



MERLIN LEGEND™

Communications System
Release 2.0

Pocket Reference

Ordering Information

To order copies of this document:

Call: AT&T Customer Information Center on
800-432-6600

Write: AT&T Customer Information Center
2855 North Franklin Road
P. O, Box 19901
Indianapolis, IN 46219-1385

For assistance when installing or programming the system:

Call: National Service Assistance Center (NSAC) at
800-628-2888 or your authorized AT&T dealer

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Contents

Release 1.1 Enhancements	1
Release 2.0 Enhancements	2
Design Benefits	4
Environmental Specifications	5
Control Unit Interfaces	7
Network Interface Requirements	8
FCC Registration	8
DOC Registration	8
Hardware and Software Capacities	9
Ordering Codes	14
Control Unit Modules	32
Adjunct Summary	38
Uninterruptible Power Source (UPS) Backup Times	48
Power Supply Unit Load Requirements	49
■ Unit Load Calculation Rules	49
■ Unit Load Rating of System Modules	51
■ Unit Load Rating of System Trunks, Telephones and Adjuncts	52
System Feature Availability by Operating Mode	53
Telephone and Operator Console Features	56
Reference Documents	70

Release 1.1 Enhancements

Release 1.1 includes all Release 1.0 functionality plus the following enhancements:

Language selection allows the system to be programmed for prompts, menus, and messages on MLX display telephones to appear in English, French, or Spanish. Each of the following can also be programmed for any of these languages, independently of the system language:

- Individual extensions with MLX telephones
- SPM
- System programming reports
- SMDR report headers

In addition, user and operator guides, quick reference cards, and telephone tray cards are available in all three languages.

System operational enhancements include automatic selection of an SA button when Conference is invoked (in Hybrid/PBX mode), prompting through Conference setup (on MLX display telephones), relocation of the More prompt on the display, additional Inspect capability, improvements to system reports, and a log that records the last 20 times maintenance or system programming has been accessed.

SPM enhancements include operation in English, French, or Spanish, faster backup and restore, and automatic on-screen display of reports as they are created.

Additional equipment includes the 8102 and 8110 analog voice telephones, four headsets, two headset amplifiers, and a transparent protective cover for the MLX- 10™ and MLX- 10D™ telephones.

PF registration number AS5USA-65646-PF-E is assigned by the FCC for operating the MERLIN LEGEND™ Communications System in Hybrid/PBX mode in the United States.

Release 2.0 Enhancements

Release 2.0 includes all Release 1.1 functionality plus the following enhancements:

Programming enhancements include the following:

- Extension Program Copy is a new feature that reduces programming time by allowing the use of any extension as a template for programming another extension or block of extensions through centralized programming.
- Integrated Administration provides a single interface through Integrated Solution III (IS-III) for programming entries common to the MERLIN LEGEND Communications System and AUDIX Voice Power™.
- Forced idle reductions keep system interruptions at a minimum. In general, the smallest necessary component is forced idle during programming activities. For example, renumbering a single extension idles only one extension; loudspeaker paging port assignment idles only one trunk. Only a few system-wide programming activities, such as setting the system mode and system renumbering, idle the entire system.
- SPM provides a convert option to convert a Release 1.0 or Release 1.1 backup file to the format used by Release 2.0. This allows existing system programming to be preserved when the system is upgraded to Release 2.0.

System operational enhancements include the following:

- Coverage VMS is a new feature [that prevents incoming external calls from going to voice mail (All other Coverage remains active as programmed.) The feature is programmed extension-by-extension, either through extension programming or through centralized programming.
- A Night Service group can be programmed to include a calling group as a member. This allows a call that receives Night Service treatment to be queued when all Night Service group members are busy or unavailable.
- When AUDIX Voice Power or MERLIN MAIL™ sends a Leave Word Calling message to an extension, the system identifies the voice mail system as the sender of the message. As a result, when the voice mail subscriber uses the Return Call feature, the call goes to any available voice mail port, not just to the specific port that generated the message. This improves access by reducing the chance of getting a busy port.
- Coverage receivers can call Coverage senders and have the call receive Coverage treatment. If a receiver calls a sender for whom he or she is covering, and the sender is busy or unavailable, the call proceeds to other points of Coverage. It does not come back to the receiver who originated the call.

- Enhancements to display prompts include automatic posting of a Do Not Disturb message when a user activates the Do Not Disturb feature, and confirmation messages when a user activates Hold, Privacy, Saved Number Dial, and Transfer.
- Direct Inward Dialing (DID) trunk emulation on a T1 facility provides 24 DID channels on a single OS1 trunk interface, instead of requiring 24 separate physical trunks.
- When the system is using Centrex services, Recall can be used on an outside call on an **SA** or **ICOM** button to send a timed switchhook flash to the host switch (on a loop-start trunk only).

FAX Attendant System™ is a new application for sending and receiving fax messages; its interface is similar to the voice mail interface provided by AUDIX Voice Power, FAX Attendant System, which co-resides with AUDIX Voice Power on the IS-III platform, provides the following services:

- Fax Call Answer receives and holds messages for subscribers whose fax machines are busy or out of paper, This service also allows a subscriber to have a personal fax number without having a fax machine.
- Fax Mail allows subscribers to create and use fax distribution lists, send and receive fax messages, and record personal greetings for incoming fax calls.
- Fax Response prompts callers to select and receive faxes from a customer-created menu of choices, using touch-tone responses.

408 GS/LS-MLX module is a new interface that combines four ports for ground-start or loop-start trunks and eight ports for MLX telephones on a single module in the control unit.

Primary Rate Interface (PRI) enhancements include the following:

- Connectivity to the 5ESS® Generic 6
- Multiple Incoming calls to directory number
- Call-by-Call Service Selection
- Authorization Code handling for FTS2000
- Station ID (SID) as Calling Party Number for Automatic Number ID (ANI)

Maintenance enhancements include the following:

- Descriptions of module test failures in clear English
- Optional printing of hard copy of error logs
- Display that correlates extension numbers 10 slot/port and logical ID
- Display showing which slots, trunks, and extensions are maintenance-busy
- Internal digital switching element (DSE) loopback test for all modules
- B-channel loopback test for MLX modules
- B-channel line or call service states display
- Error log entries for dual-port RAM errors

Design Benefits

Modular components allow easy, cost-effective growth in both size and function. For upgrades from the MERLIN® system family of products, all analog MERLIN system telephones, as well as wiring, can be reused. For upgrades from the MERLIN II Communications System, certain trunk and station modules can also be reused.

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

Built-in 1200-bps modem allows fast access to the system by customers AT&T 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 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 an off-premises telephone (OPT) line or an analog or digital tie trunk.

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

68000 Motorola CPU running at 10 MHz with zero wait states provides fast system performance.

Memory data retention saves time by ensuring that system and extension programming information is retained for 12 to 30 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 64 kbps.

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 digital multiline (MLX) telephones with superior display capabilities and supports the 7500B Data Module for the connection of adjuncts.

Environmental Specifications

Control Unit

Fully loaded basic carrier	451b (20.4 kg)	14" W x 23" H x 12" D (35.6cm x 58.4 cm x 30.5 cm)
Fully loaded 2-carrier	90 lb (40.8 kg)	25" W x 23" H x 12 D (63.5cm x 58.4 cm x 30.5 cm)
Fully loaded 3-carrier	1351 b(61.2 kg)	37" W x 23" H x 12" D (94 cm x 58.4 cm x 30.5 cm)

Mean Time Between Failures 2.1 years
(mean or average time the system is expected to operate before any type of failure occurs)

Mean Time Between Outages 4.0 years
(mean or average time the system is expected to operate before a failure affecting more than 25% of extensions or lines for more than 15 seconds occurs)

Backboard

- Without SYSTIMAX® 6' W x 3' H x 3/4" D (182,9 cm x 91.4 cm x 1.9 cm)
- With SYSTIMAX 7' W x 4' H x 3/4" D(213.4cmx 121.9cmx 1.9 cm)

Backboard Mounting Hardware Requirements

Wood surface	Wood screws
Concrete surface, brick, cmc block	Masonry anchors
Plaster, plasterboard	Toggle bolts
Sheet-metal surface	Sheet-metal screws
■ Hardware should have a combined pullout force of 650 lb (294.8 kg),	
■ When mounting to sheet-metal walls, attach to structural members.	

Location

- Within 5' (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	1000 Btu/hr	(70 cal/sec)
Fully loaded 3-carrier	1500 Btu/hr	(105 cal/sec)

Power Requirements

Basic carrier	117VAC	60 Hz ± 5%	3A
2-carrier	117VAC	60 Hz ± 5%	6A
3-carrier	117VAC	60 Hz ± 5%	9A

Temperature/Humidity Range

40°- 104°F (4°–40°C); optimum temperature 60°F (16°C)

20% –80% relative humidity

Ventilation

1" (2.5 cm) on right and left sides; 12" (30.5 cm) above and below

Radio Frequency Interference (RFI) Tolerance 1 V/m**Caution**

- Do not use switch control on AC outlet for control unit.
- Use approved ground (AC receptacle for 3-prong plug).
- Do not install control unit outdoors
- Do not place control unit near extreme heat (furnaces, heaters, attics, or direct sunlight).
- Do not expose 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 control unit under any device that may drip fluid, such as an air conditioner.

Control Unit Interfaces

Interface	Applications	Signaling Channel Rate	Audio/ Data Rate
BRI S/T*	Control unit to MLX telephone 7500B Data Module	16 kbps (D) 64 kbps (B) 64 kbps (B and D)	
DS1	Control unit to the following services: ■ T1 Emulated t1e trunk Emulated DID Emulated loop-start Emulated ground- start ■ PRI services ACCUNET® switchcd digital service MEGACOM® WATS MEGACOM 800 Software Defined Network (SDN) MultiQuest® 900 number scrvlces Connectivity to 5ESS Generic 6 Multiple incoming calls to directory number Call-by-Call Service Selection Authorization Code handling for FTS2000 SID-ANI as Calling Party Number	64 kbps	
RS-232-C	Control unit to PC connected to system programming port Control unit to AT&T model 572 printer, PC with CAS, or CAT connec led to RS-232-C port	2400 bps or 1200 bps 1200 bps	2400 bps or 1200 bps 1200 bps
ATL	Control unit 10 analog multiline telephone	40 kHz	300 3400 Hz
Tip/Ring	Control unit to single-line telephone, modem, fax, OPT, or voice mail system		

* Call handling derived from CCITT recommendation Q.931

Network Interface Requirements

<u>Line/Trunk Type</u>	<u>Facility Interface Code</u>	<u>Network Interface</u>
Loop-start	02LS2	RJ11C, RJ14C, RJ21X
Ground-start	02GS2	RJ11 C, RJ14C, RJ21X
DID	02RV2-T	RJ11C, RJ14C, RJ21X
OPT	0L13C	RJ11C, RJ14C
Tie	TL31M	RJ2GX
T1	04DU9-B 04DU9-C	RJ48C/X
PRI	04DU9-B 04Du9-C	RJ48C/X

FCC Registration

<u>Registration Number</u>	<u>REN</u>	<u>Type</u>
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

<u>DOC Certification No.</u>	<u>CSA Certification No.</u>	<u>Load No.</u>
230-4095A	LR-56260	6

Hardware and Software Capacities

Allowed lists	
Number of lists	8
Entries per list	10
Digits per entry	7
Applications	
CAS	1
CAT	
CMS	2
Number of trunks (each)	28
Number of agents (each)	28
Number of external alerts (each)	4
Integrated Solution III	
AUDIX Voice Power—IS-III	1*
Number of mailboxes	300
FAX Attendant System	1†
Integrated Voice Power Automated Attendant	1*
Call Accounting System- IS-III	1
SPM—IS-III	1
MERLIN Attendant™	4
MERLIN MAIL Voice Messaging System	4
Number of mailboxes (each)	40
SPM-DOS	1
Automatic Route Selection (ARS)	
Fully programmable ARS tables	16
Entries per table	100
Total entries in all tables	1600
ARS patterns	18
Subpatterns per pattern	2
Routes per subpattern	6
Default tables	4
Callback calls in queue	64
Calling Groups	
Number of groups	32
Members per group	20‡
Groups per member	1
Delay announcements per system	32

* AUDIX Voice Power IS-III and Integrated Voice power Automated Attendant cannot be connected simultaneously

† Fax Attendant System only with AUDIX Voice Power

‡ QCCS cannot be members

Hardware and Software Capacities (continued)

Calling Groups (continued)	
Delay announcements per group	1
Groups per delay announcement	32
External alerts per group	1
Coverage groups per group	1
Carriers	
Slots per basic carrier	5*
Slots per expansion carrier	6
Carriers per system	3
Total slots available	17
Coverage Groups	
Number of groups	32
Senders per group	144
Groups per sender	1
Receiver buttons per group	8 †
Groups per queued call console (QCC) receiver	30
Data hunt groups	
Number of groups	32
Members per group	20
Groups per member	
Digital data via 7500B Data Module	127
Direct Inward Dialing	
Number of blocks	2
Number of trunks	80
Directories	
System Directory (System Speed Dial)	
Number of directories	1
Listings per directory	130

* The processor module must be placed in slot 0 in the basic carrier.

† In a Hybrid/PBX system, when QCCS are used, the queue can also be assigned as a receiver but is not counted in the 8-receiver maximum.

Hardware and Software Capacities (continued)

Directories (continued)	
Extension Directory	
Number of directories	1
Listings per directory	144
Personal Directory	
Number of directories	48
Listings per directory	50
Direct Station selectors (DSSS)	16†
Disallowed Lists	
Number of lists	8
Entries per list	10
Digits per entry	11
DS 1 modules	3
Fax machines with Message Waiting	16†
Lines/trunks	80‡
Night Service	
Groups	8
Members per group	144
Calling groups per group	1
Groups per member	8
Emergency Allowed List entries	10
Operator Consoles	
Direct-line consoles (DLCS)	
MLX-20L™ or MLX-28D™	8 §
BIS-22D, BIS-34D, or MERLIN II	8**
System Display Console	
QCCs	4 §
Total of DLCS plus QCCS	8
Number of consoles per module	2
Paging system ports (loop-start only)	

* Two per MLX module; the MERLIN II System Display Console has a built-in DSS

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

‡ Lines/trunks can be configured as personal lines.

§ Two per MLX modules.

** Two per analog module

Hardware and Software Capacities (continued)

Park codes	8
Personal lines	64
Personal Speed Dial	*
Entries per single-line or 5- or 10-button telephone	24
Entries per system	1200
Digits per entry	16
Pickup	
Number of groups	30
Members per group	15
Groups per member	1
Pool buttons	64
Pools (trunk groups)	
Number of pools	11
Trunks per pool	80
Ports (not achievable simultaneously)	
Delay announcements	32
Digital data via 7500B Gala Module	127
Paging	3
Voice and data (physical ports)	144
Voice Announce to Busy extensions	127
Voice mail interface (VMI)	20†
Total ports	224‡
Power failure transfer telephones	20

* Single-line and 5- and 10-button telephone only

† Although the system software supports up to 24 VMI ports, all the VMI ports must be in the same calling group, and the maximum number of stations in a calling group is 20.

‡ The system is said to have a total capacity of 224 (80 CO trunks plus 144 extensions). However, those are physical jacks. Each MLX station jack represents 2 logical endpoints (ports). For example, an MLX telephone with a Multi-Function Module (MFM) plugs into only 1 station jack, but the jack supports the telephone and the adjunct connected to the MFM (fax machine, answering machine, etc.) The 1 station jack is supporting 2 endpoints.

Although it has only 1 jack, the 100D module can serve up to 24 endpoints. Therefore, the entire system can be configured to Connect up 1080 trunks and 255 station endpoints, a total of 335 endpoints. This total of 335 endpoints exceeds the system's capacity of 216 time slots. If more than 216 endpoints are in use at the same time, blocking can occur.

Hardware and Software Capacities (continued)

Remote Access	
Number of barrier codes	16
Digits per code	4
Shared System Access (SA) buttons	
Number of shared buttons per SA	16
Stations	
Total physical jacks	144
Total endpoints	255
System programming equipment	
MLX-20L	*
RS-232-C port for PC with SPM	1
Modem	1
Telephones	
Analog multiline without Voice Announce to Busy	136
Analog multiline with Voice Announce to Busy	127
MLX-20L	48†
MLX-10, MLX-10D, or MLX-28D (with or without 7500B Data Module or MFM)	127‡
Single-line	144
Traffic	
Hundred call seconds (CCS) per hour per station	6.0
Trunks	80§
Two-party conversations	108

* Remote system programming overrides on-site system programming unless an on-site backup or restore is in progress. The system sends a message that a remote connection is established before terminating an on-site system programming session.

† Total includes the MLX-20L telephone used for system programming.

‡ An MFM and a 7500B Data Module cannot be connected to the same telephone at the same time.

§ Trunks can be configured as personal lines.

Ordering Codes

Component	PEC	Comcode	App. Code
Control Unit			
MERLIN LEGEND Control Unit	6140-CU2		
Basic tamer and housing		106388614	403E
Power supply module		105743801	391A1
Processor		106215155	517A27
Feature module		106874738	517G25
MERLIN LEGEND Control Unit w/408 ATL	6140-CA2		
Basic carrier and housing		106388614	403E
Power supply module		105743801	391A1
Processor		106215155	517A27
Feature module		106874738	517G25
408 GS/LS		106064678	517A26
MERLJN LEGEND Control Unit w/408 MLX	6140-CD2		
Basic carrier and housing		106388614	403E
Power supply module		105743801	391A1
Processor		106215155	517A27
Feature module		106874738	517G25
408 GS/LS-MLX		106698590	517A29
MERLIN LEGEND Control Unit w/12x24MLX	6140-242		
Basic carrier and housing		106388614	403E
Power supply module		105743801	391A1
processor		106215155	517A27
Feature module		106874738	517G25
408 GS/LS-MLX (qty.3)		106698590	5 17A29
Expansion Unit	61490		
Expansion carrier and housing		106388630	403F
Power supply module		105743801	391A1
Expansion Unit Cover		106388259	17A

Ordering Codes (continued)

Component	PEC	Comcode	App. Code
R1/RI.I Upgrade to R2	6141-102A	106874738	517G25
Upgrade from Merlin II (Basic)	6140-UD2A		
Cover		106388234	16A
Processor		106215155	517A27
008 MLX		105628010	517A21
Feature module		106064660	517A25
MLX-20L telephone			
(choose one):			
Black		106743420	7713D01B-003
White		106743438	7713D01B-264
Expansion cover		106388259	17A
(zero, one, or two)			
Upgrade from Merlin II (w/MLX module)	6140 -U2LA		
Cover		106388234	16A
Processor		106215155	517A27
Feature module		106874738	517G25
Expansion cover		106388259	17A
(zero, one, or two)			
Trunk and Station Modules			
008 (ATL)	61485	105351092	517B3
008 MLX	61486	105628010	517A21
008 OPT	61489	106387525	517A28
012 (T/R)	61487	106553779	517E13
100D(DS1)	61491	105461560	517B15
400EM(tle trunk)	61492	105311401	517A14
400Gs/LsmR	61483	105628044	517B18
408GS/LS	61481	106064678	517A26
408GS/LS-MLX	61493	106698590	517A29
800 DID	61488	105628077	517B20
800 GS/LS	61484	105627996	517A19
Vintage Trunk and Station Modules			
400(withTTRs)	61379	105408892	517B12
408 LS	61482	105512495	517C1
800 LS	61384	105351100	517B4

Ordering Codes (continued)

Component	PEC	Comcode	App. Code
Telephones			
MLX Telephones			
MLX-10			
English (black)	3156-02B	106743024	7712D01B-003
English (white)	3156-02W	106743032	7712D01B-264
French (black)	3156-F21	106633886	7712D01A(29)-003
French (white)	3156-F21	106633894	7712DUA(29)-264
Spanish (black)	3156-S21	106613508	7712001A(22)-003
Spanish (white)	3156-S21	106613516	7712001A(22)-264
MLX-10D			
English (black)	3156-03B	106743040	7712D02B-003
English (white)	3156-03W	106743057	7712D02B-264
French (black)	3156-F31	106633928	7712D02AQ9)-003
French (white)	3156-F31	106633936	7712D02A(29)-264
Spanish (black)	3156-S31	106613524	7712D02A(22)-003
Spanish (white)	3156-S31	106613532	7712D02A(22)-264
MLX-20L			
English (black)	3156-05B	106743420	7713001B-003
English (white)	3156-05W	106743438	7713D01B-264
French (black)	3156-F51	106634421	7713001A(29)-003
French (white)	3156-F51	106634439	7713D01A(29)-264
Spanish (black)	3156-S51	106613557	7713D01A(22)-003
Spanish (white)	3156-S51	106613573	7713D01A(22)-264
MLX-28D			
English (black)	3156-04B	106743503	7713D02B-003
English (white)	3156-04W	106743511	7713D02B-264
French (black)	3156-F41	106634470	7713D02A(29)-003
French (white)	3156-F41	106634488	7713D02A(29)-264
Spanish (black)	3156-S41	106613599	7713D02A(22)-003
Spanish (white)	3156-S41	106613607	7713D02A(22)-264
Analog Multiline Telephones (black)			
MLC-5	3168-MLC	105515332	7312 H01A-003
BIS-10	3165-10B	105161061	7313 H01A-003
01s-22	3166-22B	105188809	7314 H01A-003
BIS-22D	3166-DSB	105630420	7315 H01B-003
BIS-34	3167-34D	105167027	7317 H01A-003
BIS-34D	3167-DSB	105630529	7317 H01B-003
MERLIN PFC™(ATL)	3169-PF2	106681562	
PFC paper	31690	106673361	

Ordering Codes (continued)

Component	PEC	Comcode	App. Code
Telephones, continued			
Vintage Analog Multiline Telephones (black)			
5-Button	3160-111	105217426	Z7302H01D-003
10-Button	3161-172	105217509	Z7303H01D-003
10-Button HFAI	3161-161	105371942	Z7309H01C-003
34-Button	3162-412	103842050	Z7305H01B-003
34-Button Deluxe	3162-417	105217715	Z7305H02D-003
34-Button 61S	3162-61S	103981965	Z7305H03D-003
34-Button BIS/DIS	3162-DIS	103981981	Z7305H04C-003
Single-Line Telephones			
8110 Analog Voice	3193-001		
Black		106272321	8110A01A-003 811
White		106272339	8110A01A-264 811
8102 Analog Voice	3192-001		
Black		106272305	8102A01A-003 810
White		106272313	8102A01A-264 810
7102	3185-MWR		
Black		105335285	7102A01A-003
Misty cream		105330419	7102A01A-215
2500 YMGK	3178-NHL		
(message waiting, recall touch-tone, desk)			
Black		105480578	2500YMGK-003
Misty cream		105480560	2500YMGK-215
2500 MMGK	3101-ETR		
(recall, touch-tone, desk)			
Black		105414130	2500MMGK-003
Misty cream		105414122	2500MMGK-215
2500 MMGJ	3101-EBD		
(touch-tone, desk)			
Black		105414155	2500MMGJ-003
Misty cream		105414148	2500MMGJ-215
2554 MMGJ	3101-EBW		
(touch-tone, wall)			
Black		105480081	2554MMGJ-003
Misty cream		105480032	2554MMGJ-215
500 MM	3100-ORD		
(rotary, desk)			
Black		103870234	500MM-03
Ivory		103870226	500MM-50
Beige		103870267	500MM-60

Ordering Codes (continued)

<u>Component</u>	<u>PEC</u>	<u>Comcode</u>	<u>App.Code</u>
Telephones, continued			
Single-Line Telephones, continued			
554 BMPA	3100-ORW		
(rotary, wall)			
Black		103823498	554BMpA-3
Ivory		103823506	554BMPA-50
Beige		103823555	554BMPA-60
Cordless Telephones			
Model 5320	3103-CLS	105543516	CS6300U11A
Consoles			
MERLIN II	61392	105229744	7318H01A-00
System Display Console			
DSS			
English (black)	3156-DCB	105685481	604A1-003
English (white)	3156-DCW	105685499	604A1-264
Spanish (black)	3156-SDI	106613672	604A1(22)-00
Spanish (white)	3156-SDI	106613680	604A1(22)-26
Applications			
SPM Version 2,0 -- DOS	61495	106906092	
SPM Version 2.0 UNIX System	61496		
Call Accounting System (CAS)			
CAS Plus V3 Bundle w/80-col,			
Parallel Printer	1201-NP1		
CAS Plus V3 Bundle w/132-col			
Parallel Printer	1201-WP1		
CAS Plus V3 Software	1201-DR1	406362244	
Rate Table*	12010	406158444	
CAS Plus upgrade	12009	406158394	
UNIX CAS (LEGEND)	1201-U12	406478537	
CAS/H			
CAS/H LEGEND 100S	1201-H10	405799255	
CAS/H LEGEND 200S	1201-H20	405788289	
CAS/H Rate Table*	12050	405788420	

* consult AT&T or an authorized dealer for other area-specific information

Ordering Codes (continued)

<u>component</u>	<u>PEC</u>	<u>Comcode</u>	<u>App. Code</u>
Applications, continued			
Call Accounting Terminal (CAT)			
CAT BASIC/B	3600-010		
CAT Termmal		406669762	
Printer		406637306	
CAT Basic Rate Table* (Update Chip)	36014	406669739	
CAT/B 150S	3600-023	406478800	
CAT/H 150S	3600-024	406478818	
CAT/B Rate Table+ (update)	36023	406478792	
CAT/H Rate Table* (update)	36024	406478784	
Call Management System (CMS)	1207-100		
5 1/4" floppy disk		106496540	
3 1/2" floppy disk		106496532	
Board	8301-100	106198815	
CONVERSANT INTRO Appllcation	4201-100		
CONVERSANT INTRO Appllcation	4201-101		
Casual User			
CONVERSANT INTRO Application	4201-102		
Casual Dev & Data			
InnManager w/Base Software	7051-INN	406670984	
Site Specific Software			
20 station	70501	406670992	
40 station	70502	406671008	
60 station	70503	406671016	
80 station	70504	406671024	
100 station	70505	406671032	
355AF Adapter, Receptacle	2709-A25	105012645	355AF
355A Adapter, Plug	2750-A24	105012637	355A
14' Cord	2725-07N	103687802	D8W-87 14FT
MERLIN LEGEND Integrated Solution III Controllers			
100 MB MC-II + Processor	4200-503		
4 x 100 MB MC-II + Processor		406506329	
4MB Memory Upgrade		106219553	
Color Monitor		406504571	
Keyboard		406504563	
9 to 25 Pin Adapter		406139394	
Cartridge Tapes (qty 2)		106220866	

* Consult AT&T or an authorized dealer for other area-specific information

Ordering Codes (continued)

Component	PEC	Comcode	App. Code
Applications, continued			
200 MB MC-II + Processor	4200-503		
4 x 200 MB MC-II + Processor		406506337	
4MB Memory Upgrade		106219533	
Color Monitor		406504571	
Keyboard		406504563	
9 to 25 Pin Adapter		406139394	
Cartridge Tapes (qty. 2)		106220866	
200 MB MC-III + Processor	4200-912		
8 x 200 MB MC-III + Processor		406700930	
Color Monitor		406504571	
Keyboard		406504563	
9 to 25 Pin Adapter		406708503	
2 x 250 MB Cart. Tapes		406760009	
500 MB MC-III + Processor	4200-936		
8 x 500 MB MC-III + Processor		406700914	
Color Monitor		406504571	
Keyboard		406504563	
9 to 25 Pin Adapter		406708503	
2 x 250 MB Cart. Tapes		406760009	
Software Applications			
MERLIN LEGEND IS-III		106894942	
IS-III Platform Software			
UNIX SPM 2.0			
IS-III System Manager's			
Guide			
IS-III I+M Guide			
IS-III Tape			
MERLIN LEGEND R2 AUDIX			
Voice Power 2.1.1		106876311	
IVPSS 2.0			
AUDIX Voice Power 2.1 1			
AUDIX Voice Power/FAX Attendant			
System MLR2 Switch Integ. SW			
Integ. AUDIX Voice Power/			
FAX Attendant System Admin.			
AUDIX Voice Power User's			
Guide (50)			
AUDIX Voice Power System			
Manager's Guide			
AUDIX Voice Power/FAX Attendant			
System Planning Guide			

Ordering Codes (continued)

<u>Component</u>	<u>PEC</u>	<u>Comcode</u>	<u>App.Code</u>
Applications, continued			
MERLIN LEGEND FAX Attendant		106876220	
FAX Attendant 21.1			
Co-resident Base Pkg			
AUDIX Voice Power/FAX Attendant			
System MLR2 Swllch Integ. SW			
FAX Attendant User's Guide (50)			
MERLIN LEGEND AUDIX			
Voice Power/FAX Attendant			
System Planning Guide			
Reference Sheet			
OTHER (Voice Boards)			
IVP4 Board	8306-100	106248651	
IVP6 Board		106856271	
IS-III Bundles			
100MB MC-II + 4 x4	6146-100		
AUDIX Voice Power			
100 MB MC-II + Processor	4200-503		
IVP4 Board	8306-100	106248651	
UNIX 3.2.2		106529548	
Cart. Tape Utilities		106632938	
MERLIN LEGEND IS-III		106894942	
MERLIN LEGEND R2 AUDIX			
Voice Power 2.1.1		106876311	
200MB MC-II + 4 x 12 AUDIX			
Voice Power	6146-200		
200 MB MC-II + Processor	4200-503		
IVP4 Board	8306-100	106248651	
UNIX 3.2.2		106529548	
Cart. Tape Utilties		106632938	
MERLIN LEGEND IS-III		106894942	
MERLIN LEGEND R2			
AUDIX Voice Power 2.1.1		106876311	
200 MB MC-111+8x12			
AUDIX Voice Power	6146-012		
200 MB MC-III + Processor	4200-912		
IVP4 Board (qty 2)	8306-100	106248651	
UNIX 3.2.2		106529548	
Cart. Tape Utilities		106632938	
MERLIN LEGEND IS-III		106894942	
MERLIN LEGEND R2			
AUDIX Voice Power 2.1.1		106876311	

Ordering Codes (continued)

<u>Component</u>	<u>PEC</u>	<u>Comcode</u>	<u>App. Code</u>
Applications, continued			
500 MB MC-III + 8 x 36			
AUDIX Voice Power	6146-036		
500 MB MC-III + Processor	4200-936		
IVP4 Board (qty.2)	8306-100	106248651	
UNIX 3.2.2		106529548	
Cart. Tape Utilities		106632938	
MERLIN LEGEND IS-III		106894942	
MERLIN LEGEND R2			
AUDIX Voice Power 2.1.1		106876311	
100MB MC-II + 4 x 4			
AUDIX Voice Power, CAS	6146-101		
100 MB MC-II + Processor	4200-503		
IVP4 Board	8306-100	106248651	
UNIX 3.2.2		106529548	
Cart. Tape Utilities		106632938	
MERLIN LEGEND IS-III		106894942	
MERLIN LEGEND R2			
AUDIX Voice Power 2.1.1		106876311	
CAS IS-III	1201-U12	406478537	
200 MB MC- II+4X12			
AUDIX Voice Power, CAS	6146-201		
200 MB MC-II + Processor	4200-503		
IVP4 Board	8306-100	106248651	
UNIX 3.2,2		106529548	
Carl. Tape Utilities		106632938	
MERLIN LEGEND IS-III		106894942	
MERLIN LEGEND R2			
AUDIX Voice Power 2.1.1		106876311	
CAS IS-III	1201-U12	406478537	
200 MB MC-III +8X12			
AUDIX Voice Power, CAS	6146-112		
200 MB MC-III + Processor	4200-912		
IVP4 Board (qty.2)	8306-100	106248651	
UNIX 3.2.2		106529548	
Cart. Tape Utilities		106632938	
MERLIN LEGEND IS-III		106894942	
MERLIN LEGEND R2			
AUDIX Voice Power 2.1.1		106876311	
CAS-IS-III	1201-U12	406478537	

Ordering Codes (continued)

Component	PEC	Comcode	App.Code
Applications, continued			
500 MB MC-III + 8x36 AUDIX Voice			
Power, CAS	6146-136		
500 MB MC-III + Processor	4200-936		
IVP4 Board (qty.2)	8306-100	106248651	
UNIX 3.2.2		106529548	
Cart, Tape Utilities		106632938	
MERLIN LEGEND IS-III		106894942	
MERLIN LEGEND R2			
AUDIX Voice Power 2.1.1		106876311	
CAS—IS-111	1201-U12	406478537	
200 MB MC-111+8X12 AUDIX			
Voice Power, 4x 1000 FAX	6146-212		
200 MB MC-III + Processor	4200-912		
IVP4 Board (qty 2)	8306-100	106248651	
UNIX 3.22		106529548	
Cart. Tape Utilities		106632938	
MERLIN LEGEND IS-III		106894942	
MERLIN LEGEND R2 AUDIX			
Voice Power 2.1.1		106876311	
MERLIN LEGEND FAX Attendant		106876220	
500 MB MC-III+8X36 AUDIX			
Voice Power, 4x3000 FAX	6146-236		
500 MB MC-III + Processor	4200-936		
IVP4 Board (qty.2)	8306-100	106248651	
UNIX 3.2.2		106529548	
Cart. Tape Utilities		106632938	
MERLIN LEGEND IS-III		106894942	
MERLIN LEGEND R2			
AUDIX Voice Power 2 1.1		106876311	
MERLIN LEGEND FAX Attendant		106876220	
200 MB MC-111+8X12 AUDIX			
Voice Power, CAS, 4x 1000 FAX	6146-312		
500 MB MC-III + Processor	4200-936		
IVP4 Board (qty.2)	8306-100	106248651	
UNIX 3.2.2		106529548	
Cart. Tape Utilities		106632938	
MERLIN LEGEND IS-III		106894942	

Ordering Codes (continued)

<u>Component</u>	<u>PEC</u>	<u>Comcode</u>	<u>App. Code</u>
Applications, continued			
MERLIN LEGEND R2			
AUDIX Voice Power 2.1. 1		106876311	
MERLIN LEGEND FAX			
Attendant		106876220	
CAS-IS-III	1201-U12	406478537	
500 MB MC-III+8X36 AUDIX			
Voice Power, CAS,			
4x3000 FAX	6146-336		
500 MB MC-III + Processor	4200-936		
IVP4 Board (qty.2)	8306-100	106248651	
UNIX 3.2.2		106529548	
Cart. Tape Utilities		106632938	
MERLIN LEGEND IS-III		106894942	
MERLIN LEGEND R2			
AUDIX Voice Power 2.1.1		106876311	
MERLIN LEGEND FAX			
Attendant		106876220	
CAS IS-III	1201-U12	406478537	
MERLIN Attendant	6125-ATT		
Hardware		406406090	
Documentation		106431265	
MERLIN MAIL Voice			
Messaging System for the			
MERLIN LEGEND			
Communcalions System			
Two-port	6107-005		
MERLIN MAIL unit		406824532	
Remote maintenance			
device		406466193	
Four-port	6107-006		
MERLIN MAIL unit		406824540	
Remote maintenance device		406466193	
Two-port line card (R2)	6107-007	406824524	
(upgrade from two to four)			
System Adjuncts and Adapters			
Auxiliary Power Unit 9024	61416	406467142	9024
Channel service units (CSUS)			
ESF T1	2152-ESF	405616293	305010171-00
Cable (8 mod, wire wrp)	21555	406012609	513861312-50
			50 FT

Ordering Codes (continued)

<u>Component</u>	<u>PEC</u>	<u>Comcode</u>	<u>App. Code</u>
System Adjuncts and Adapters, continued			
Cable (8 mod, 15-pin sub)	21554	406012591	513823015-50 50FT
Stand-alone wall mount	21545	405970104	380-100213-001
Stand-alone wall bracket		405616277	380-100542-001
551 T1L1	2152-15T	403768179	305-10097-001
Power unit	21530		
Unit		403242639	KS22911 LI
Cord		103895660	DW4A-SE 10FT IP
Stand-alone wall mount	21545	405970104	380-100213-001
Stand-alone wall bracket		405616277	380-100542-001
Optional Equipment			
Peripheral Interface	62515	105179303	KIT PRTS-D181558
Async. Data Unit,			
Receptacle	2169-004	103964185	Z3A4
Async. Data Unit, Plug	2169-001	103963963	Z3A1
Aux Power (2 required)	21691		
Transformer		102600517	
Adapter (248B)		102802113	
Cord		102937620	
Adapter (4006)		103848859	
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-Bulldng	32918	406721738	3436
-343B (IROB) unit			
analog multiline*			
IROB unit MLX*	32919	106417447	505A ASSYOAWD
Fuse block 505A for IROB		406610337	
(8 fuse blocks per box)			
7500B Data Module	2164-BDM	105657654	Z7506-L1
Stand-alone power supply	21625	405509852	WP90110L7
Multiple mounting	21626	105441166	Z77A
7500A upgrade kit	21627	105688501	D182208

* Any multiline of off-premises telephone must have an appropriate IROB protector at the control unit location and at the off-premises location.

Ordering Codes (continued)

<u>Component</u>	<u>PEC</u>	<u>Comcode</u>	<u>Am. Code</u>
System Adjuncts and Adapters, continued			
Digital Magic On Hold® player (replaces analog unit)	3128-020	406659326	PAKGDMOH1 DIG L
Digital Announcement Unit	3119-001	406747774	A7TDAU
Modem 2224G	2224-CEO	105659965	2224C-LID/2
Music Coupler	61398	406143925	ASSY-K23395L3
PagePac® 6	5323-006	405701277	22052-006 PG PC
PagePac 6 Plus	5323-008	405701608	22052-000 PG PC
PagePac 20 PowerMate™			ADP06
Trunk Adapter	53518	405223298	22050-900
PagePac6 Portsaver	53519	405703026	220520020
AT&T Door Phone Speaker	53240	406269860	
PagePac 20 Talkmate	53501	403307994	PE53501 AT
PagePac 50	5322-051	403305444	5322-051 VC PG
PagePac 200	5322-201	403305469	5322-201 VCPG
PagePac VS	5322-700	403307192	5322-7003500 VC PG
200 WATT Amplicenter	52120	403305493	52120 AT
50 WATT Amplicenter	52150	403305501	52150 AT 50W
Ring generator unit	61388	105213201	129B RING GEN
SMDR Printers			
Parallel Printer (80-column)	4200-570	406637314	
Parallel Printer (132-column)	4200-571	406712067	
CAT Printer (serial)	4200-572	406716464	
Uninterruptible Power/ Supply (UPS)			
500 VA (15 min) Reserve(1 hr)	2403-050	105610141	515005C111
	24035	105610174	0053150
Universal Paging Access Module (UPAM)	58500	405891698	KIT-UPAM
TAM-B		405899972	D181900
PRS-48		405742735	D181900
WMT-1A		405891680	0181900
Zonemate™ 9	53505		
Dialer unit		404057911	DIAL UNIT-9ZONE
Control unit		405024134	CNTL 22050-020
Zonemate 39	53506		
Dialer unit		404057929	39 ZONE SELECT
Control unit		405024134	CNTL-22050-020C

Ordering Codes (continued)

<u>Component</u>	<u>PEC</u>	<u>Comcode</u>	<u>App. Code</u>
System Adjuncts and Adapters, continued			
External Alerts			
Loud external ringer	31016A	103117016	RINGER-L1AMP-49
E1CM-type	31019A		
Gray		102872934	RINGER-E ICM-49
Ivory		102917952	RINGER-E ICM-50
E1CM ringer and parts	61211		D-181233
29QA adapter		102992252	290A ADPTR
Ringer		102872934	E ICM-49
Mounting plate		102988466	1049A
Cord		103938494	CORD-D4CH-87-25
Supplemental Alerts			
Alert Bell	5580-002	406293720	T B 5 9 1 - 1
Network Interface Alert Bell	61211	102872934	RINGER-E ICM-49
Alert Horn	5580-021	406207217	THET4- 1
Alert Strobe	5580-041	403319197	AT-WHLLK
Alert Chime	5580-030	405136060	CHBT2- 1
Telephone Adjuncts and Adapters			
General purpose Adapter (GPA) (analog)	2301-GPA	103977997	ZIC
Multi-Function Module (digital)	3156-MFM	105746474	540A1
Supplemental Alert Adapter (SAA)	2301-SSA	105031199	ADPTR-856A
MLX- 10 and MLX-10D protective cover		406648469	
MLX Telephone Powcr	31757		
48V Power Supply		405331711	KS22911L2
Modular Power Cord		102937620	D6AP-87
400B2 Adapter		104152558	400B2
Analog Multiline Telephone			
Power	62510	105105514	D181522
48V Power Supply		405331711	KS22911L2
Modular Power Cord		102937620	D6AP-87
Z400FAdapter		103942857	Z400F
Single-line telephones			
Program, Pause, and Auto Dial button conceal kit for 8100 series telephones	31931	106248370	Kit-D182363 Analog

Ordering Codes (continued)

Component	PEC	Comcode	App. Code
Telephone Adjuncts and Adapters, continued			
Single-line telephones, continued			
4A Speakerphone	3120-02W		4 A
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
Green		103873899	LSPK-108AA-51
Beige		103873907	LSPK-108AA-60
White		103873964	LSPK-108AA-58
S201 Speakerphone	3152-007A	103786786	D8W-87 7FT
Black		106192651	MOD-S201AP-003
Misty cream		106192693	MOD-S201AP-215
CS201 Conference Speakerphone	3131-004A	103786786	D8W-87 7FT
Black		106270325	MOD-CS201A-003
Misty cream		106270333	MOD-CS201A-215
S202A Speakerphone	3152-008		
Black		105721088	TEL-S202A-003
Misty cream		105721096	TEL-S202A-215
S203A Speakerphone	3131-008		
Black		106058340	MOD-S203A-003
Misty cream		106508365	MOD-S203A-215
Message Waiting Indicator	31032	103966396	234A
Hands Free Unit (HFU)	3163-HFU	103814356	MOD-S102A

Ordering Codes (continued)

<u>Component</u>	<u>PEC</u>	<u>Comcode</u>	<u>App. Code</u>
Telephone Adjuncts and Adapters, continued			
Headsets and Adapters			
StarSet® Headset	3122-030	406445627	KS23822L3
Mirage® Headset	3122-050	406445783	KS23822L4
Supra® Headset	3122-040	406445791	KS23822L5
Supra NC® Headset	3122-060	406741900	KS23822L12
Headset Adapter	3164-HFA	105752042	ADPTR-502C-003
500A Headset Adapter	3152-001	106690043	Adapter EL-500A-265
		405331711	Pwr Sup-KS2291 1L2
		102479904	Cord-D4BU-29 Std 7FT
		104152558	Adapter-40082
Modular Amplifier	3122-020	406445619	KS23822L2
Plug Prong Amplifier	3122-010	406445601	KS23822L1
MLX Telephones—Miscellaneous Parts		Add-Ons/Replacement	
Handsets and Cords			
Handset (black)		106050065	K2S1-003
Handsel (white)		106053408	K2S1-264
Handset, amplified hearing	31052		
Black		105581896	K6S2-003
White		106248248	K6S2-264
Misty cream		105581904	K6S2-215
Handset cord, 9' (2 74 m), black		105635429	H4DU-003 9FT
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-264 12'IP
Handset cord, 25' (7,62 m), black		105523866	H4DU-3 25'
DSS line cord, 2' (61 cm)		106187545	CORD D8AC-87
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

Ordering Codes (continued)

Component	PEC	Comcode	App. Code
MLX Telephones—Miscellaneous Add-Ons/Replacement Parts, continued			
Designation (Button Assignment) Cards and Covers			
Card—MLX- 10, MLX- 10D*		846865939	
Card—MLX-20L*		846865947	
Card—MLX-28D*		846865954	
Card set—DSS†		106448756	KIT-D 182464
Card covers—DSS (black)†		106448731	KIT-D 182462 PRT
Card covers—DSS (white)†		106448749	KIT-D 182463 PRT
Card set—QCC‡		106561673	KIT-D 182562 PRT
Card covers§—		106448681	KIT-D 182457 PRT
MLX- 10, MLX- 10D, MLX-20L			
Card covers§—MLX-28D		106448699	KIT-D 182458 PRT
Analog Multiline Telephones—Miscellaneous Add-Ons/Replacement Parts			
Desk Stands and Wall Mounts			
Adjustable desk stand, 10-button	32002	103746855	11A
Adjustable desk stand, 34- button	32003	103746863	11C
Fixed desk stand, 5- & 10-button	32004	103746848	10A
Desk stand/wall mount 14A, BIS- 10		103804290	14A-003
Desk stand/wall mount 14B, BIS-22		1039644582	14B-003
Desk stand/wall mount 14C, BIS-34		103979837	14C-003
Fixed desk stand and wall mount, 5- button	32000	103804290	14A
Kit of parts		103995882	D-181230
Wall mount, 10-button	32001	103747846	201A
Kit of parts		103995882	D-181230
Wall mount, 34-button	32006	103747853	203A
Kit of parts		103995882	D-181230

* 10 (1/2) sheets per package

† Includes both top and bottom cards or covers

‡ 8 cards per kit (four sets)

§ 4 per package

Ordering Codes (continued)

Component	PEC	Comcode	App. Code
Analog Multiline Telephones—Miscellaneous Add-Ons/ Replacement Parts, continued			
Faceplates			
BIS-10		105203186	KIT PRTS-D-181582
BIS22		105336986	KIT PRTS-D-181786
BIS22D		105690762	KIT PRTS-D-182210
BIS-34 and BIS-34D		105203194	KIT PRTS-D-181583
Button Label Sheets			
BIS-10		105336978	KIT PRTS-D-181785
BIS-22		105336960	KIT PRTS-D-181784
BIS-22D		105690770	KIT PRTS-D-182211
BIS-34 and BIS-34D		105336956	KIT PRTS-D-181783
Display console (FM 1) (includes one faceplate)		105299754	KIT PRTS-D-181727
Display console (FM2 & R3) (includes one faceplate)		105486252	KIT PRTS-D-182041
Single-Line Telephones Miscellaneous Add-Ons			
Ground- Start Button	31021	405792839	Key-KS23566L1
Wiring Kits			
Interconnect Wiring Kit			
110AB1-100JP12		104409396	
110A 1 trough		104407960	
D-Rings		842139248	
D8W cords		103786802	
Parts list			
SYSTIMAX	3103-MER	106393671	
MERLIN Wiring Kit			
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' (15 m)		846619989	
D8W cords 24 cords, 14' (4. 3 m)		103786802	
Template		846613933	
Instruction sheet		846613941	
Parts List		846623924	

Control Unit Modules

Module	Trunk Type	Station Type
Processor	N/A	N/A
Power supply	N/A	N/A
008	N/A	Analog multiline telephone; Call Management System; analog data via a modem
008 MLX	N/A	MLX telephone; digital data device (such as the 7500B Data Module)
008 OPT	N/A	On-premises or off-premises single line telephone

Specifications

Highlights: 68000 processor at 10 MHz, built-in modem; built-in diagnostics; Hybrid/PBX, Key, or Behind Switch mode option; RAM backup for 12 days

Ports: Top RS-232-C port for SMDR; bottom RS-232-C port for system programming PC

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 analog stations

Signaling: Analog multiline telephone protocol (40 kbps)

Loop range: 1000 feet (305 m), in-building or in-range out-of-building (with analog IROB protectors) only

Capacity: 8 digital stations, each with 1 or 2 endpoints (each endpoint assigned a separate extension number), including these station types:

- digital voice only
- digital voice with Voice Announce to Busy
- digital voice and digital data (via 7500B Data Module)
- digital voice and analog data
- digital data only (7500B Data Module)

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 DSS

Loop range: 1000 feet (305 m), in-building or in-range out-of-building (with MLX IROB protectors) service only

Capacity: 8 T/R stations* on 2-way voice transmission path with support for telephones with message-waiting LEDs; 2 TTRs

Notice to Telco: Meets FCC Class C

Ring current: 105-Vrms sinusoidal ringing superimposed on -48 VDC; a ring generator must be installed in the power supply module of each carrier that has an 008 OPT module.

REN: ≤ 1.0 per port

Disconnect signal: 900 ms (T/R short for answering machines, G3 fax, etc.)

Switchhook flash detection: 300-1200 ms

Loop resistance: Serves 2-wire loops to 1300 ohms, including stations

- The system recognizes the OPT module as an 012 module having 12 ports. However, the OPT module has only 8 jacks. Therefore, each installed OPT module decreases the system's capacity by 4 ports.

Control Unit Modules (continued)

Module	Trunk Type	Station Type
012 (T/R)	N/A	Single-line telephone; MERLIN Attendant; MERLIN MAIL Voice Messaging System; T/R adjunct (such as an answering or fax machine); analog data device (such as a modem)
1000	T1 or PRI	N/A
400**	Loop-start and ITR	Power failure transfer (PFT) telephone
400EM	Tie trunk	N/A
400 GS/LS/ITR	Loop-start or ground- start and TTR	PFT telephone (button needed for ground-start PFT telephone)
408*	Loop-start	Analog multiline telephone; Call Management System; PFT telephone

* Although these MERLIN II modules are supported, the 400 GS/LS, the 408 GS/LS, and the 408 GWLS-MLX are the recommended modules

Specifications

Capacity: 12 T/R stations on 2-way voice transmission path with support for telephones with message-waiting LEDs; 2 TI17s

Power: 21 -VDC, 600-ohm battery source

Ringing current: 105-Vrms, 30-Hz sinusoidal ringing superimposed on 48 VDC; a ring generator must be installed in the power supply module of each carrier that has an 012 module.

REN: ≤ 1.0 per port

Disconnect signal: 900 ms (T/R short for answering machines, G3 fax, etc.)

Switchhook flash detection: 300-1200 ms

Capacity: 24 trunks for voice and analog data or 23 trunks for voice and data with 1 channel used for signaling

Mode: Multiplexes 24 or 23 trunks into 1 facility and demultiplexes 1 facility into 23 or 24 trunks

Speed: Up to 64 kbps

Signaling: DSI over 4-wire; T1 uses robbed-bit or common-channel, PRI uses 23 B + D

Capacity: 4 trunks, 4 TTRs, 1 PFT telephone

Signaling: Loop-start

Capacity: 4 tie lines

Method of completion: Automatic start, immediate-start, wink-start, delay-dial-start

Signaling: Loop-start or ground-start, optioned per port

Capacity: 4 trunks, 4 TTRs, 1 PFT telephone

Signaling: Loop-start or ground-start, optioned per port

Capacity: 4 trunks, 8 stations, 1 PFT telephone

Station signaling: Analog multiline telephone (40 kbps)

Trunk signaling: Loop-start trunk, analog voice

Loop range: 1000 feet (305 m), in-building or in-range out-of-building (with analog IROB protectors) only

Control Unit Modules (continued)

Module	Trunk Type	Station Type
408 GS/LS	Loop-start or ground- start	Analog multiline telephone; Call Management System; PFT telephone
408 GS/LS-MLX	Loop-start or ground- start	MLX telephone; digital data device (such as the 7500B Data Module)
800*	Loop-start	PFT telephone
800 DID	Direct Inward Dialing	N/A
800 GS/LS	Loop-start or ground- start	PFT telephone; button needed for ground-start PFT

* Although this MERLIN II module is supported, the 800 GS/LS is the recommended module.

Specifications

Capacity: 4 trunks, 8 stations, 1 PFT telephone

Station signaling: Analog multiline telephone (40 kbps)

Trunk signaling: Loop-start or ground-start trunk (optional per port); voice

Loop range: 1000 feet (305 m), in-building or in-range out-of-building (with analog IROB protectors) only

Capacity: 4 trunks, 8 digital stations, 1 PFT telephone

Station 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: 1000 feet (305 m), in-building or in-range out-of-building (with MLX IROB protectors) only

Capacity: 8 trunks, 2 PFT telephones

Signaling: Loop-start or ground-start

Capacity: 8 trunks, 2 TTRs

Transmission: Incoming calls only; 2-way (1-pair) fixed impedance to DID trunks; no outgoing calls

Signaling: Loop-reverse battery; wink-start or immediate start; accepts touch-tone dialing

Capacity: 8 trunks, 2 PFT telephones

Signaling: Loop-start or ground-start

Adjunct Summary

Equipment Type	Specifications	AT&T Products
Alerts (AC)*	■ Any audible or visual alert that operates on 20-30 Hz ringing signals ■ Associated with a specific station (supplemental alert) or works on a programmed trunk port (external alert)	External Ringer—Loud External Ringer
Alerts (IX)	■ Any audible or visual alert that operates on 48-VDC ringing signals ■ Associated with a specific station (supplemental alert) or works on a programmed trunk port (external alert)	Alert bell Alert horn Alert strobe Alert chime Alert deluxe horn Alert switch
Answer/record machine*	■ Industry-standard machine ■ Low ringer equivalence (less than 0.15 or <1.0 total REN for T/R port) ■ 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 Model 1531 Remote Answer System telephone

* Cannot be connected to a QCC.

LS or GS5S	T/R	Interface		
		MFM	GPA	SAA
Trunk Jack	012 Station Jack	MLX Station Jack	Analog Station Jack	Analog Station Jack
	✓	✓	✓	
✓†		✓		✓
	✓	✓	✓	

† Requires Universal Paging Access Module (UPAM) to provide 48 VDC.

Adjunct Summary (continued)

Equipment Type	Specifications	AT&T Product
Cordless Telephone*	■ Must have touch-tone dialing capability when connected via MFM; rotary or touch-tone dialing can be used on T/R port. ■ Single line	5320 Cordless Telephone 5200 Cordless Telephone 5500 Cordless Telephone
Credit Card Verification Terminal*	■ 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*	■ 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. ■ A 329A power unit must be added to an operator console having 20SSs. ■ Connects to 0SS jack on operator console	N/A

* Cannot be connected to a QCC.

LS or GS/LS	T/R	Interface		
		MFM	GPA	SAA
Trunk Jack	012 Station Jack		Analog Station Jack	Analog Station Jack
	✓	✓	✓	
	✓	✓		
✓	✓	✓	✓	

Adjunct Summary (continued)

Equipment Type	Specifications	AT&T Products
Fax*	Must have touch-tone dialing capability when connected via MFM; rotary or touch tone dialing can be used on T/R port. Industry-standard analog interface	AT&T 3410D AT&T 3500D AT&T 3510D AT&T 3520D AT&T 3530D AT&T Fax 4515D AT&T Fax 45250 AT&T Fax 9015 AT&T Fax 9020 AT&T Fax 9022 AT&T Fax 9025FX AT&T Fax 9035FX
Group Calling Delay Announcement*	■ Industry-standard announcement device ■ Must provide automatic disconnect ■ Each calling group can have its own announcement (maximum 32). ■ A device can provide delay announcement for more than one group.	Model 1330 Answering Machine DA-5 Digital Voice Announcer
Hands-Free Unit	■ For use with analog multiline telephones ■ Connects directly to telephone	5202A
Headset for analog multiline telephone	N/A	StarSet Mirage Supra Supra NC

* Cannot be connected to a QCC.

LS or GS/LS	T / R	Interface		
		MFM	CPA	SAA
Trunk Jack	012 Station Jack	MLX Station Jack	Analog Station Jack	Analog Station Jack
	✓	✓		
	✓	✓	✓	

Adjunct Summary (continued)

Equipment Type	Specifications	AT&T Products
Headset for MLX telephone	N/A	Starset Mirage Supra Supra NC
Headset Adapter	■ Need to program Auto Answer All button for use with 502B, 502C ■ Connects directly to telephone OTHER jack	502A 502B 502C
Loudspeaker Paging	■ External paging system using DTMF signaling connected to LS or GS line jack. ■ CPE paging systems require an interface unit; if CPE has 2-wire input, the BOGEN UPAM-K (56500) can be used.	PagePac 20 PagePac 20 with Zonemate 9 PagePac 20 with Zonemate 39 PagePac 6 PagePac 6 Plus
Message Waiting Indicator	■ For single-line telephones ■ Connects directly to telephone	234A (PEC 3 1032)
Modem	■ If the modem supports touch-tone dialing via the associated data terminal, the keyboard can be used for dialing. ■ If the modem does not support touch-tone dialing, an associated basic (single-line) telephone can be used for dialing.	4000 Modem 2224G Modem 4024 Modem 2296A Modem 2296 Modem

IS or GS/LS	T/R	Interface		
		MFM	CPA	SAA
Trunk Jack	012 Station Jack	MLX Station Jack	Analog Station Jack	Analog Station Jack
✓				
✓ *	✓	✓	✓	

* For 2224G Modem only.

Adjunct Summary (continued)

Equipment Type	Specifications	AT & T Products
Music-on-Hold*	■ Any FCC-registered 8-ohm music source or recorded announcement device	Magic On Hold
Speaker-phone	■ Connect directly to telephone ■ For single-line telephones only	4A† (PEC 3120-02W) 203A (PEC 3131-006)
SMDR Printer	■ Connects to upper RS-232-C jack on processor module ■ Must be located within 50 feet (15 m) of control unit or use ADU to extend distance	475 Printer 476 Printer 572 Printer

* 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 AT&T or an authorized dealer.

† Requires 2500SM telephone.

LS or GS/LS	Interface			
	T/R	MFM	GPA	SAA
Trunk Jack	012 Station Jack	MLX Station Jack	Analog Station Jack	Analog Station Jack
✓ *				

* Music Coupler required (PEC61398).

Uninterruptible Power Source (UPS) Backup Times

UPS Units	Backup Time Limit*	PEC
Basic 500VA	15 min	2403-050
500VA Reserve Cabinet	1 hr	24035

* Backup times for normal system operation at maximum system load.

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	4 or fewer†	Not required

* The 391A1 power supply unit generally supports 6 modules of any type in Hybrid/PBX mode. However, if all 6 carrier slots meet the following conditions, the unit load total may exceed 54 and auxiliary power may be required:

- Only MLX or analog multiline station modules are installed.
- More than 45 MLX-20L or 34-button analog multiline telephones are installed.

† The 391A1 power supply unit generally supports 4 modules

Power Supply Unit Load Requirements (continued)

Unit Load Calculation Rules (continued)

Mode	Installed Modules	Calculation
Square Key or Behind Switch	5 or more	■ Use the “Unit Load Rating of System Modules” table and instructions below to determine the estimated unit loads (ULS): — If $ULs \leq 54$, an Auxiliary Power Unit 9024 is not required. — If $ULs > 54$, use the “Unit Load Rating of System Modules” table to determine the actual ULs for the system. ■ If the actual ULS > 54, try to exchange modules between carriers to reduce the ULs below 54.* ■ If the modules cannot be exchanged to reduce the UL below 54, an Auxiliary Power Unit 9024 is required.

* Empty slots are not permitted between modules.

Power Supply Unit Load Requirements (continued)

Unit Load Rating of System Modules

<u>Module</u>	<u>Unit Load</u>	<u>Module</u>	<u>Unit Load</u>
008	12.0	408 GS/LS	12.0
008 MLX	13.5	408 GS/LS-MLX	12.0
008 OPT	8.0	408 (LS)	12.0
012 T/R	8.4	800 GS/LS	0.0
100D (DS1)	0.0	800 (LS)*	0.0
400 GS/LS/TTR	0.0	800 DID	8.0
400 (LS)*	0.0	Processor	0.0
400EM	8.0		

* This is a MERLIN II loop-start-only module that can be used in the MERLIN LEGEND Communications System.

Power Supply Unit Load Requirements (continued)

Unit Load Rating of System Trunks, Telephones, and Adjuncts

Network Access Trunks*	
DID	1.0
DSI	0.0
GS/LS	0.0
Tie	1.4
Telephones	
MLX-10 and MLX-10D	1.2
MLX-28D	1.7
MLX-20L	1.6
BIS-10	1.1
BIS-22 and BIS-22D	1.3
BIS-34 and BIS-34D	1.5
MLC-5	0.0
5-Button	0.8
10-Button Basic	1.1
10-Button HFAI	1.2
34-Button Basic	1.1
34-Button DLX	1.7
34-Button BIS	1.4
34-Button BIS/DIS	1.4
Single-line telephone	0.7
Optional Equipment	
DSS console†	0.9
MFM‡	1.3
General Purpose Adapter	1.0
Hands Free Unit	1.0
Headset adapter	1.0

* Unit loads are computed per trunk.

† Up to two DSS consoles (one DSS per MLX-28D or MLX-20L) can be powered from each control unit carrier. For example, a 3-carrier system can have 6 system operator positions, each with one DSS powered from the control unit.

‡ The MFM is powered by an individual wall power unit located at the station.

System Feature Availability by Operating Mode

Feature	Mode		
	PBX	Key	Behind Switch
Automatic Maintenance Busy	✓	✓	✓
Automatic Route Selection	✓	✓	✓
Callback	✓	✓	✓
Calling restrictions	✓	✓	✓
Coverage	✓	✓	✓
Coverage VMS	✓	✓	✓
Delayed Ring Interval	✓	✓	✓
Direct Inward Dialing	✓		
Direct-Line Console options	✓	✓	✓
Directory	✓	✓	✓
Extension Status	✓	✓	✓
Forced Account Code Entry	✓	✓	✓
Group Calling	✓	✓	✓
Headset Status	✓	✓	✓
Hold disconnect	✓	✓	✓
Inside dial tone	✓	✓	✓
Labeling	✓	✓	✓
Language selection	✓	✓	✓
Loudspeaker Page	✓	✓	✓
Microphone Disable	✓	✓	✓
Night Service	✓	✓	✓
Paging groups	✓	✓	✓
Park	✓	✓	✓

System Feature Availability by Operating Mode (continued)

Feature	Mode		
	PBX	Key	Behind Switch
Pickup Group	✓	✓	✓
Pools (trunk groups)	✓		
Queued Call Console options	✓		
Recall interval	✓	✓	✓
Reminder Cancel	✓	✓	✓
Remote Access	✓	✓	✓
Remote Call Forward	✓	✓	✓
Station Message Detail Recording	✓	✓	✓
System Numbering	✓	✓	✓
System Restart	✓	✓	✓
System Speed Dial	✓	✓	✓
Toll Type	✓	✓	✓
Touch-tone or rotary signaling	✓	✓	✓
Transfer options	✓		
Voice Announce to Busy	✓	✓	✓

NOTES

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

Telephone and Operator Console Features

Feature	Program Code	Feature Code
Account Code Entry	*82	82 + code
Alarm§	*759	
Auto Answer All	*754	
Auto Answer Intercom	*753	
Auto Dial		
Inside (ext., group, zone)	*22 + ext. no.	
Outside	*21 + tel. no.	
Automatic Line Selection		
Enter	*14	
Exit	**14	
Barge-in*§	*58	
Callback		
Automatic		
On	*12	
Off	**12	
Selective	*55	55
Cancel selective		*55

* Centralized telephone programming only.

§ System operator-only feature.

MLX- 10D	MLX- 28D	MLX- 20L	Single- Line	MLX- 10	Analog Multiline
K P B	K P B	K P B	K P	K P B	K P B
	K P B	K P B			K P B
					K P B
					K P B
K P B	K P B	K P B		K P B	K P B
K P B	K P B	K P B		K P B	K P B
K P B	K P B	K P B		K P B	K P B
K P B	K P B	K P B	K P	K P B	K P B

† Includes the MLC-5 telephone.

Telephone and Operator Console

Features, continued

Feature	Program Code	Feature Code
Call Waiting		
On	*11	
Off	**11	
Call Waiting Pickup		87
Camp-On	* 5 7	57
Conference	*772	772
Coverage		
Receiver buttons		
Group	*42 + ext. no.	
Primary	*40 + ext. no.	
Secondary	*41 + ext. no.	
Sender buttons		
Cover inside & outside calls	*48	
Cover outside calls only	**48	
Coverage Off	*49	
Coverage VMS Off	*46	
Data Status	*83 + ext. no.	
Directory		
System Directory	(system programming)	
Extension Directory	(display only)	
Personal Directory	(display onty)	
Do Not Disturb	* 4 7	
Drop	* 7 7 3	773

MLX-100	MLX-280	MLX-20L	Single-Line	MLX-10	Analog Multiline
K P B	K P B	K P B	K P B	K P B	K P B

K P B	K P B	K P B		K P B	K P B
B	B	B		B	B
K P B	K P B	K P B		K P B	K P B

K P B
K P B
K P B
K P B

K P B	K P B	K P B		K P B	K P B
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K P B K P B K P B
K P B K P B K P B
 K P B

K P B	K P B	K P B		K P B	K P B
B	B	B		B	B

† Includes the MLC-5 telephone.

Telephone and Operator Console Features, continued

Feature	Program Code	Feature Code
Extension Status		
Direct-Line Console§		
Status Off	*760	760 + DSS button
Status 1	*761	761 + DSS button
Status 2	*762	762 + DSS button
Telephones		
(rooms or agents)		
status off		*44
status 1	*45	45
status 2	*44	44
Feature button	*20	
Forward and Follow Me		
Activate		
Forward (inside)	*33	33 + ext. <i>no.</i>
Remote Call Forward	*33	33 + <i>tel. no.</i> + #
Follow Me		34 + ext. <i>no.</i>
Cancel		
At originating station		33+ own ext. <i>no.</i>
At destination station		
Cancel one		*34 + ext. <i>no.</i>
Cancel all		*34*
Group Calling		
In-Queue Alarm button	*22 + <i>calling</i>	
	<i>group ext no.</i>	
Calling group supervisor		
Enter supervisor mode§		32 + Hold
Exit supervisor mode§		32 + Drop
Available (ES Status 2)	*762	762 + DSS button
Unavailable (ES Status Off)	*760	760 + DSS button
Calling group members		
Sign in (Available)		
Sign out (Unavailable)		
After-call work state		
(CMS only)		

§ System operator-only feature.

MLX-10D	MLX-280	MLX-20L	Single-Line	MLX-10	Analog Multiline
---------	---------	---------	-------------	--------	------------------

	K P B	K P B			K P B
--	-------	-------	--	--	-------

K P B	K P B	K P B	K P B	K P B	K P B
-------	-------	-------	-------	-------	-------

					K P B
K P B	K P B	K P B	K P B	K P B	K P B

K P B	K P B	K P B		K P B	K P B
	K P B	K P B			K P B

K P B	K P B	K P B	K P B	K P B	K P B
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† Includes the MLC-5 telephone.

Telephone and Operator Console Features, continued

Features	Program Code	Feature Code
Group Page Auto Dial button	*22 + <i>group ext. no.</i>	
Headset		
Auto Answer	*780	
Hang Up*	*781	
Mute (Headset/landset)	*783	
Status	*782	
Hold		771
Hold Release		**
Intercom buttons		
Assign buttons		
ICOM (Default Ring)	*16	
ICOM Originate Only	*18	
Change type		
Ring	**19	
Voice	*19	
Language		
English		790
French		791
Spanish		792
Last Number Dial	*84	84
Messaging		
Leave Message		
After calling	*25	25
Without calling		53 + <i>ext no.</i>
Cancel message left		*53 + <i>ext no.</i>
Message LED off	*54	54
Posted Message	*751	
Send/Remove Messages§	*38	38 + <i>ext no.</i>

* Centralized telephone programming only.

§ system operator-only feature.

MLX-100	MLX-28C)	MLX-20L	Single-Line	MLX-10	Analog Multiline†
K P B	K P B	K P B		K P B	K P B
K P B	K P B	K P B		K P B	
B B	B B	B B	B	B B	B B
K B	K B	K B		K B	K B
			K B K B		
K P B	K P B	K P B		K P B	
K P B	K P B	K P B	K P	K P B	K P B
K P B	K P B	K P B	K P B	K P B	K P B
K P B	K P B	K P B	K P B	K P B	K P B
K P B	K P B	K P B		K P B	K P B
	K P B	K P B			K P B

† Includes the MLC-5 telephone.

Telephone and Operator Console Features, continued

Feature	Program Code	Feature Code
Messaging (continued)		
Receiving messages		
Delete Message‡	* 2 6	26
Next Message‡	* 2 8	28
Return Call‡	* 2 7	27
Scroll‡	* 2 9	29
Night Selection	* 3 9	39
Notify		
Send	*757 + ext. no.	
Receive	*758 + ext. no.	
Park	* 8 6	
Park Zone Auto Dials	*22 + Park Zone	
Personal Speed Dial	# + (01-24) + * 2 1 + tel no. + #	01-24
Personalized Ringing	*32 + ring (1-8)	
Pickup		
General use	*9	
Specific line or ext.	*9 + line no./ext.	9 + line no./ext.
Group	* 8 8	88
Position Busy5	* 7 5 0	
Privacy		
On	* 3 1	31
off		* 3 1
Recall	* 7 7 5	775

‡ Display telephones only. Programming and feature codes are used with analog multiline telephones only; MLX telephones use display.

§ System operator-only feature.

MLX-10D	MLX-280	MLX-20L	Single-Line	MLX-10	Analog Multiline
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	KPB	KPB
	KPB	KPB			KPB
KPB			KP	KPB	KPB
KPB	KPB	KPB		KPB	KPB
KPB	KPB	KPB	KP	KPB	KPB
		P			
KPB	KPB	KPB	KP	KPB	KPB
KPB	KPB	KPB		KPB	KPB

† Includes the MLC-5 telephone.

Telephone and Operator Coneole Features, continued

Features	Program Code	Feature Code
Reminder Service		
Set	* 8 1	81 + <i>time</i> ‡
Operator Set§		81 + <i>ext. no.</i> + <i>time</i> ‡
Cancel	** 8 1	*81
Operator Cancels		*81 + <i>ext. no.</i>
Missed§	*7 5 2	
Ringing/Idle Line Preference		
On	*3 4 3	
Off	*3 4 4	
Ringing Options		
Individual lines		
Immediate ring	* 3 7	
Delay ring	* 3 6	
No ring	* 3 5	
All lines		
Immediate Ring	*3 4 7	
Delay Ring	*3 4 6	
No Ring	*3 4 5	
Abbreviated Ring		
On	*3 4 1	
Off	*3 4 2	
Send Ring (Shared SA)		
On	* 1 5	
off	** 1 5	

‡ English only: time is 12-hour (0100-1259) + 2(A) or 7(P).

French and Spanish: time is 24-hour (0000-2359).

§ System operator-only feature.

MLX-10D	MLX-28D	MLX-20L	Single-Line	MLX-10	Analog Multiline
K P B	K P B	K P B	K P B	K P B	K P B

K P B	K P B	K P B		K P B	K P B
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K P B	K P B	K P B		K P B	K P B
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P	P	P	P	P	P
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† Includes the MLC-5 telephone.

Telephone and Operator Console Features,continued

Feature	Program Code	Feature Code
Saved Number Dial	*85	
Send/Remove Message§	*38	38 + <i>ext. no.</i>
Signaling	*23 + <i>ext. no.</i>	
System Access buttons		
Assign buttons*		
SA (default Ring)	*16	
SA Originate Only	*18	
Shared SA	*17 + <i>primary ext. no.</i>	
Change type (SA or Shared SA)		
Ring	**1 9	
Voice	* 1 9	
System Speed Dial	*24 + <i>code (600-729)</i>	600-729
Transfer	*774	774
Voice Announce		
On	* 1 0	
Off	** 1 0	

* Centralized telephone programming only.

§ System operator-only feature.

MLX-100	MLX-28D	MLX-20L	Single-Line	MLX-10	Analog Multiline
K P B	K P B	K P B		K P B	K P B
	K P B	K P B			K P B
K P B	K P B	K P B		K P B	K P B
P	P	P		P	P
			P		
			P		
			P		

K P B	K P B	K P B	K P	K P B	K P B
B	B	B		B	B
K P B	K P B	K P B		K P B	K P B

† Includes the MLC-5 telephone.

Reference Documents

Document Number	Title
System Documents	
555-620-114	<i>System Overview</i>
555-620-110	<i>Feature Reference</i>
555-620-115	<i>Equipment and Operations Reference</i>
555-620-116	<i>Pocket Reference</i>
555-620-111	<i>System Programming</i>
555-620-112	<i>System Planning</i>
555-620-113	<i>System Planning Forms</i>
Telephone User Support	
555-620-122	<i>MLX- 10D, MLX-28D, and MLX-20L Display Telephones User's Guide</i>
555-620-123	<i>MLX- 10D, MLX-28D, and MLX-20L Display Telephones Quick Reference</i>
555-620-150	<i>MLX-100 Telephone Tray Cards (6 cards)</i>
555-620-152	<i>MLX-28D and MLX-20L Telephone Tray Cards (5 cards)</i>
555-620-124	<i>MLX- 70 Non-Display Telephone User's Guide</i>
555-620-125	<i>MLX- 10 Non-Display Telephone Quick Reference</i>
555-620-151	<i>MLX-1 0 (non-display) Telephone Tray Cards (6 cards)</i>
555-620-120	<i>Ana/og Multi/ine Telephones User's Guide</i>
555-620-121	<i>Analog Multiline Telephones Quick Reference</i>
555-620-128	<i>MLC-5 Cordless Telephone Quick Reference</i>
555-620-126	<i>Single-Line Telephones User's Guide</i>
555-620-127	<i>Single-Line Telephones Quick Reference</i>
System Operator Support	
555-620-134	<i>MLX Direct-Line Consoles Operator's Guide</i>
555-620-135	<i>MLX Direct-Line Consoles Quick Reference</i>
555-620-132	<i>Analog Direct-Line Consoles Operator's Guide</i>
555-620-133	<i>Analog Direct-Line Consoles Quick Reference</i>
555-620-136	<i>MLX Queued Call/ Console Operator's Guide</i>
555-620-137	<i>MLX Queued Call Console Quick Reference</i>

Reference Documents, continued

Document Number	Title
	Miscellaneous User Support
555-620-130	<i>Calling Group Supervisor's Guide</i>
555-620-131	<i>Calling Group Supervisor's Quick Reference</i>
555-620-129	<i>Data User's Guide</i>
	Documentation for Qualified Technicians
555-620-140	<i>Installation, Programming, & Maintenance (IP&M)</i> <i>Binder</i> (consists of 555-620-141, 555-620-142, 555-620-143, and 555-620-144)
555-620-141	<i>Installation</i>
555-620-142	<i>System Programming & Maintenance (SPM)</i>
555-620-143	<i>Maintenance and Troubleshooting</i>
555-620-144	<i>Programming Summary</i>

Within the continental United States, these documents can be ordered from the AT&T Customer Information Center (CIC) by calling 1-800-432-6600.