

Catalyst 3000 ATM Module

Cost-Effective Legacy LAN Connection to ATM Backbone Services

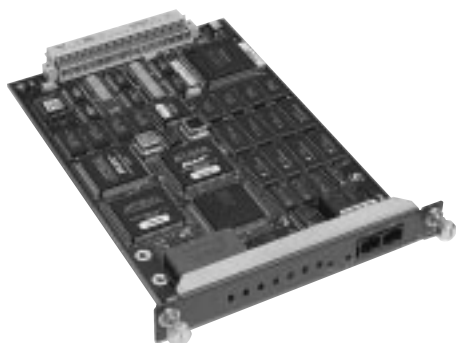
Cisco Systems' industry-standard Catalyst™ 3000 Asynchronous Transfer Mode (ATM) LAN emulation (LANE) module provides legacy LANs with access to ATM-based services in an ATM campus backbone. The module supports a 155-Mbps Optical Carrier (OC)-3c multimode optical interface compliant with the ATM Forum UNI 3.0 and UNI 3.1 specifications.

The Catalyst 3000/3100 or 3200 products can function as highly cost-effective ATM LANE edge devices. Because the Catalyst 3000/3100/3200 architecture is extremely modular, each Catalyst 3100 chassis can support 1 ATM module, each Catalyst 3000/3200 chassis can support up to two ATM modules, and each Catalyst 3000/3100/3200 stacked system can support up to 16 ATM modules.

Integrated LANE Services

Starting with Software Release 2.1, the Catalyst 3000 ATM module supports the entire range of ATM LANE V1.0 services: LANE Server (LES), LANE Configuration Server (LECS), broadcast and unknown server (BUS), and LANE Client (LEC). With Software Release 1.3, only LEC is supported.

Figure 1 Catalyst 3000 ATM Module



VLAN/ELAN ATM Integration

The Catalyst 3000 ATM module is based upon Cisco's industry-leading Internetwork Operating System (Cisco IOS™) software. Cisco IOS features such as Simple Server Redundancy Protocol (SSRP) provide the ability to have redundant LES and LECS for maximum reliability. Support for Cisco's virtual LAN (VLAN) Trunking Protocol (VTP) enables multiple Catalyst 3000, 3100, 3200 and 5000 switches within a network to share emulated LAN (ELAN) or VLAN configuration information; for example, the VTP will automatically map VLANs based upon Fast Ethernet trunks (InterSwitch Link [ISL]) to ELANs based upon ATM trunks.

Cisco offers a complete ATM LANE solution by providing:

- LEC/BUS/LECS/LES on Cisco routers and Catalyst 3000/3100/3200 and 5000 switches
- Inter-ATM ELAN communication via routing
- Cisco LightStream® LS1010 ATM switches

Applications

ATM provides high-performance throughput for applications such as financial, engineering, Internet servers, and database server farms. The Catalyst 3000 ATM module is ideal for connecting legacy LAN equipment to high-performance ATM backbones and servers to improve throughput and response time. In conjunction with other Catalyst 3000 modules, the ATM module can also be used to connect Fast Ethernet hubs, switches, and routers to the ATM backbone.

Features and Benefits

- Scalable system architecture with support of up to 16 ATM modules per Catalyst 3000/3100/3200 stacked system
- Scalable VLAN architecture with support for up to 64 ELANs
- Superior traffic-handling capability with large packet buffer capacity, 1-Mb receive and 512K transmit per port; the 1 Mb of receive buffer allows up to 472 concurrent reassemblies
- Large switched virtual circuit capacity, 1912 Tx virtual channel connections (VCCs), 1912 Rx VCCs for use in backbone or server applications
- Complete LANE solution: LEC/LES/LECS/BUS
- Support for 802.1d spanning tree per ELAN, allowing redundant fault-tolerant connectivity and the prevention of broadcast storms due to loops
- Standards compliant to interoperate with third-party vendor's LEC/LES/LECS/BUS. Fully compatible with ATM Forum-defined standards, including User-Network Interface (UNI) 3.0/3.1, Q.2931 signaling protocols, Interim Local Management Interface (ILMI), and LANE 1.0.

Specifications

Frame-to-Cell Conversion

- ATM adaption layer 5 (AAL5)
- Maximum number virtual circuits: 1912 transmit and 1912 receive
- 472 concurrent reassemblies

Packet Buffering

1-MB input buffers

512-KB output buffers

ATM Forum-Standards Conformance

- 155-Mbps OC-3c-standard compliant PHY
- Frame-to-cell conversion: AAL5
- UNI 3.0 and 3.1
- LANE 1.0
- LANE functions: LEC, LES1, LECS1, and BUS1

Network Management

- Cisco Discovery Protocol (CDP)
- Simple Network Management Protocol (SNMP) Management Information Base (MIB) II (RFC 1213)
- ATM MIB (RFC 1695)
- ILMI (ATM UNI 3.0)
- LANE LEC MIB (ATM LANE 1.0)
- Cisco extensions MIB

SNMP Management Application

- CiscoWorks™ for Switched Internetworking (CWSI)

Maximum Station-to-Station Cabling Distance

- Multimode 62.5/125 micron fiber: 6000 feet (2 km)

Indicators

- Linkup (green)
- Diagnostic (amber)

Interfaces

- Connector Interface: SC duplex connector, 62.5/125 multimode fiber (female)
- SC multimode fiber connector (female)
- Wavelength 1300 nm
- Optical RX Sensitivity: -32 dBm @ 62.5/125 micron fiber
- Optical TX Output Power: -17 dBm @ 62.5/125 micron fiber

Physical Specifications

- Occupies one standard expansion module slot in the Catalyst 3000/3100/3200

Environmental Conditions

- Operating Temperature: (10 to 40 C)
- Storage Temperature: (-25 to 75 C)
- Relative Humidity: Operating 8 percent to 80 percent, noncondensing
- Storage Altitude: 40,000 feet

Safety Certifications

- UL 1950
- UL-C
- EN 60950

Electromagnetic Emissions Certifications

- FCC Class A (Part 15)
- EN 55022 A (CE Mark)
- VCCI Class 2
- CISPR-22B

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