

Catalyst 3000 Family Fast Ethernet Modules

Fast Ethernet Module for Catalyst 3000 Family

Cisco's Catalyst™ 3000 family Fast Ethernet modules provide flexibility, performance and manageability in cost effective packages. These modules are available in two versions. The first are single port modules that provide low cost Fast Ethernet connectivity in half and full duplex modes. The second version are dual port modules with Inter Switch Link (ISL) providing not only higher density than the single port version but also Virtual LAN trunking capability with other Cisco switches and routers through the ISL protocol. Using ISL, VLANs can be created logically between other switches and routers. Cisco's ISL allows for VLANs to be used within a single device as well as across the entire network. In addition, ISL allows for load sharing in LAN trunking circuits or redundant switch to switch or switch to router connections that work in conjunction with any of these two port Fast Ethernet modules.

Figure 1 Catalyst 3000 Fast Ethernet Modules



The Catalyst 3000 family has other module options including 10 Mbps Ethernet, 155 Mbps ATM, and 100VGAnyLAN.

The single and dual Fast Ethernet modules are available in UTP and fiber media options. The available modules are:

- Single port 100BaseTX using RJ45 connector
- Single port 100BaseFX using ST connector
- Dual port 100BaseTX with ISL using RJ45 connectors
- Dual port 100BaseFX with ISL using SC connectors

All Fast Ethernet modules provide wire-speed performance for network connection of high-end servers, routers, and Fast Ethernet hubs. Each of these modules offers superior performance in forwarding, buffering, and per-port addresses to meet the needs of demanding network applications. Users can select operation of full duplex (200 Mbps throughput) or half duplex (100 Mbps throughput) modes. All of these Fast Ethernet modules provide IEEE 802.3u standard compliant interfaces and provide extensive interface-level statistics for network management and troubleshooting.

Applications

Fast Ethernet provides low cost, high performance throughput for applications such as finance, engineering, intranet servers, and server farms. The Catalyst 3000 family of Fast Ethernet modules is ideal for connecting network servers or high-performance desktop devices to improve network throughput and response time. Other applications include uplink connections to Fast Ethernet backbone devices such as Fast Ethernet hubs, switches, and routers.

Features and Benefits

- Dual Port Fast Ethernet modules support ISL for deployment and management of large scale virtual LANs (VLANs) across campus internetworks.
- Exceptional throughput and low latency for applications demanding high performance, wire-speed switching. Adaptive cut through switching combines the low latency of cut-through switching with the data checking capabilities of store-and-forward switching.
- Line speed forwarding and filtering. 148,800 pps for high-speed server and backbone connections.
- The individual members of the Catalyst 3000 family have these expansion slot capacities.
 - Catalyst 3000—2 expansion modules
 - Catalyst 3100—1 expansion module
 - Catalyst 3200—7 expansion modulesSince each member of the Catalyst 3000 family can be stacked, greater density of Fast Ethernet can be achieved by stacking these switches.
- Superior traffic handling capability for switched networks. Large buffer capacity—256 K inbound and 256K outbound per port for a total per port buffer capacity of 512k.
- Large address capacity per port, up to 1700 addresses. Designed for use in backbone or server applications. Demand-aging feature which ages out older addresses based on user selected parameters.
- User configurable for full-duplex operation to provide 200 Mbps “collision-free” point-to-point communication.
- ISL versions support virtual trunking. Each Fast Ethernet port can trunk multiple VLANs to support a variety of VLAN configurations between two Fast Ethernet capable devices.
- Supports the Ethernet MIB. Characterizes per-port broadcast packets, collisions, octets, utilization, and other key statistics.
- Supports IEEE 802.1d spanning-tree for network loop detection and disabling and for redundant fault tolerant connectivity.
- Ease of use:
 - Easy module installation
 - Power-up diagnostics aid troubleshooting and ensures more reliable, troublefree networks.

Fast Ethernet Module Specifications

Forwarding and Filtering

- 48,800 packets per second

Buffers and Addressing

- 1700 addresses per port
- 256K input buffers
- 256K output buffers

Maximum Station-to-Station Cabling Distance

- 100BaseTX: Category 5 UTP: 328' (100m)
- 100BaseFX, half duplex operation: 62.5/125 micron fiber: 1200 ft. (400m)
- 100BaseFX, full duplex operation: 62.5/125 micron fiber: 6000 ft. (2km)

Indicators

- Transmit (green)
- Receive (green)
- Link/Full Duplex (green = half duplex link up, amber = full duplex link up)
- Diagnostic (amber)
- Interfaces
 - 100BaseTX: RJ-45 (female), UTP Category 5
 - Single port 100BaseFX: ST multimode fiber connector (female)
 - Wavelength 1300nm
 - Optical RX Sensitivity: -32dBm @ 62.5/125 micron fiber
 - Optical TX Output Power: -17dBm @ 62.5/125 micron fiber
 - Dual port 100BaseFX: SC multimode fiber connector (female)
 - Wavelength 1300nm
 - Optical RX Sensitivity: -32dBm @ 62.5/125 micron fiber
 - Optical TX Output Power: -17dBm @ 62.5/125 micron fiber

Connections

- Full duplex/half duplex operation mode switch

Standard Network Protocol

- IEEE 802.3u, IEEE 802.3, 802.1d

Physical Specifications

- Each module occupies one expansion module slot in the Catalyst 3000, Catalyst 3100, or Catalyst 3200
- Dimensions: (w x d x h) 6.2 x 9 x 0.9 in. and (0.23 x 15.75 x 22.9 cm)
- Weight: .75 lbs.

Power Requirements

- 100TX: 2 A @ 5 volts
- 100FX: 2 A @ 5 volts

Environmental Conditions

- Operating Temperature: (0 to 50 C)
- Storage Temperature: (-25 to 75 C)
- Relative Humidity: Operating temperature: 8 to 80%, noncondensing
- Storage Altitude: 40,000 ft.

Electromagnetic Emissions Certifications

- CFR47 (Part 15)
- EN 55022 A (Class B)
- VCCI Class 2
- CE Marking



Corporate Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
World Wide Web URL:
<http://www.cisco.com>
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters

Cisco Systems Europe s.a.r.l.
Parc Evolic-Batiment L1/L2
16, Avenue du Quebec
BP 706-Villebon
91961 Courtaboeuf Cedex
France
Tel: 33 1 6918 61 00
Fax: 33 1 6928 83 26

Americas

Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
Tel: 408 526-7660
Fax: 408 526-4646

Asia Headquarters

Nihon Cisco Systems K.K.
Fuji Building
3-2-3 Marunouchi
Chiyoda-ku, Tokyo 100
Japan
Tel: 81 3 5219 6000
Fax: 81 3 5219 6010

Cisco Systems has more than 190 offices in the following countries. Addresses, phone numbers, and fax numbers are listed on the Cisco Connection Online Web site at <http://www.cisco.com>.

Argentina • Australia • Austria • Belgium • Brazil • Canada • Chile • China (PRC) • Colombia • Costa Rica • Czech Republic • Denmark
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