

Quick Reference  
CATALYST 8510 AND  
LIGHTSTREAM 1010  
HARDWARE INFORMATION



# Chassis Installation



**WARNING:** Before you install, operate or service the system, read the *Site Preparation and Safety Guide*. This guide contains important safety information you should know before working with the system.

Attaching Brackets and Guides



Installing a Chassis in a Rack



**WARNING:** Two people are required to lift the chassis. To prevent damage to the chassis and components, never attempt to lift the chassis by the handles on the power supplies or on the interface modules.

# Ports and Cabling

## ROUTE PROCESSOR PORTS

Management port

Console port

## CABLE CONNECTORS

RJ-45

EIA/TIA-232

## PORT ADAPTER/ INTERFACE MODULE PORTS

10/100BaseT, T1/E1,  
CES, CE1 Frame Relay

100BaseFX

155 Mbps, 622 Mbps

Gigabit Ethernet

E1, CES, DS3/E3, CDS3

25 Mbps

## CABLE CONNECTORS

RJ-45, RJ-48c

MT-RJ fiber

SC-type fiber

BNC

96-pin Molex

# Replacing Components

Securing an ESD Strap



WARNING: Always connect the ESD wrist strap to the ESD strap connection at the top left side of the chassis before removing any component.

Inserting and Removing Flash PC Cards

Inserting an Interface Module

Inserting a New Fan

Inserting a Port Adapter

Changing a Power Supply



WARNING: Always turn off the power supply unit before removing it. While holding the AC or DC power supply handle with one hand, place your other hand underneath to support the bottom of the supply.

# LEDs and Troubleshooting

# Distance and Pinout Information

## Maximum Transmission Distances

| Transceiver Speed    | Cable Type                                | Max. Distance Between Stations |
|----------------------|---|--------------------------------|
| 10/100-Mbps Ethernet | Category 5 UTP                            | 328 feet (100 m)               |
| 100-Mbps Ethernet    | Multimode fiber                           | 1640 feet (500 m)              |
| 1000-Mbps Ethernet   | Multimode fiber                           | 1640 feet (500 m)              |
| 1000-Mbps Ethernet   | Single-mode fiber                         | 16404 feet (5 km)              |
| 25-Mbps ATM          | Category 5 UTP                            | 328 feet (100 m)               |
| 155-Mbps ATM         | Single-mode fiber                         | 9 miles (15 km)                |
| 155-Mbps ATM         | Single-mode fiber, long reach             | 18 miles (30 km)               |
| 155-Mbps ATM         | Multimode fiber                           | 1.2 miles (2 km)               |
| 622-Mbps ATM         | Single-mode fiber                         | 9 miles (15 km)                |
| 622-Mbps ATM         | Single-mode fiber, long reach             | 25 miles (40 km) <sup>1</sup>  |
| 622-Mbps ATM         | Multimode fiber                           | 1640 feet (500 m)              |
| T1, 1.544-Mbps ATM   | Category 5 twisted-pair                   | 650 feet (198 m)               |
| E1, 2.048-Mbps ATM   | Category 5 twisted-pair and FTP (120 ohm) | 650 feet (198 m)               |
| E1, 2.048-Mbps ATM   | Coaxial cable (75 ohm)                    | 650 feet (198 m)               |
| CDS3, 45-Mbps        | Coaxial cable                             | 450 feet (137 m)               |
| CE1, 2.048-Mbps ATM  | Category 5 twisted-pair                   | 650 feet (198 m)               |
| CES T1               | Category 5 twisted-pair and FTP           | 650 feet (198 m)               |
| CES E1               | Category 5 twisted-pair and FTP (120 ohm) | 820 feet (248.5 m)             |
| CES E1               | Coaxial cable (75 ohm)                    | 650 feet (198 m)               |
| DS3, 45-Mbps         | Coaxial cable                             | 450 feet (137 m)               |
| E3, 34-Mbps          | Coaxial cable                             | 1299 feet (396 m)              |

1. If you are attaching a short cable to the 622-Mbps long-reach port adapter, you must add 10 dB of attenuation to the cable or the transmitter might overdrive the receiver and introduce data errors.

## Pinouts to RJ-45 Connectors

The 10/100 Mbps Ethernet interface module with unshielded twisted-pair (UTP) ports supports RJ-45 connectors.

| Pin | Signal | Description     |
|-----|--------|-----------------|
| 1   | RXD+   | Receive data +  |
| 2   | RXD-   | Receive data -  |
| 3   | NC     | No connection   |
| 4   | NC     | No connection   |
| 5   | NC     | No connection   |
| 6   | NC     | No connection   |
| 7   | TXD+   | Transmit data + |
| 8   | TXD-   | Transmit data - |

## Pinouts to RJ-48c Connectors

The T1, E1, CES T1 and CES E1 port adapters support RJ-48c connectors.

| Pin | Description   |
|-----|---------------|
| 1   | Receive ring  |
| 2   | Receive tip   |
| 3   | No connection |
| 4   | Transmit ring |
| 5   | Transmit tip  |
| 6   | No connection |
| 7   | No connection |
| 8   | No connection |

# Specifications and Regulatory Compliance Information

| Description   | Specifications   |
|---|--|
| Switch and processor capacity                                 | 10-Gbps shared memory, nonblocking switch fabric up to 32 KB frames  |
| Dimensions (H x W x D)  | Chassis: 10.4 x 17.25 x 18.4 in (26.4 x 43.1 x 46.0 cm)<br>Processor card and carrier module:<br>1.2 x 14.4 x 16 in (3.0 x 36.6 x 40.6 cm)<br>Port adapter: 1.2 x 6.5 x 10 in (3.0 x 16.5 x 25.4 cm)<br>Power supply: 2.7 x 6.0 x 15.3 in (6.9 x 15.2 x 38.9 cm) |
| Weight  | Empty chassis: 32 lb (15.5 kg)<br>Fully populated chassis: approximately 130 lb (59.09 kg)<br>AC power supply: 11 lb (4.98 kg)<br>DC power supply: 10 lb (4.54 kg)   |
| Airflow   | 95 cfm through the system fan assembly   |
| Operating temperature   | 32 to 122°F (0 to 50°C)  |
| Nonoperating temperature                                      | -40 to 167°F (-40 to 75°C)   |
| Humidity  | 10 to 90%, noncondensing   |
| Altitude  | -500 to 10,000 ft (-52 to 3048 m)  |
| Microprocessor  | 100-Mhz MIPS R4700   |
| AC total output   | 388W maximum   |
| AC-input voltage  | 100-240 VAC wide input with power factor correction  |
| AC frequency  | Auto sensing limits: 100 to 127/200 to 240 VAC, 8/4A, 47 to 63 Hz  |
| AC current rating   | 8/4A with the chassis fully populated  |
| Power supply load   | 376W maximum configuration, 200W typical with max configuration  |
| DC voltages supplied and steady-state maximum current ratings | System: +5V @ 70A<br>+12V @ 2A<br>+24V @ 0.2A<br>Processor: +5V @ 15A<br>+24V @ 25mA<br>+12V @ 500mA   |

| Description           | Specifications  |
|-----------------------|---|
| Memory                | 8-MB Flash memory SIMM (upgradable to 16 MB)<br>64-MB DRAM<br>256-KB boot EPROM<br>128-KB SRAM<br>No Flash PC card installed by default (accepts 8-, 16-, or 20-MB Intel Series 2+ Flash PC cards)  |
| Regulatory Compliance | UL 1950 (U.S.A.)<br>CSA 950 (Canada)<br>EN60950 (European Union)<br>IEC 950 (International)<br>AS/NZS 3260 (Australia/New Zealand)<br>TS001:1997 (Australia)<br>21CFR1040 (Laser - U.S.A.)<br>EN60825 (Laser - European Union)<br>IEC60825 (Laser - International)<br>CE Marking (European Union)<br>FCC Part 15 (CFR 47) Class A (U.S.A.)<br>VCCI Class A with UTP and Class B with FTP cables (Japan)<br>EN55022 Class A with UTP and Class B with FTP cables (European Union)<br>CISPR 22 Class A with UTP and Class B with FTP cables (International)<br>AS/NZS 3548 Class A with UTP and Class B with FTP cables (Australia/New Zealand) |



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