Product Overview

The Catalyst 1200 series switch is an Ethernet-to-Ethernet and Ethernet-to-CDDI/FDDI switch that provides high-speed transparent bridging between Ethernets and high-speed translational bridging between Ethernet and Copper Distributed Data Interface (CDDI) or Fiber Distributed Data Interface (FDDI). The Catalyst 1200 series switch includes four models: WS-C1201, WS-C1202, WS-C1211, and WS-C1212. Using content-addressable memory (CAM) technology, models WS-C1201 and WS-C1211 can learn up to 1,024 Ethernet addresses, and models WS-C1202 and WS-C1212 can learn up to 4,096 Ethernet addresses.

The switch has eight 10-Mbps Ethernet ports and two 100-Mbps CDDI or FDDI ports that comply fully with the FDDI and American National Standards Institute (ANSI) draft specifications for CDDI multilevel transmission (MLT-3) A and B ports.

The eight 802.3 Ethernet ports are 10BaseT (T for twisted pair) on the WS-C1201 model or 10BaseF (F for fiber) on the WS-C1211 model.

The switch can sit on a desktop, mount on a wall, or mount in an Electronic Industries Association (EIA)–compliant 19-inch open or closed rack.

Note   Throughout this document, the Catalyst 1200 series switch is referred to as Catalyst Switch or the switch.

Summary of Features

Following are the features of the Catalyst 1200 series switch:

- Easy installation, configuration, and management

- Dual attachment station (DAS) with a single Media Access Control (MAC) address (single attachment station [SAS] configuration is also possible)

- Electronic Industries Association/Telecommunications Industry Association (EIA/TIA)-232 administration interface port (referred to as admin. port in this document)

Note   Prior to the acceptance of the EIA/TIA standard by the ANSI committee, it was referred to as the RS-232 recommended standard.

- 10BaseT stackable unified management (SUM) port

- Ring and port status light-emitting diode (LED) indicators for all ports

- Nonvolatile memory for software configuration data

- 1 megabyte (MB) of Flash memory

- External optical bypass control switch capability

- Simple Network Management Protocol (SNMP) agent

- Downloadable software upgrades

- Remote access to the admin. port through support of Telnet

- Multiprotocol support (see the appendix "Supported Protocols and MIBs")

- Support for IP fragmentation during translation bridging

- Support for Management Information Bases (MIBs) (see the appendix "Supported Protocols and MIBs")

- Transparent bridging between Ethernet LAN segments or ports

- Translational bridging between Ethernet LAN segments and FDDI

- Institute of Electrical and Electronic Engineers (IEEE) 802.1d spanning-tree protocol
- Virtual LAN (VLAN) support for Internet Protocol (IP) routing with Routing Information Protocol (RIP)
- Access lists—intelligent frame filtering and custom filtering
- Port monitoring using the Switched Port Analyzer (SPAN)
- Remote monitoring
- IP multicasting support
- Support for SNMP MIB
- VLAN support for bridging
- IP Helper support for Bootstrap Protocol (BOOTP) and Dynamic Host Configuration Protocol (DHCP)

The Catalyst 1200 series switch complies fully with FDDI Station Management (SMT) Specification Revision 7.3. A network administrator can monitor and control the switch from anywhere on the network using any SNMP management station.
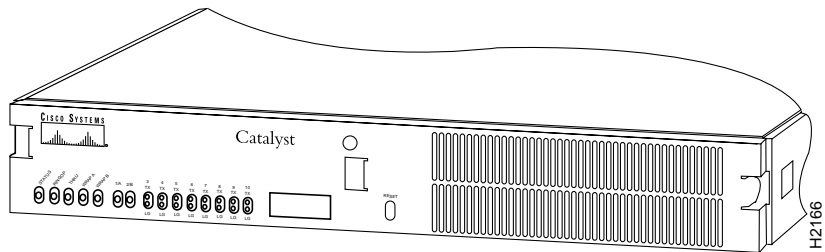

Note   Throughout this publication, CDDI refers specifically to the CDDI/MLT-3 standard.
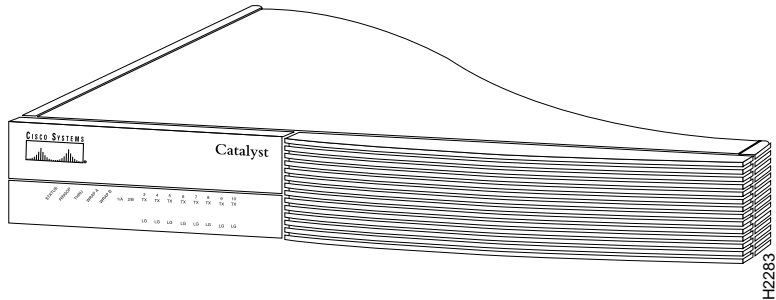

Front Panel

The front panel of the switch has LED indicators for switch, ring, and port status as shown in Figure 1-1 and Figure 1-2.

Figure 1-1   Catalyst Series Switch—Front-Panel View (Plastic Panel Removed)

**Figure 1-2   Catalyst Series Switch—Front-Panel View (Plastic Panel Installed)**

Note   The Catalyst 1200 series switch is shipped with the plastic front and side panels removed. Instructions for installing the front and side panels are included in the section "Wall-Mounting" in the chapter "Hardware Installation." The side panels are required for wall-mounting.

LEDs

Table 1-1 lists the descriptions of the front-panel LEDs, which are shown in Figure 1-3 and Figure 1-4. Use the LED descriptions in Table 1-1 to verify proper operation and for troubleshooting.
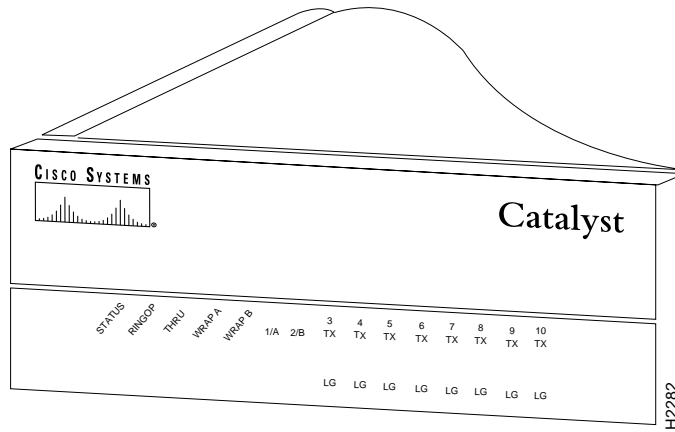
Figure 1-3   LED Indicators—Partial Front-Panel View (Plastic Panel Removed)
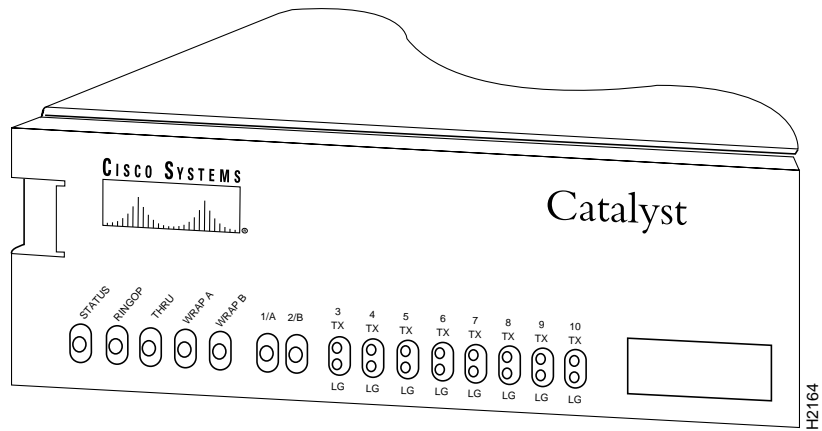
Figure 1-4   **LED Indicators—Partial Front-Panel View (Plastic Panel Installed)**

Table 1-1   **Front-Panel LED Descriptions**

LED	Description
Status	The switch performs a series of self-tests and diagnostics. If all the tests pass, the status LED is green. If any test fails, it is red (or orange for a minor fault).
Ringop	Indicates if the ring is operational. If the ring is operational, the ringop LED is green. If the ring is not operational, the ringop LED is off.
Thru	If the CDDI/FDDI A and B ports are connected to the primary and secondary rings, the thru LED is green; otherwise it is off.
Wrap A	If the CDDI/FDDI A port is connected to the ring and the B port is isolated, the wrap A LED is green; otherwise it is off.
Wrap B	If the CDDI/FDDI B port is connected to the ring and the A port is isolated, the wrap B LED is green; otherwise it is off.

LED	Description
Port 1/A status	If the CDDI/FDDI A port is connected to the ring, the port 1/A LED is green. If the CDDI/FDDI A port receives a signal but fails to connect, or a dual homing condition exists, the port 1/A LED is orange. The LED is turned off if no receive signal is detected.
Port 2/B status	If the CDDI/FDDI B port is connected to the ring, the port 2/B LED is green. If the CDDI/FDDI B port receives a signal but fails to connect, or a dual homing condition exists, the port 2/B LED is orange. The LED is turned off if no receive signal is detected.
Port n TX[1]	Whenever an Ethernet port is transmitting a packet, the transmit (TX) LED is green for approximately 50 ms[2]; otherwise it is off.
Port n LG[1]	The link good (LG) LED displays the link integrity status of a LAN port. The LG LED is green if the link integrity is good. The LG LED blinks to indicate that a collision is detected on this link.

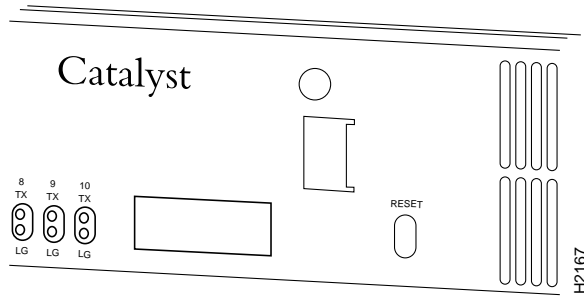1. Where n is port number 3 through 10.

2. ms = milliseconds.

Reset Switch

Access to the reset switch, which is located behind the front panel, is through a small hole approximately one and a half inches to the right of the front-panel LEDs. (See Figure 1-5 or Figure 1-6.)
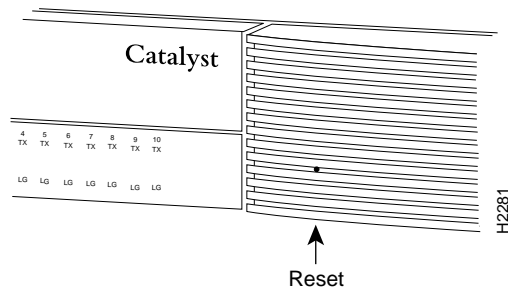
Figure 1-5   Reset Switch—Partial Front-Panel View (Plastic Panel Removed)

Figure 1-6   Reset Switch—Partial Front-Panel View (Plastic Panel Installed)

**Note**   To reset the switch, use a thin tool (such as a small screwdriver) to press and release the button.

Rear Panel

The rear panel of the switch has an AC power receptacle, an optical bypass switch receptacle and LED, an EIA-TIA-232 admin. port, a card slot for an optional CDDI or FDDI A/B port card, eight Ethernet 10BaseT (WS-C1201) or 10BaseF (WS-C1211) ports, and the SUM interface port (and LEDs). (See Figure 1-7.)

**Figure 1-7   Catalyst Series Workgroup Switch—Two Rear-Panel Views**
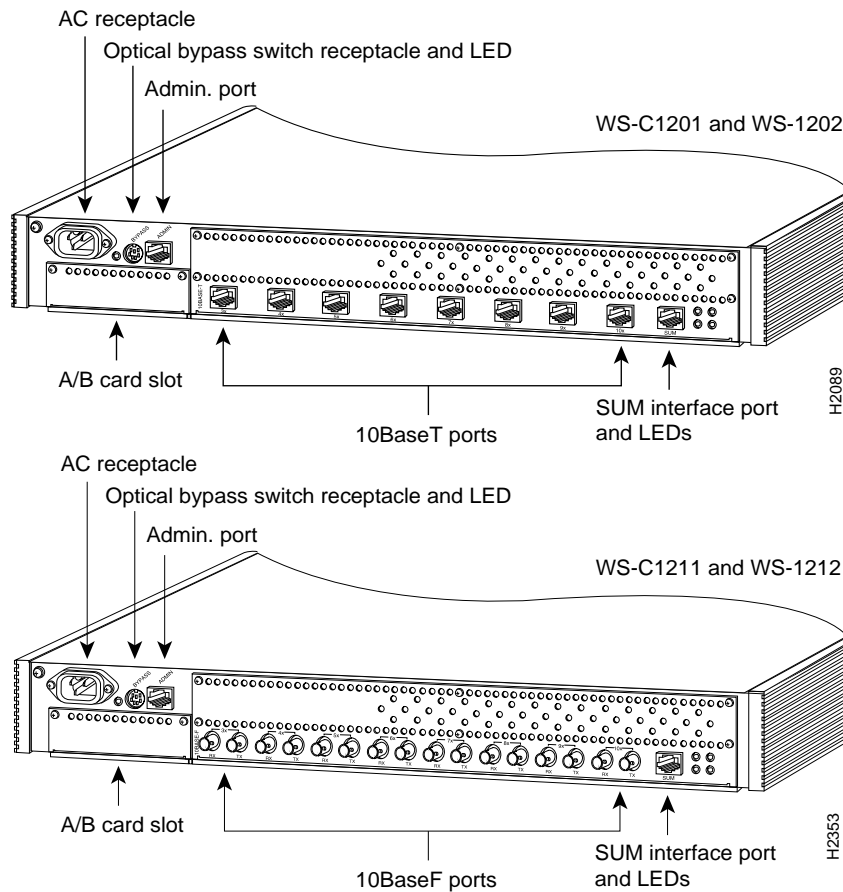
The chassis has no power ON/OFF switch. Power is applied when the power cable is connected between the switch and the AC source.

A/B Port Card Slot

The A/B card slot supports the following configuration: single-MAC DAS with dual homing configuration for FDDI (can also be used as an SAS). The A/B card slot also accepts CDDI/MLT-3 port cards. See Figure 1-8 for unshielded twisted-pair (UTP) and shielded twisted-pair (STP) connections.

Following are the three models of A/B port cards available:

- WS-C1511—DAS multimode FDDI, which accepts FDDI media interface connectors (MICs). (See 1 in Figure 1-8.)

- WS-C1513—DAS CDDI/MLT-3, which accepts category 5, UTP, modular RJ-45 connectors. (See 2 in Figure 1-8.)

- WS-C1514—DAS single-mode FDDI, which accepts standard FDDI ST-type connectors. (See 3 in Figure 1-8.)

Figure 1-8   CDDI and FDDI A/B Port Cards

1   (WS-C1511)

2   (WS-C1513)

3   (WS-C1514)

H2111
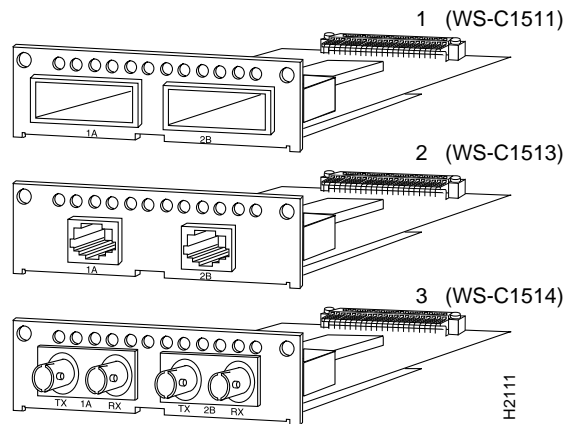
The A/B port cards allow the switch to connect to a dual ring as a peer connection or to the master (M) port of another concentrator (cascaded tree configuration). To add an A and B port to the switch, insert an optional A/B port card. For A/B port card installation, see the chapter "Hardware Installation."

Power Receptacle

The power receptacle uses the AC power cord supplied with the switch. The power supply automatically accepts either 110 volts alternating current (VAC) or 230 VAC. To apply power, attach the power cord. To disconnect power, remove the power cord. There is no On/Off switch.

Optical Bypass Switch Receptacle and LED

The 6-pin mini–Deutsche Industrie Norm (DIN) connector is used to connect an external optical bypass switch to the switch. When idle, the optical bypass switch removes the nonfunctional dual attachment switch from the ring.

An activated bypass switch inserts the Catalyst Switch into the ring. Use an optical bypass switch only with the A/B port card option. If you install or remove an optical bypass switch, you must reset the Catalyst Switch. The bypass LED is on when the bypass switch is connected.

Admin. Port

The admin. port is the console terminal connection to the switch. To use the admin. port, connect an EIA/TIA-232 terminal (configured for 9,600 baud, no parity, eight data bits, and one stop bit), modem, or network management workstation. The admin. port enables you to perform the following functions:

- Configure the switch

- Monitor network statistics and errors

- Configure SMT and SNMP agent parameters

- Download software updates to the switch

Ethernet Ports

Ports 3 through 10 are IEEE 802.3 Ethernet 10BaseT (for the WS-C1201) or IEEE 802.3 Ethernet 10BaseF (for the WS-C1211). The 10BaseT ports use straight-through, RJ-45, modular UTP cables for connection to end systems, and cross-connect, RJ-45, modular cables for connection to other switches and concentrators. The 10BaseF ports use ST-type connections and multimode optical-fiber cable.

SUM Port

The stackable unified management (SUM) port is an out-of-band Ethernet 10BaseT port using a female RJ-45 UTP connection. The SUM port uses an RJ-45, modular, cross-connect cable when connecting to end systems; and straight-through cable when connecting to hubs. You can connect the SUM port to an Ethernet 10BaseT hub for Telnet, File Transfer Protocol (FTP), and SNMP management connection to the switch. For LED locations, refer to Figure 1-9. Table 1-2 lists the functions of the four SUM port LEDs.

Note The Catalyst Switch cannot bridge or route packets from a port to the console terminal connected through the SUM port.

**Figure 1-9** **SUM Port LEDs—Partial Rear-Panel View**
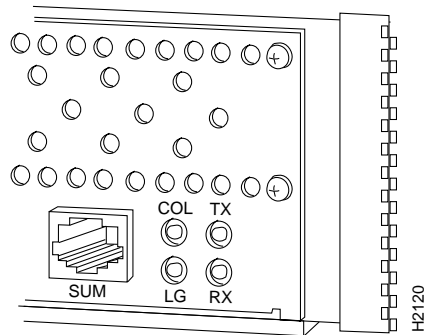
Table 1-2   SUM Port LED Descriptions

LED	Descriptions
COL	If collisions are detected on the SUM port connection, the yellow collision (COL) LED is on; otherwise it is off.
TX	If the SUM port is transmitting packets, the green transmit active (TX) LED is on; otherwise it is off.
LG	If Ethernet integrity is good, the green link good (LG) LED is on; otherwise it is off.
RX	If the SUM port is receiving packets, the green receive active (RX) LED is on; otherwise it is off.

CDDI-FDDI Translator

The optional CDDI-FDDI translator (model number WS-C703) provides a connection between CDDI and FDDI interfaces. The CDDI-FDDI translator includes an AC power adapter. The translator accepts an FDDI media interface connector (MIC) on one end and a CDDI (RJ-45) connection on the other end. Figure 1-10 shows two views of the translator.

Figure 1-10   CDDI-FDDI Translator—Two Views
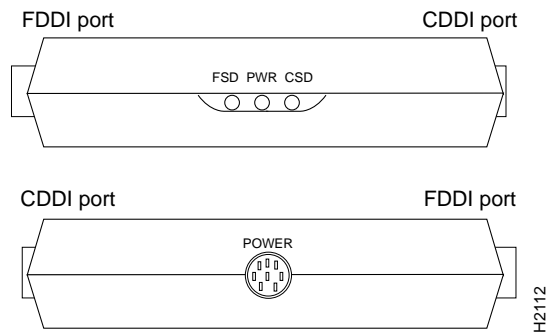
One side of the translator has three status LEDs: FDDI signal detect (FSD), power (PWR), and CDDI signal detect (CSD). The other side of the translator has the power connector.

Technical Specifications

Table 1-3 lists the specifications for the switch.

Table 1-3   Technical Specifications

Specification	Description
Dimensions (H x W x D)	2.7 x 17.4 x 16" (6.96 x 44.2 x 40.6 cm)
Weight	17 lb (7.7 kg)
AC and DC	100 to 120 VAC, 2.0A maximum, 60 Hertz (Hz) 200 to 240 VAC, 1.0A maximum, 50 Hz 12A @ +5 VDC, 1A @ +12 VDC, 0.5A @ –12 VDC
Thermal dissipation	80W, maximum (273.04 Btus/hr)
Operating temperature	32 to 104 F (0 to 40 C)
Storage temperature	–40 to 167 F (–40 to 75 C)
Relative humidity	10 to 90% (noncondensing)
EMI[1] certifications	FCC Class A (47 CFR, Part 15) CISPR 22 Class A VDE Class A VCCI Class 1
Safety approvals	UL: 1950 CSA-C22.2 No. 950-M89 EN60950
Microprocessor	20 megahertz (MHz) 68EC030 for the NMP[2]
Memory	1 MB of Flash memory 4 MB of packet-buffer DRAM[3] 32 kilobytes (KB) of NVRAM[4]
Interface ports	Eight IEEE 802.3 Ethernet 10BaseF (WS-C1211) Eight IEEE 802.3 Ethernet 10BaseT (WS-C1201) A/B CDDI ports or A/B FDDI ports EIA/TIA-232 admin. port 10BaseT SUM port

Specification	Description
Network connectors	10BaseF (ST) 10BaseT (RJ-45) CDDI (RJ-45) FDDI (MIC or ST) Optical bypass switch: 6-pin mini-DIN SUM port: RJ-45 Admin. port: RJ-45
Network management	SMT 7.3 SNMP agent RMON agent (optional)
MIBs	See the appendix "Supported Protocols and MIBs"
LED indicators	Concentrator status Ringop Thru Wrap A Wrap B Traffic meter Link status (each link)
Maximum station-to-station cabling distance	625/125-micron multimode fiber: 1.24 miles (2 km) 50/125-micron multimode fiber: 1.24 miles (2 km) 8/125-micron single-mode fiber: 18.6 miles (30 km) Category 5 UTP[5]: 328' (100 m) IBM Type 1 or Type 2 STP[6]: 328' (100 m)

FDDI transmit power levels:
Single-mode fiber
	Average optical power:
	  Maximum: –4.0 dBm[7]
	  Minimum: –7.0 dBm

Multimode fiber	Maximum: –14.0 dBm Minimum: –18.5 dBm

Specification	Description
FDDI receive power levels:	
Single-mode fiber	Average optical sensitivity: –33 dBm
	Average maximum input power: –14 dBm
Multimode fiber	Average optical sensitivity: –34 dBm
	Average maximum input power: –14 dBm

1. EMI = electromagnetic interference.
2. NMP = network management processor.
3. DRAM = dynamic random-access memory.
4. NVRAM = nonvolatile random-access memory.
5. UTP = unshielded twisted-pair.
6. STP = shielded twisted-pair.
7. dBm = decibels per milliwatt.

Technical Specifications