannot be more than 50 feet.
- Do not replace the 2-foot. D8AC cord (packaged with the DSS) with a longer cord.
- Radio base of the TransTalk 9031/9040 telephone must be at least 25 feet from the control unit.

## PC Connections

To use the WinSPM software, you must install the software using the directions packaged with the software. Also, your PC must be connected to the MERLIN MAGIX system directly via a serial port on your PC, or you must connect to the MERLIN MAGIX system internal modem using your PC's modem:

- **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 system (for example, via a 016 T/R module) to access the MERLIN MAGIX system 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 system internal modem. The External Connection type requires use of the Remote Access feature to allow you to connect to the MERLIN MAGIX system programming port without human 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 system internal modem. The Manual Connection is used when you must reach the MERLIN MAGIX system programming port by placing a call to the site and the person that 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.

**NOTE:**
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 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.

**NOTE:**

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 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. If you use commas for pauses in the dial string, the dial string is 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.

**NOTE:**

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 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 by 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.

**NOTE:**

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 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.

**When Calling NSAC**

Do the following before you call Tier III for troubleshooting:

1. Check and recreate the problem.
2. Connect your laptop or PC so you are ready.
3. Know the software version of your system (Dial *05 on an ETR, 4400-Series, or MLX display telephone ICOM or SA button).
4. Write down the errors in the Error Logs.
5. Know the configuration of the system operator console (DLC or QCC).
6. Know the type of tie lines (emulated or not, wink-start, etc.).

**QPPCNs on the NSAC Bulletin Board**

Follow these steps to review QPPCNs on the NSAC bulletin board:

1. Dial 800 241-3375.
2. At the first screen, select F for File Section.
3. At the next screen, select N for Non-Tier III Tips.
4. At the next screen, select 8 for QPPCNs.

**QPPCNs Online**

QPPCNs are available online at:

**NOTE:**
http://www.bcs.com/tech_info/qppcn

## Technical Support Telephone Numbers

| Product or Service | Comments | Telephone Number |
|---|---|---|
| **Avaya Equipment** | | |
| NSAC Tech Support | PARTNER, MERLIN, VINTAGE, CLASSIC | 800-552-3293 |
| TSC Tech Support | DEFINITY | 800-248-1234 |
| Network Systems (RTAC) | DACS, SLC, ESS, DDM | 800-225-7822 |
| Network Systems | ISDN Sets (6500/7500) | 800-225-4672 |
| Network Engineering Group | MERLIN LEGEND private networking | 888-297-4700 |
| AT&T Paradyne | CSU, DSU, MUX, Hubs, Routers | 800-237-0016 |
| **Long Distance** | | |
| *Over Local Lines/Trunks* | | |
| AT&T | | 800-222-3000 |
| MCI | | 800-444-2222 |
| SPRINT | | 800-877-4646 |
| *T1 Service* | | |
| AT&T | 800/MEGACOM/ISDN | 800-222-1000 |
| AT&T | Data | 800-325-1230 |
| MCI | | 800-444-8722 |
| SPRINT | | 800-877-5045 or 6277 |
| To identify your long distance carrier | | 700-555-4141 |
| To identify the telephone # from which you are calling | | 10732-1-404-988-9664 |
| **Other GBCS Support** | | |
| NSAC QPPCN Coordinator | Small Business Products | 303-843-5204 |
| TSC QPPCN Coordinator | Large Business Products | 800-248-1234 |
| BCS Publications Center | Documentation on all BCS products | 800-457-1235 |
| NSAC Bulletin Board | On-line technical/product information | 800-241-3375 |
| TIER III TIPS publication | Sue Williams Publication Manager | 303-843-5921 |
| Tech Quarterly publication | Production Editor | 303-850-8898 |
| Comcode Hotline | PEC/Comcode/Part Cross-Reference | 800-654-5832 |

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**Pocket Reference**
**Issue 1, May 2003**
**555-730-116**

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