C H A P T E R **1**

Hardware Description

This chapter describes the Cisco 6732 full access device chassis, and the service modules and line interface modules supported by the Cisco 6732 full access device. This chapter includes the following sections:

- Overview
- Components and Features:
    - Chassis
    - Service Modules
    - Line Interface Modules

Overview

The Cisco 6732 full access device multiport-per-slot architecture supports fundamental time division mutliplexing (TDM) and asynchronous transfer mode (ATM) technologies. The Cisco 6732 is compliant with relevant NEBS, ANSI, and Telcordia network element standards. The Cisco 6732 provides the following functionality and services for central office (CO) and large remote terminal (RT) applications:

- Digital Loop Carrier
- GR-303 Gateway
- Integrated Access Device

Digital Loop Carrier

The digital loop carrier (DLC) application uses the Cisco 6732 to accept a variety of voice or data signal sources, multiplexing them onto a common transport medium and de-multiplexing them for delivery to the customer at the far end terminating device.

GR-303 Gateway

The GR-303 gateway application concentrates analog circuits onto a GR-303 interface. The Cisco 6732 uses DSX1 or STS-1 transports to the Class 5 switch and DS1 or DS3 transports to the channel banks. The Cisco 6732 splits the services for delivery to the customer through a remote terminal.

Integrated Access Device

The integrated access device application uses the Cisco 6732 to replace the traditional channel bank unit. The Cisco 6732 can function as a 1/0, 3/1, or 3/1/0 DACS while incorporating voice and data applications on a common platform.
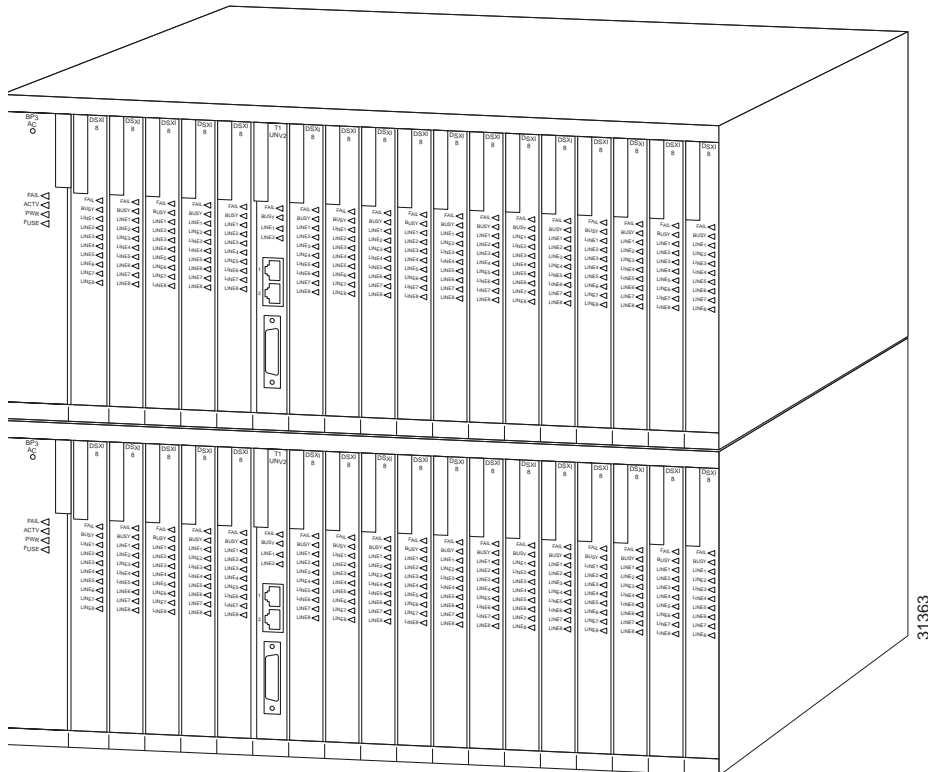
Components and Features

Chassis

The Cisco 6732 chassis is designed for mounting in 19-inch or 23-inch equipment racks. It is a dual-shelf chassis that holds the following:

- Designated-Purpose Slots
- General-Purpose Slots
- Backplane

Figure 1-1   Cisco 6732 Full Access Device Chassis

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Designated-Purpose Slots

The first three slots on the left of each shelf are exclusively designed to support the following Cisco 6732 service modules:

- The first pair of designated slots, labeled BPS-A and BPS-B, exclusively supports the bank power supply (BPS) modules, which provide power to the service modules and passes -48 VDC to the line interface modules.

- The second pair of designated slots, labeled MCC-A and MCC-B, exclusively supports the main control card (MCC) modules, which provide centralized processing, synchronization, and some switching functions. Both stratum 4 and stratum 3 MCC modules are available for the Cisco 6732. The MCC module provides Ethernet 10BaseT connectivity.

- The third pair of designated slots, labeled ACC-A and ACC-B, is reserved for future use.

General-Purpose Slots

Each shelf of the Cisco 6732 provides 16 numbered general-purpose slots for use with line interface modules and selected service modules. The first two general purpose slots on the top shelf support the following service modules, in addition to all line interface modules:

- The first general-purpose slot on the top shelf, labeled AMM-1, supports the alarm maintenance and management (AMM) module, which offers monitoring and reporting functions for the Cisco 6732. The AMM module provides Ethernet 10BaseT and RS-232 connectivity.

- The second general-purpose slot on the top shelf, labeled MTAC-2, supports the metallic test access card with test equipment interface (MTAC-TEI) module, which offers testing interfaces for use with third-party test equipment.

Backplane

The backplane provides the basic architecture and interconnectivity of the Cisco 6732 full access device. The backplane provides all cabling for the Cisco 6732, except for line interface modules with front panel connectors such as the DSX3/CHNL, STSX/CHNL, OC3c-UNI, and T1-2-V35 modules.

Service Modules

Service modules for the Cisco 6732 full access device are hot swappable. They can be inserted into (or removed from) the Cisco 6732 chassis with or without power applied to the system without incurring damage.

The following service modules are available for the Cisco 6732 full access device:

- Bank Power Supply, High Power
- Main Control Card with Stratum 3 Clock
- Main Control Card with Stratum 4 Clock
- Alarm Maintenance and Management
- Bank Ring Generator
- Metallic Test Access Card, Test Equipment Interface

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Bank Power Supply, High Power

The bank power supply, high power (BPS-HP) module supplies power to the main control card (MCC) module and installed service modules, and it passes the -48 VDC current through to the installed line interface modules. The BPS-HP module also provides overcurrent protection for the chassis. One BPS-HP module is required for each MCC module installed in the chassis.

Figure 1-2   BPS-HP Front Panel
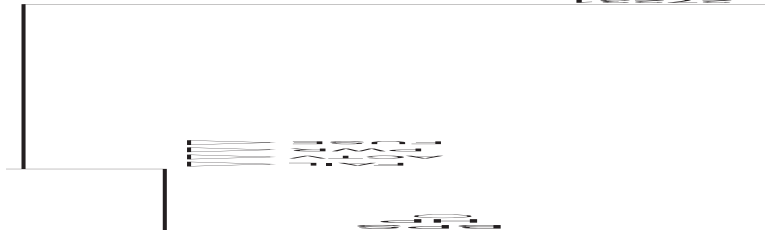
Available Slots

The BPS-HP module must be placed in designated-purpose slots BPS-A or BPS-B.

LEDs

The LEDs on the BPS-HP module indicate chassis and module status. (See Table 1-1.)

Table 1-1   BPS-HP LED Indicators

LED	Status	Condition
FAIL	Red	BPS has failed.
	Off	BPS has not failed.
ACTV	Green	BPS is powering the active MCC.
	Off	BPS is not powering an MCC.
PWR	Green	BPS is supplying bus voltage above the minimum threshold of -42.5 VDC.
	Off	BPS is not supplying voltage.
FUSE	Red	A non-replaceable fuse has blown.
	Off	No fuses have blown.

Connectors

The BPS-HP module does not have any external connectors or interfaces.

Redundancy

Protected (redundant) systems require two BPS-HP modules. One BPS-HP module is inserted in slot BPS-A (to power the service modules in the top shelf) and one in slot BPS-B (to power the service modules in the bottom shelf). If the active BPS-HP module fails, the system switches over to the shelf containing the standby BPS-HP module.

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Main Control Card with Stratum 3 Clock

The stratum 3 clock on the main control card (MCC-STR3) module supports synchronization and holdover requirements for the stratum level 3. Systems can also derive timing from an inbound transport span such as a T1, DSX1, or STSX-1.

Figure 1-3   MCC-STR3 Front Panel
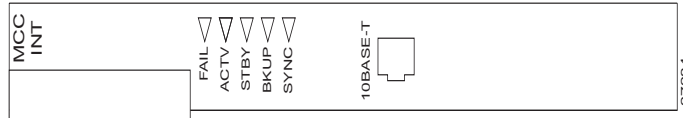
The MCC-STR3 module supports the following functions:

- TDM and ATM interfaces with the line interface modules
- Redundancy (MCC protection switching in 6732 chassis)
- Alarm processing and management
- TDM and ATM centralized switching functions

Available Slots

The MCC-STR3 module must be placed in designated-purpose slots MCC-A or MCC-B.

LEDs

The LEDs on the MCC-STR3 module indicate module and embedded software status. (See Table 1-2.)

Table 1-2   MCC-STR3 LED Indicators

| LED	Status	Condition
FAIL	Red	MCC has failed.
	Off	MCC has not failed.
ACTV	Green	MCC is active.
	Off	MCC is not active.
STBY	Steady yellow	MCC is in standby ready condition.
	Blinking yellow	MCC is establishing communication with active MCC.
	Off	MCC is not provisioned to act as standby.
BKUP	Steady yellow	Embedded software backup is in progress.
	Blinking yellow	Embedded software database is synchronized between active and standby MCCs.
	Off	No backup is in progress.
SYNC	Steady green	MCC is synchronized off a reference.
	Blinking green	MCC is in holdover mode.
	Off	MCC is not synchronized (freerun mode).

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Connectors

The MCC-STR3 module provides a 10Base-T Ethernet interface for system management (for systems without an AMM service module).

Main Control Card with Stratum 4 Clock

The stratum 4 clock on the main common control (MCC-STR4) module supports synchronization and holdover requirements for the stratum level 4. Systems can also derive timing from an inbound transport span such as a T1, DSX1, or STSX-1.

Figure 1-4   MCC-STR4 Front Panel
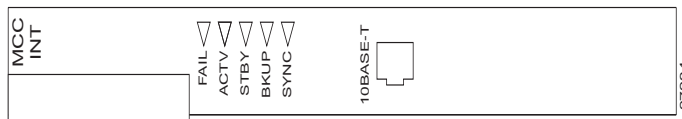
The MCC-STR4 module supports the following functions:

*   TDM and ATM interfaces with the line interface modules
*   Redundancy (MCC protection switching in 6732 chassis)
*   Alarm processing and management
*   TDM and ATM centralized switching functions

Available Slots

The MCC-STR4 module must be placed in designated-purpose slots MCC-A or MCC-B.

LEDs

The LEDs on the MCC-STR4 module indicate module and embedded software status. (See Table 1-3.)

Table 1-3   MCC-STR4 LED Indicators

LED	Status	Condition
FAIL	Red	MCC has failed.
	Off	MCC has not failed.
ACTV	Green	MCC is active.
	Off	MCC is not active.
STBY	Steady yellow	MCC is in standby ready condition.
	Blinking yellow	MCC is establishing communication with active MCC.
	Off	MCC is not provisioned to act as standby.

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Table 1-3   MCC-STR4 LED Indicators (continued)

BKUP	Steady yellow	Embedded software backup is in progress.
	Blinking yellow	Embedded software database is synchronized between active and standby MCCs.
	Off	No backup is in progress.
SYNC	Steady green	MCC is synchronized off a reference.
	Blinking green	MCC is in holdover mode.
	Off	MCC is not synchronized (freerun mode).

Connectors

The MCC-STR4 module provides a 10BaseT Ethernet interface for system management (for systems without an AMM service module).

Alarm Maintenance and Management

The alarm maintenance and management (AMM) module provides alarm contacts for activation of external circuitry and alarm inputs for basic telemetry entry for connection to the bay alarm panel of a central office. Some alarm inputs are available for customer-defined alarms.

Figure 1-5   Alarm Maintenance and Management Front Panel

The AMM module supports the following functions and features:

- 10Base-T and RS-232 interfaces for system provisioning and management
- Alarm contacts for activation of external circuitry and alarm inputs for basic telemetry entry for connection to the CO bay alarm panel.
- Configurable alarms via the Element Management System (EMS).
- Alarm cut-off (ACO) pushbutton

Available Slots

The AMM module must be placed in general-purpose slot AMM-1.

LEDs

The LEDs on the AMM module indicate system alarm status. (See Table 1-4.)

Table 1-4   AMM LED Indicators

LED	Status	Condition
FAIL	Red	AMM has failed.
	Off	AMM has not failed.

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Table 1-4   AMM LED Indicators

CRIT	Red	AMM is reporting a system level critical alarm.
	Off	No critical alarms exist.
MAJR	Red	AMM is reporting a system level major alarm.
	Off	No critical alarms exist.
MINR	Yellow	AMM is reporting a system level minor alarm.
	Off	No minor alarms exist.
ACO	Green	Alarm cut-off is active.
	Off	Alarm cut-off is not active.

Alarm Cut-off

The ACO push-button on the AMM front panel provide access to the alarm cut-off function. Pushing the ACO push-button toggles the state of the alarm cut-off and the ACO LED.

If the ACO is in the on state, the AMM ACO LED will light and alarm outputs 3 through 6 will be cleared. Any new alarms will reactivate the corresponding alarm output.

If the ACO is in the off state, the AMM ACO LED will be off and alarm outputs 1 through 3 will remain in their current states.

Connectors

The AMM module provides two interfaces for system management:

*   10BaseT Ethernet interface RJ-45 connector
*   RS-232 connector

The AMM module transmits system alarm information using the prewired alarm output and alarm input backplane cables. See Chapter 3, "Cabling and Wiring," for alarm cabling information.

Bank Ring Generator

The bank ring generator (BRG) module provides the appropriate ring voltage and synchronization signal to the chassis backplane for use by the RPOTS/16 and RUVG/8 analog line interface modules.

Figure 1-6   BRG Front Panel

*   20 REN (20 Watts) ring capacity
*   85 Vrms ringing voltage
*   20 Hz ringing frequency
*   Sine wave ringing
*   Ring cadence following

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Ring Capacity

The REN number indicates the quantity of ringers which may be connected to a single telephone line and still ring. The total of all RENs of the telephones connected to the one line must not exceed the value 5, or some or all of the ringers may not operate.

Available Slots

The BRG module can be placed in general-purpose slots 1 through 32.

LEDs

The LEDs on the BRG module indicate module status. (See Table 1-5.)

Table 1-5   BRG LED Indicators

LED	Status	Condition
FAIL	Red	BRG has failed.
	Off	BRG has not failed.
ACTV	Green	BRG is in service, and proper ring voltage is applied.
	Off	BRG is not in service.

Alternately blinking FAIL and ACTV LEDs indicate that a slot has been provisioned in EMS for another type of module.

Connectors

The BPS-HP module does not have any external connectors or interfaces.

Metallic Test Access Card, Test Equipment Interface

The metallic test access card, test equipment interface (MTAC-TEI) module provides front panel access to third-party test equipment and buses. The line monitor unit includes relays and plugs that allow external test boxes to monitor signals.

Figure 1-7   MTAC Front Panel
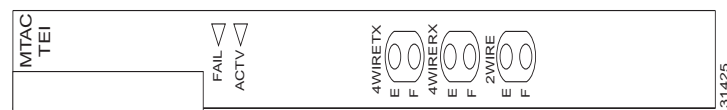
- Metallic test and monitor access from line interface test buses to an external remote test unit (RTU).
- Two-wire analog circuit and DS1 interface testing.
- RS-232 interface for control connection to the RTU.
- Front panel metallic access via front panel jacks to the line interface test buses.
- Ringing voltage and coin voltage sources to the RTU.

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Available Slots

The MTAC-TEI module must be placed in general-purpose slot MTAC-2.

LEDs

The LEDs on the MTAC-TEI module indicate module status. (See Table 1-6.)

Table 1-6   MTAC-TEI LED Indicators

LED	Status	Condition
FAIL	Red	MTAC has failed.
	Off	MTAC has not failed.
ACTV	Green	A test is in progress.
	Off	No tests are in progress.

Connectors

The MTAC-TEI module offers external interfaces for use with a third-party test probe:

- Four-wire transmit (Tx): equipment (E) and facility (F) sides.
- Four-wire receive (Rx): equipment (E) and facility (F) sides.
- Two-wire: equipment (E) and facility (F) sides.

Connectivity is also provided through three pre-wired backplane cables labeled "MTAC (LC2)." These cables provide connectivity to your third-party test equipment; please consult the test equipment documentation for proper cabling. See Chapter 3, "Cabling and Wiring," for alarm cabling information.

Line Interface Modules

Line interface modules for the Cisco 6732 are hot swappable. They can be inserted into (or removed from) the Cisco 6732 chassis with or without power applied to the system without incurring damage. Line interface modules can be inserted in any order.

The following line interface modules are available for the Cisco 6700 series:

- FXS/16
- RPOTS/16
- RUVG/8
- ISDN-BRI/8
- DSX1/8
- T1-2-V35
- DSX3/CHNL
- OC3c-UNI
- STSX1/CHNL
- MSDSL-2W

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FXS/16

Each FXS/16 line interface module provides 16 ports of FXS or short-drop POTS/FXS service. The module also provides integrated ring generation and line test functionality.

Figure 1-8   FXS/16 Front Panel

- Reverse loop current feed
- On-hook transmission
- Self test capacity of analog interfaces

Specifications

- Loop limit: 630 ohms
- Off-hook line feed: 25mA (+/- 23mA)
- Impedance: 600 ohms
- Signaling: loop start, ground start, and wink start

Available Slots

The FXS/16 module can be placed in general-purpose slots 1 through 32.

LEDs

The LEDs on the FXS/16 module indicate module status. (See Table 1-7.)

Table 1-7   FXS/16 LED Indicators

LED	Status	Condition
FAIL	Red	FXS/16 has failed.
	Off	FXS/16 has not failed.
BUSY	Green	FXS/16 is in service, and at least one line is in service.
	Off	FXS/16 in not in service, or no lines are in service.

Alternately blinking FAIL and BUSY LEDs indicate that a slot has been provisioned in EMS for another type of module.

Connectors

Use the backplane subscriber cables to connect the FXS/16 module. See Chapter 3, "Cabling and Wiring," for subscriber cable information.

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RPOTS/16

Each RPOTS/16 line interface module provides 16 circuits of remote POTS service.

Figure 1-9   RPOTS/16 Front Panel

Specifications

- Loop length: 1930 ohms
- Current feed: constant current
- Impedance: 900 ohms
- Insertion loss: Tx 2dB 0.5dB, Rx 0dB 0.5dB
- Signaling: loop start
- On-hook voltage: >43V

Available Slots

The RPOTS/16 module can be placed in general-purpose slots 1 through 32.

LEDs

The LEDs on the RPOTS/16 module indicate module status. (See Table 1-8.)

Table 1-8   RPOTS/16 LED Indicators

LED	Status	Condition
FAIL	Red	RPOTS/16 has failed.
	Off	RPOTS/16 has not failed.
BUSY	Green	RPOTS/16 is in service, and at least one line is in service.
	Off	RPOTS/16 in not in service, or no lines are in service.

Alternately blinking FAIL and BUSY LEDs indicate that a slot has been provisioned in EMS for another type of module.

Connectors

Use the backplane subscriber cables to connect the RPOTS/16 module. See Chapter 3, "Cabling and Wiring," for subscriber cable information.

Specifications

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RUVG/8

Each RUVG/8 line interface module provides eight circuits supporting POTS, E/UVG, or FXS services.

Figure 1-10   RUVG/8 Front Panel

Specifications

- Signaling: loop start, ground start, or wink start
- Current feed: reverse loop or constant current
- Impedance: 600 ohms
- DC supervisory range: 1930 ohms

Available Slots

The RUVG/8 module can be placed in general-purpose slots 1 through 32.

LEDs

The LEDs on the RUVG/8 module indicate module status. (See Table 1-9.)

Table 1-9   RUVG/8 LED Indicators

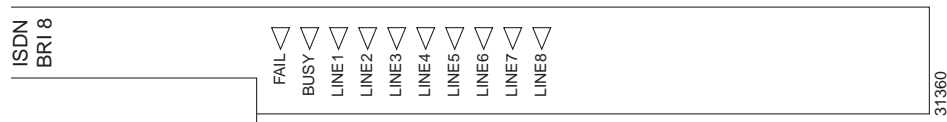| LED	Status	Condition
FAIL	Red	RUVG/8 has failed.
	Off	RUVG/8 has not failed.
BUSY	Green	RUVG/8 is in service, and at least one line is in service.
	Off	RUVG/8 in not in service, or no lines are in service.

Alternately blinking FAIL and BUSY LEDs indicate that a slot has been provisioned in EMS for another type of module.

Connectors

Use the backplane subscriber cables to connect the RUVG/8 module. See Chapter 3, "Cabling and Wiring," for subscriber cable information.

ISDN-BRI/8

Each ISDN-BRI/8 line interface module provides eight U-interface ports of basic rate ISDN service at 144 kbps.

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Figure 1-11   ISDN-BRI/8 Front Panel

Available Slots

The ISDN-BRI/8 module can be placed in general-purpose slots 1 through 32.

LEDs

The LEDs on the ISDN-BRI/8 module indicate module and line status. (See Table 1-10.)

Table 1-10   ISDN-BRI/8 LED Indicators

LED	Status	Condition
FAIL	Red	ISDN-BRI/8 has failed.
	Off	ISDN-BRI/8 has not failed.
BUSY	Green	ISDN-BRI/8 is in service, and at least one line is in service.
	Off	ISDN-BRI/8 in not in service, or no lines are in service.
LINE (1-8)	Green	Line is in service and has no errors.
	Red	Line is in near-end or far-end failure.
	Off	Line is not in service.

Alternately blinking FAIL and BUSY LEDs indicate a slot that has been provisioned in EMS for another type of module.

Connectors

Use the backplane subscriber cables to connect the ISDN-BRI/8 module. See Chapter 3, "Cabling and Wiring," for subscriber cable information.

DSX1/8

The DSX1/8 is a DSX1 interface with eight ports.

Figure 1-12   DSX1/8 Front Panel

The DSX1/8 module supports the following functions and features:

• ESF, SF, and SLC96 framing formats.

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- Support for DS1, frame relay, and IP services
- Channelized 1:0 cross-connects
- Supports N:1 facility or equipment protection switching
- May be designated as timing source for system synchronization

Specifications

- Data rate: 1.544 Mb/s
- Frame format: ESF, SF, SLC96
- Line coding: AMI, B8ZS
- Line buildout: 0-655 ft in 133-foot increments

Available Slots

The DSX1/8 module can be placed in general-purpose slots 2 through 32.

LEDs

The LEDs on the DSX1/8 module indicate module and line status. (See Table 1-11.)

Table 1-11   DSX1/8 LED Indicators

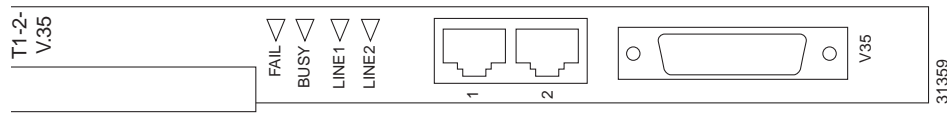| LED	Status	Condition
FAIL	Red	MSDSL-2W has failed.
	Off	MSDSL-2W has not failed.
BUSY	Green	MSDSL-2W is in service, and at least one line is in service.
	Off	MSDSL-2W is not in service, or no lines are in service.
LINE 1-4	Steady green	Line is synchronized, in service, and has no errors.
	Blinking green	Line is in loopback mode.
		Line is in Loss of Signal or Loss of Frame alarm state.
	Red	Line is in far-end failure, AIS, yellow alarm, or idle alarm state.
	Yellow	Line is not synchronized or not in service.
	Off	

Alternately blinking FAIL and BUSY LEDs indicate that a slot has been provisioned in EMS for another type of module.

Connectors

Use the backplane subscriber cables to connect the DSX1/8 module. See Chapter 3, "Cabling and Wiring," for subscriber cable information.

T1-2-V35

Each T1-2-V35 line interface module provides two ports that can each be provisioned for DSX1 or T1 line buildouts (LBO). The card also features a 26-pin V.35 port on the faceplate of the module.

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Figure 1-13   T1-2-V35 Front Panel

Available Slots

The T1-2-V35 module can be placed in general-purpose slots 2 through 32.

LEDs

The LEDs on the T1-2-V35 module indicate module and line status. (See Table 1-12.)

Table 1-12   T1-2-V35 LED Indicators

LED	Status	Condition
FAIL	Red	MSDSL-2W has failed.
	Off	MSDSL-2W has not failed.
BUSY	Green	MSDSL-2W is in service, and at least one line is in service.
	Off	MSDSL-2W is not in service, or no lines are in service.
LINE 1-4	Steady green	Line is synchronized, in service, and has no errors.
	Blinking green	Line is in loopback mode.
		Line is in Loss of Signal or Loss of Frame alarm state.
	Red	Line is in far-end failure, AIS, yellow alarm, or idle alarm state.
	Yellow	Line is not synchronized or not in service.
	Off	

Alternately blinking FAIL and BUSY LEDs indicate that a slot has been provisioned in EMS for another type of module.

Connectors

The T1-2-V35 module provides three interfaces for user traffic:

- Two T1 interfaces using RJ-45 connectors
- One V.35 connector

DSX3/CHNL

Each DSX3/CHNL line interface module provides DS3 service through a coaxial interface. Channelized 3:1:0 cross-connects are supported. Data transfer rate is 44.736 Mbps.

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Figure 1-14   DSX3/CHNL Front Panel
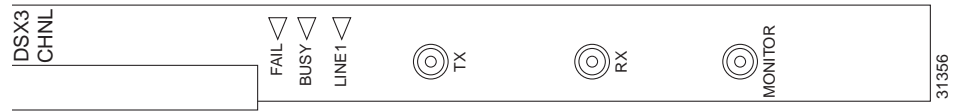
Available Slots

For full bandwidth support, the DSX3/CHNL module must be placed in general-purpose slots 17-20. A DSX3/CHNL module can be placed in slots 2 through 16 or 21 through 32, but only 10 DS1s are available in these slots.

LEDs

The LEDs on the DSX3/CHNL module indicate module and line status. (See Table 1-13.)

Table 1-13   DSX3/CHNL LED Indicators

LED	Status	Condition
FAIL	Red	DSX3/CHNL has failed.
	Off	DSX3/CHNL has not failed.
BUSY	Green	DSX3/CHNL is in service, and at least one line is in service.
	Off	DSX3/CHNL in not in service, or no lines are in service.
LINE 1	Green	Line is in service and has no errors.
	Red	Line is in near end or far end failure.
	Off	Line is not in service.

Alternately blinking FAIL and BUSY LEDs indicate that a slot has been provisioned in EMS for another type of module.

Connectors

The DSX3/CHNL module provides three interfaces for user traffic:

- Transmit (Tx)
- Receive (Rx)
- Monitor

Each interface uses a BNC connector designed for use with a 75-ohm coaxial cable.

OC3c-UNI

The OC3c-UNI line interface module provides an interface for point-to-point OC3c-UNI data transfer at 155 Mbps.

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Figure 1-15   OC3c-UNI Front Panel

Available Slots

For full bandwidth support, the OC3c-UNI module must be placed in general-purpose slots 17 through 20. An OC3c-UNI module can be placed in slots 21 through 32, but available bandwidth is reduced to 30 Mbps.

> **Note** A maximum of two OC3c-UNI modules can be placed in the Cisco 6732 chassis.

LEDs

The LEDs on the OC3c-UNI module indicate module and line status. (See Table 1-14.)

Table 1-14   OC3c-UNI LED Indicators

LED	Status	Condition
FAIL	Red	OC3c-UNI has failed.
	Off	OC3c-UNI has not failed.
TX	Green	Far end of connection is receiving data.
	Off	Far end of connection is not receiving data.
RX	Green	Near end of connection is receiving data.
	Off	Near end of connection is not receiving data.
LINE	Green	Line is in service and has no errors.
	Red	Line is in near end or far end failure.
	Off	Line is not in service.

Connectors

The OC3c-UNI module provides two user traffic interfaces using a female duplex SC connector. These bidirectional optical ports accommodate single-mode intermediate reach fiber cable.

STSX1/CHNL

Each STSX1/CHNL line interface module provides an STS-1 interface supporting channelized DS1/DS0 service at 51.84 Mbps. Channelized 3:1:0 cross-connects are supported.

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Figure 1-16   STSX1/CHNL Front Panel
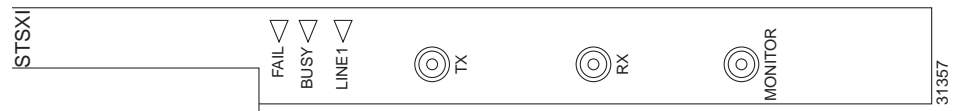
Available Slots

For full bandwidth support, the STSX1/CHNL module must be placed in general-purpose slots 17 through 20. An STSX1/CHNL module can be placed in slots 2 through 16 or slots 21 through 32, but only 10 DS1s are available in these slots.

LEDs

The LEDs on the STSX1/CHNL module indicate module and line status. (See Table 1-15.)

Table 1-15   STSX1/CHNL LED Indicators

| LED	Status	Condition
FAIL	Red	STSX1/CHNL has failed.
	Off	STSX1/CHNL has not failed.
BUSY	Green	STSX1/CHNL is in service, and at least one line is in service.
	Off	STSX1/CHNL in not in service, or no lines are in service.
LINE 1	Green	Line is in service and has no errors.
	Red	Line is in near-end or far-end failure.
	Off	Line is not in service.

Connectors

The DSX3/CHNL module provides three interfaces for user traffic:

- Transmit (Tx)
- Receive (Rx)
- Monitor

Each interface uses a BNC connector designed for use with a 75-ohm coaxial cable.

MSDSL-2W

Each MSDSL-2W provides 2-wire MSDSL service to four subscriber ports at transfer rates up to 2.3 Mbps.

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Figure 1-17   MSDSL-2 Front Panel
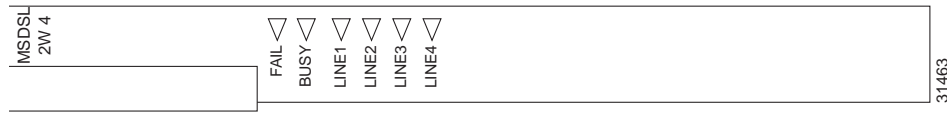
The MSDSL provides 4 independent CAP MSDSL interfaces capable of payload rates of 72 kbps to 2320 kbps. Each interface can be independently provisioned for the following:

- Number of DS-0s in the payload
- HTU-C or HTU-R mode of operation
- Transport of HDLU, TDM, ATM or FR cells
- Interoperability with a Telmax CPE device

The primary application of this card is to provide single pair copper transport between 6732 nodes or between a 6732 node and a Telmax CPE device.

Available Slots

The MSDSL-2W module can be placed in general-purpose slots 2 through 32.

LEDs

The LEDs on the MSDSL-2W module indicate module and line status. (See Table 1-16.)

Table 1-16   MSDSL-2W LED Indicators

LED	Status	Condition
FAIL	Red	MSDSL-2W has failed.
	Off	MSDSL-2W has not failed.
BUSY	Green	MSDSL-2W is in service, and at least one line is in service.
	Off	MSDSL-2W is not in service, or no lines are in service.
LINE 1-4	Green	Line is synchronized, in service, and has no errors.
	Red	Line is in alarm state.
	Off	Line is not synchronized or not in service.

Connectors

Use the backplane subscriber cables to connect the MSDSL-2W module. See Chapter 3, "Cabling and Wiring," for subscriber cable information.