

### FEATURES

- Advanced microprocessor design
- Architectural station numbering
- Modular architecture for easy expansion and serviceability
- Media retrieval capability
- Two-way intercom voice communications
- Full-duplex telephone and console communications
- Up to 300 speakers or 125 staff telephones
- KSU/PBX telephone system integration
- Six programmable levels of call-in priority
- Twenty telephonic communication paths
- Three amplified audio channels
- Music during class change
- Sixteen tone types with user-programmable sound characteristics
- Program distribution to one room, all rooms, selected rooms, one zone, or multiple zones of rooms
- Thirty-two Program Zones
- All-call, individual zone, or multi-zone paging
- Five remote microphones for paging
- Thirty-two Paging Zones
- Built-in Master Clock with 16 simultaneous schedules and 32 time clock zones
- Advanced Digital Clock messaging
- Alpha-numeric messaging support on the Electronic Message Display
- Digital and analog clock support and correction
- Automatic daylight-saving time correction
- Customizable Holiday schedules
- Up to 1536 events
- New web-based, TII/XL Editor, application for system programming
- Configure system from LAN/WAN/Internet
- Manage multiple sites via LAN/WAN/Internet
- Remote PC diagnostic and programming
- Touchscreen or PC to operate console functions



### DESCRIPTION

The Telecor XL Communication System is a microprocessor-based system that provides two-way intercom communications, full-duplex telephone communications, and a built-in Master Clock. The system employs modular architecture to allow for easy expansion and serviceability. Because communication functions are integrated into the system via plug-in circuit cards, a system can be tailored to a facility's exact requirements.

Room locations can be equipped with a variety of devices such as speakers, call-in switches, message waiting/call assurance lamps, and staff telephones.

The system provides for two-way intercom communications between control consoles and speaker stations. Direct-dial, duplex, phone-to-phone communication is also provided between staff telephones and control consoles.

The channel capacity provided with the XL basic package can be expanded to accommodate additional traffic handling. Up to 20 telephonic communication paths and 3 amplified audio channels for intercom, paging, tone signalling, and audio program distribution can be provided.

#### SYSTEM PROGRAMMING

All user programmable features can be entered into the system three ways: from the internet with the new TII/XL Editor, from a standard control console or from a PC via a built-in RS-232 port. A modem connection



allows the PC to be located off-premise.

The TII/XL Editor is an easy-to-use web-based interface that allows for the configuration of the Telecor Communications System via the internet or LAN/WAN.

The web-based interface is intuitive, allowing for a wider variety of staff to attend to the system. Users can be assigned different access privileges to determine what operating characteristics can be modified on a system.

With central control and remote access a school district's IT professional can now manage and maintain all programming, from one location. If a Telecor technician is required, the system can be accessed remotely via the internet.

Each room station is assigned an architectural Room Number, a call-in zone to report to, and a call-in priority level. A room station is also assigned to each of the following independent speaker zones: Paging, Program Distribution, and Time Clock. At a designated console, incoming calls are announced in order of priority and then chronologically. Incoming calls and calls on hold may be previewed on the console. If an Emergency or Priority level call is not answered at a console within a designated time, the call will automatically ring at all other consoles in the system.

#### CONTROL CONSOLE

Communications and control are achieved via the sleek, compact MCC-300 Console. During a call-in, the console displays the priority level and room number; in idle mode, it displays the model number, time and date.

#### BUILT-IN MASTER CLOCK

The built-in Master Clock can be programmed for as many as 1536 events with 16 program schedules. Utilizing the system speakers, the Master Clock is used to distribute bell and tone signals to up to 32 independent Time Zones.

Digital clocks not only display time but can also receive messages (e.g. "Bell") from the Master Clock when initiated by a Console or remote device. This

provides an advantage for hearing-impaired individuals.

#### ELECTRONIC MESSAGE DISPLAY

Additionally, the XL System supports Telecor's Electronic Message Display (2481 EMD). These are alphanumeric displays which are capable of displaying the time, date, and scrolling messages up to 64 characters in length. Messages originating in the XL system can be activated as an event scheduled in the Master Clock or manually activated from a contact closure. The displays are addressable which allows for different messages to be transmitted to a variety of locations. In the event of an Emergency, the origin of the Emergency Call can be shown on multiple displays, giving the opportunity for the school staff to respond quickly. Messages can be activated from consoles or room telephones allowing emergency procedures such as school "lock down" to be activated from any telephone quickly and efficiently. Text messages can be sent from any PC in the facility to message displays in real time. The staff member simply types in the message from the keyboard and sends it to zones of message displays.

#### TIME CORRECTION

For enhanced timekeeping performance, the system can be synchronized using the following three methods: internet synchronization, a 60 Hz power line frequency signal, or the external time source of a third-party system (i.e. Master Clock).

#### ROOM TELEPHONE EMERGENCY CALLS

In systems using dialing telephones and room speakers in classrooms, a user may place an Emergency call to the Default Console in the school office by dialing a specified number. Once the call is dialed, hanging up the handset will not clear the call, ensuring that the call remains in the system until answered. When the call is answered, two way voice communications is established between the classroom speaker, even if the classroom phone remains off-hook. This insures voice communications between a classroom and the office in the event of an emergency in a classroom, regardless of the state of the classroom telephone.

## PAGING

From the Console, paging announcements can be sent to all areas (with emergency or normal priority), individual zones, or multiple zones. The system provides up to 32 Paging Zones. In addition, paging announcements can be made from up to 5 remote microphones, each one programmed to page a specific zone. Remote paging announcements are initiated either by remote contact closures or dialing up an access code on a console or DTMF phone. A Page Exclusion feature allows individual rooms to be temporarily blocked from receiving routine pages, time tones signals and audio programs, while allowing Emergency pages and intercom calls. This is useful in instances where provisional school functions such as exams, meetings, etc. are not to be interrupted. Rooms equipped with telephones may initiate a "Do not Disturb" status locally.

## TONE DISTRIBUTION

Up to 16 different tones can be activated at specific times to signal events (e.g. class changes, fire drills). Tones can be activated by a Console, staff telephone or remote contact closure. A tone can be activated in a single Time Zone or multiple Zones simultaneously. Thirty-two Time Zones are available, which are independent of the Paging and Program Distribution Zones. The system also provides the unique ability to program the way a tone sounds (e.g. frequency, output level, etc.) and its duration.

## PROGRAM DISTRIBUTION

Programs from audio sources such as radios and CD/tape players, can be distributed to one room, all rooms, selected rooms, a single zone, or multiple zones by activating a dry contact closure (push button, switch, relay, etc) or by dialing an access code on a console or DTMF phone. The system offers 32 Program Distribution Zones for program distribution, which are independent of the 32 Time Zones and 32 Paging Zones. The program can be monitored on the Console speaker. Three ports (tuner, tape and aux) and the five microphone inputs are available for program distribution.

## MEDIA RETRIEVAL SYSTEM

When the XL System is integrated with Telecor's Touch Tone Control Unit (TTCU), DTMF telephones can be used to retrieve programs from centralized media sources such as DVD players and VCRs.

## KSU/PBX INTEGRATION

The system can be completely integrated with a facility's KSU or PBX system, allowing for a facility's telephones to communicate with Telecor XL Consoles and Room Stations and vice versa. Calls from classroom devices can be directed to designated PABX extensions, along with call display information showing the room number and call priority of the incoming call. In addition, the XL System gains access to the public telephone network outside the building.

## VISUAL CONSOLE



Visual Console is a software application that allows for the operation of the XL System from a PC. Utilizing an easy to use graphical interface, routine call processing from classrooms, paging, program distribution, activating class change schedules, as well as emergency operations are all simplified through this Windows® based application. In addition, common operations such as daily announcements become automated with the use of Visual Console, removing multi-step console set ups. Emergency communications can be quickly activated through intuitive on-screen icons, ensuring unerring operation.

## TELECOR XL BASIC PACKAGE



The Telecor XL Basic Package consists of the card cage, system power supply, the Audio Termination Panel (ATP-AX2), Central Processing Unit (CPU-3-XL-MA), Audio Buffer Unit (ABU-3A-MA) and Control Console Port (CCP-300-MA).

The addition of the appropriate number of IOP Intercom Station Cards creates a single channel system. In addition, an ABU-3B-MA may be added for second channel support, or other cards listed

under Additional Components may be added to further expand the XL's capability.

**CPU-3-XL-MA:** A 386 EX processor contains the main system firmware. All user-programmed data is stored in nonvolatile EEPROM. In the event of a power failure, the system's battery backup maintains time (for up to 10 years).

The built-in RS-232 port on the CPU-3-XL-MA provides connection to a PC to allow for system diagnostics, event logging, and programming. This can be accomplished off-premise via a modem connection. A touchscreen PC to perform console functions can also be connected to the RS-232 port.

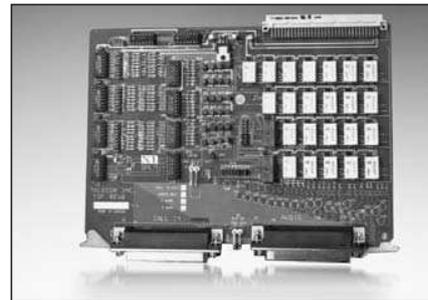
**ABU-3A-MA:** Contains the circuitry that amplifies the intercom channel audio for Consoles and Room Stations; in addition, the pre-amplification for 5 microphones (low Z output) as well as the tuner, tape and auxiliary audio sources. It also controls the selection and distribution of the program channel and the amplification and distribution of system tones to the audio busses. The ABU-3A-MA is for Single and Dual Channel Systems.

**CCP-300-MA:** This card provides the switching networks that connect the Console audio to the audio busses; the circuits for digital communications between the CPU-3 and Consoles; and power supply connections for Consoles. A CCP supports up to four MCC-300 Consoles or CDUs (Console Display Unit). It can also use one of its ports to support a RCD-7-XL (Remote Clock Driver).

**PSU-2:** Provides the 24 VDC and 5 VDC required for system operation. UL 813 Approved.

## REQUIRED COMPONENTS

### IOP INTERCOM STATION CARD



Controls the switching of intercom and program audio to intercom stations and speakers. It also detects call-in annunciation from call switches.

The IOP comes in 4 models: the IOP-4 (for 4-wire station applications), IOP-2 (for 2-wire station applications), IOP-I (for input annunciation only), and IOP-O (for audio switching outputs only).

## ADDITIONAL COMPONENTS

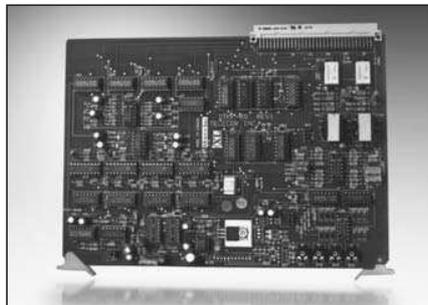
**ABU-3B-MA:** Same as ABU-3A-MA. Required as an addition for Dual Channel Systems.

### DBP DRIVER BUFFER CARD

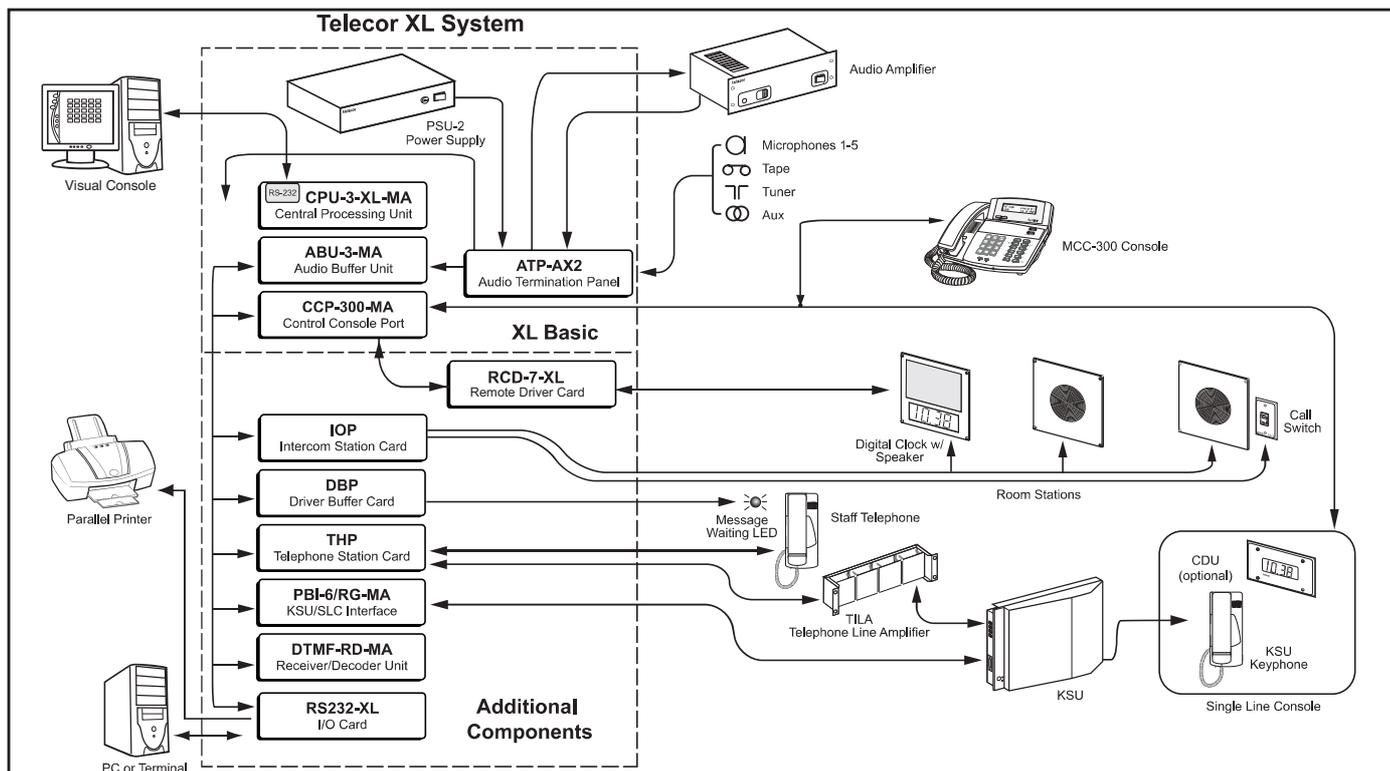


Contains the circuitry to control 25 remote LEDs. It tracks annunciate/output point activity and then produces a drive signal to light up the corresponding LED. Typical applications include Call Confirmation and Message Waiting LEDs found with Room Stations and Graphic Annunciators.

### DTMF-RD-MA RECEIVER/DECODER UNIT

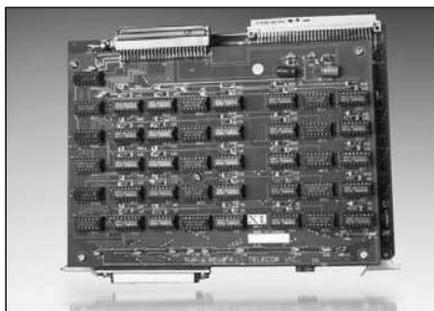


Decodes DTMF signals from telephone instruments. It is required when THP cards are used with the XL System.



Telecor XL System Block Diagram

**THP TELEPHONE STATION CARD**

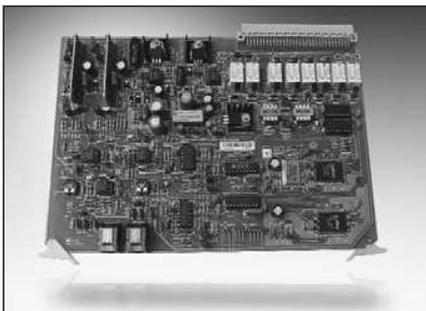


Supports 25 DTMF dialing/non-dialing telephone instruments. Each card provides four internal full-duplex communication links and four full-duplex global links. The card also facilitates the detection of call-in announcement from call switches. In addition, a port is available for internal/external access between KSU telephones and telephone instruments on the XL System.

**RCD-7-XL:** The RCD-7-XL Remote Clock Driver (RCD) serves as an interface device between a Telecor XL System and digital/analog clocks. It processes time information from the built-in Master Clock and transmits it to the secondary clocks. It also processes messages for display on Telecor digital clocks.

**RS232-XL:** A second RS232 port can be obtained with the addition of the RS232-XL Interface Card. This allows a second PC to be connected for programming, system diagnostics, and event logging purposes. In addition, a connection to a parallel printer can also be obtained.

**CID-SLCB Single Line Console Board**



The CID-SLCB is an interface board that provides access to the XL System from the buildings PABX. In addition the board transmits caller ID information from the Telecor System, into the PABX. This allows for the ability to display room number and call priority information on PABX extensions.

**PBI-6-MA/PBI-RG-MA PABX INPUT UNIT**



The PBI-6-MA is an interface card that allows DTMF telephones from a separate system to access the XL system and initiate intercom calls and paging announcements. The PBI-RG-MA is identical, but with the addition of a built-in 90-volt ring generator for Single Line Console integration.



## TERMINATION EQUIPMENT

### ATP-AX2 AUDIO TERMINATION PANEL

Provides termination facilities for up to 5 low impedance microphones and 3 audio sources (tuner, tape and aux) as well as connections to an external power amplifier and power supply unit.

### TM-2X25 TERMINAL BLOCK

Used to terminate the facility's equipment. It is a pre-wired 66 terminal block with 100 paired termination clips, and two 25-pair female RJ-21 connectors. Each one terminates up to 25 four-wire station cables.

### TCH CABLE ASSEMBLY

A pre-wired double-ended connector/cable with a male RJ-21 connector on each end. The cable utilizes a 24-gauge solid cable in a 25 twisted-pair configuration. It interconnects the TM-2X25 to the IOP, THP and DBP cards.

## TELECOR XL COMPONENT SPECIFICATIONS

### XL/BASIC

#### System Capacity:

Plug-in card slots: 17  
Audio Channels: 3  
Duplex Links: 4 Global + 4 per THP card (20 Links Maximum)  
Room Stations: 300 (Speakers/Call Switches)  
Staff Telephones: 125 Single Line Phones  
Consoles: 4 MCC-300s (expandable in increments of 4)  
Paging Zones: 32  
Program Zones: 32  
Dimensions: 17.25" l x 15.75" d x 12.5" d (43.8 cm x 40 cm x 31.8 cm)

Weight: 20 lbs (9 kg)

#### Master Clock:

Accuracy: Real Time Clock/60 Hz Clock/Atomic Clock  
1536 Events

Capacity: 16

Schedules: 32

Time Zones: 32

#### Second. Clocks:

Telecor Digital & Most Analog

#### Power Supply:

Main: 60 Hz, 115 VAC

Power Consump: 180 watts

Output Voltages: 24 VDC @ 4 Amps

5 VDC @ 4 Amps

Dimensions: 17.25" l x 3.5" h x 10" d (43.8 cm x 8.9 cm 25.4 cm)

Weight: 10 lbs. (4.5 kg)

UL: 813

### ATP-AX2 AUDIO TERMINATION PANEL

Capacity: 5 Low Impedance Mic Inputs  
3 Line Level Inputs  
1 Power Amplifier Connection  
1 Power Supply Connection (PSU-2)  
Termination: Insulation Displacement Connectors @ 0.156"Centers

### CPU-3-XL-MA CENTRAL PROCESSOR UNIT

No. per System: 1  
CCU Slot Occupancy: 1 slot  
Current Consumption: 450 mA @ 5 VDC

### ABU-3A-MA/ABU-3B-MA AUDIO BUFFER UNIT

No. per System: 1 (Single Channel)  
2 (Dual Channel)  
CCU Slot Occupancy: 2 slots per card  
Current Consumption: 100 mA @ 24 VDC  
5 mA @ 5 VDC  
Intercom Amplifier: 12 Watts, 25 Volt, balanced output  
Paging Output: 0 dBm  
Frequency Response: Intercom: Speech Filtered  
Paging: 20-20 kHz +/- 1 dB

### CCP-300-MA Control Console Port Card

Capacity: 4 Administrative Consoles  
No. Per System: 1 per 4 Administrative Consoles  
CCU Slot Occupancy: 1 unit  
Current Consumption: 40 mA @ 24 VDC  
150 mA @ 5 VDC  
Field Wiring: CAT-3 or CAT-5

### DBP DRIVER BUFFER CARD

Maximum Per System: 4 cards  
CCU Slot Occupancy: 1 slot  
Capacity: 25 LED Indicators  
Current Consumption: 10 mA @ 24 VDC when idle  
20mA @ 24 VDC / LED  
50 mA @ 5 VDC  
Termination: 1 x RJ-21(female)

### CID-SLCB Single Line Console Board

Port Capacity: 2 Analog Ports  
Input Connections: 5 or 15 ft.  
Max Distance: 200 ft to PABX/Phone  
Operating Voltage: 24.0 VDC, 5.0 VDC  
Current Consumption: 100 ma (24 VDC)  
30 ma (5.0 VDC)  
Slot Requirement: 2 slots  
Dimensions: 9.5"L x 7" W  
Terminations: CID-SLCB to Backplane: DIN multi-pin  
CID-SLCB to Telephone Device: RJ-11  
Weight: 0.68 lbs. (310g)

### PBI-6-MA / PBI-RG-MA PABX INPUT UNIT

Maximum Per System: 2 cards  
CCU Slot Occupancy: 1 slot (2 slots for second PBI)  
Current Consumption: 200 mA @ 24 VDC  
12 mA @ 5 VDC  
Audio Input: 600 ohm  
Dialing Format: DTMF  
EKSU Interface Port: Standard CO port  
Termination: RJ-11 connector  
Ring Voltage: PBI-RG 90-volt (max. 50 mA) (required for SLC applications)

### THP TELEPHONE STATION CARD

Capacity: 24 telephones + 1 telephone/EKSU interface port  
Maximum Per System: 5 station cards  
CCU Slot Occupancy: 2 slots  
Duplex Links: 4 Global Links + 4 Internal Links per Card  
Current Consumption: 260 mA @ 24 VDC  
80 mA @ 5 VDC slot  
Dialing Format: DTMF  
Station Apparatus: Standard single line DTMF telephones  
KSU Interface Port: Designed to connect to KSU station port (DTMF). Requires a 90-volt ring signal from station port to access XL System. Breaks loop current to terminate call.  
Field Wiring: 2-conductor (1 pair) per station  
Termination: 1 x RJ-21(female)

### DTMF-RD-MA RECEIVER/DECODER UNIT

Maximum Per System: 1 card  
CCU Slot Occupancy: 1 slot  
Current Consumption: 170 mA @ 24 VDC  
35 mA @ 5 VDC  
Link Capacity: 4 Links  
Decoders: 4 DTMF

### IOP INTERCOM STATION CARD

Capacity: 25 stations  
Maximum Per System: 12 station cards  
CCU Slot Occupancy: 1 slot  
Channel Capacity: 1  
Current Consumption: 220 mA @ 24 VDC  
80 mA @ 5 VDC  
Audio Load: Single port - 10 watts  
All ports - 50 watts (audio not available on IOP-I)  
Model IOP-4  
Call Initiation: Momentary contact closure  
Field Wiring: 4-conductor (2 x 2 pair) or (per station) (2 x 2 pair + shield)  
Termination: 2 x RJ-21 (female)

### Model IOP-2

Call Initiation: CS-2/4 Call switch  
Field Wiring: 2-conductor (1 pair) per station  
Termination: 1 x RJ-21 (female)

### Model IOP-I

Call Initiation: Momentary contact closure  
Field Wiring: 2-conductor (1 pair) per station  
Termination: 1 x RJ-21 (female)

### Model IOP-O

Call Initiation: Not available  
Field Wiring: 2-conductor (1 pair) per station  
Termination: 1 x RJ-21(female)

### DOP INTERCOM STATION CARD

Capacity: 25 stations  
Maximum Per System: 12 station cards  
CCU Slot Occupancy: 1 slot  
Channel Capacity: 2  
Current Consumption: 220 mA @ 24 VDC  
80 mA @ 5 VDC

#### Audio Load:

Single port - 10 watts  
All ports - 50 watts

#### Call Initiation:

Not available (needs IOP-I or THP card)

#### Fiel Wiring:

2-conductor (1 pair) per station

#### Termination:

1 x RJ-21(female)

### RCD-7-XL REMOTE CLOCK DRIVER

Termination: Insulation Displacement Connectors (0.156" centres)  
Current Consumption: 50 mA @ 24 VDC  
Dimensions: 2.5" W x 9" L PCB

### RS232-XL INTERFACE CARD

Operating Voltage: 5.0 VDC, 24.0 VDC  
Operating Voltage: 5 VDC, 24 VDC  
Current Consumption: 50 mA @ 24 VDC  
400 mA @ 5 VDC  
Serial Comm: 9600 baud  
Buffers: 2 (1 Printer, 1 Terminal)  
Memory Capacity: 2 day event  
CCU Slot Occupancy: 1 slot  
Dimensions: 9.5" L X 7.0" W  
241.3 mm L x 177.8 mm W

#### Termination:

To backplane: DIN Connector

#### Printer/Terminal:

Standard Serial/Printer Cables

### TM-2X25 TERMINAL BLOCK

Capacity: 100 paired termination clips  
Termination: 2 x RJ-21 Connectors  
Wire Size: 20-24 AWG

### TCH CABLE ASSEMBLY

Capacity: 25 Channels  
Length: 5 or 15 ft.  
Terminations: AMS: 1 RJ-21 male connector  
Field: 1 RJ-21 male connector for connections to TM-2X25 Terminal Blocks  
Wire Gauge: 24 AWG

## PARTIAL LIST OF ASSOCIATED EQUIPMENT

MCC-300 Administrative Console  
RCD-7-XL Remote Clock Driver  
TEL-60, 125, 250 Power Amplifiers  
TILA Telephone Line Amplifier  
TTCU-30X2 Touch Tone Control Unit  
XL- WMK Wall Mounting Kit  
XL- RMK Rack Mounting Kit  
T-CDP AM/FM/CD Player  
CDU-MA Console Display Unit Model A  
CS-1, CS-2/4, CS-3 Call Switches  
HS-1301 Administrative Telephones  
HS-1, HS-3 Staff Handsets  
200 Series Equipment Cabinets  
2400 Series Digital/Analog Clocks  
2481-EMD Electronic Message Display  
7003-7(F)(S) Telephone Cabinet Flush/Surface

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