

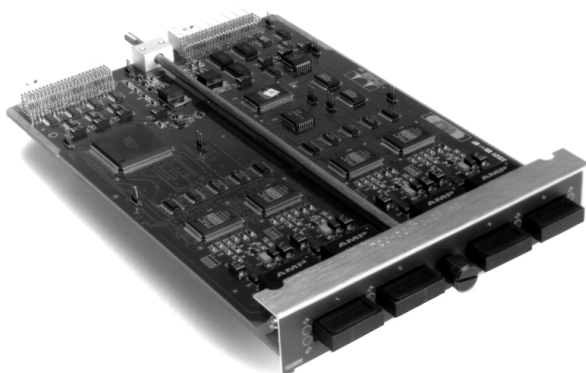
## LightStream 1010 OC-3-ATM Port Adapter Module

The LightStream<sup>®</sup> 1010 is the first member of Cisco Systems' midrange Asynchronous Transfer Mode (ATM) switches for multiservice applications—from the ATM workgroup and campus backbone to metropolitan-area networks and alternative service provider backbones.

Building upon Cisco IOS<sup>™</sup> software as well as supporting the latest ATM Forum specifications and Tag Switching, the LightStream 1010 offers the most complete feature set of any switch in its class. It delivers the performance, scalability, and robustness required for production ATM deployment.

The LightStream 1010 uses a five-slot, modular chassis featuring the option of dual, fault-tolerant, load-sharing power supplies and can support up to eight hot-swappable port adapter modules (PAMs). The 5-Gbps, shared-memory, fully nonblocking switch processor of the LightStream 1010 and the port modules can be used in the Catalyst<sup>®</sup> 5500 multilayer LAN switch. In either platform, up to 32 OC-3 (155-Mbps) ATM ports can be supported.

OC-3-ATM Port Adapter Module



Unlike other switch architectures, the shared-memory architecture of the LightStream 1010 allows all the advanced traffic management and other mechanisms of the switch to be implemented not on the port modules, but on the field-replaceable feature card on the switch processor module. This scenario lowers the costs of the interface modules and facilitates the upgrading of switch features without impacting the port modules. Future members of the LightStream family of switches use all the current PAMs, preserving investments and facilitating the sharing of spares.

The LightStream 1010 and the Catalyst 5500 offer one of the most comprehensive choices for 155-Mbps OC-3 modules, including:

- Four-port unshielded twisted-pair (UTP)
- Four-port multimode fiber (MMF)
- Four-port single-mode fiber (SMF) (intermediate reach)
- Four-port single-mode fiber (SMF) (long reach—laser)
- Four-port mixed-mode; three-port multimode fiber, and one-port single-mode fiber (intermediate reach+)

### Four-Port UTP

Supporting four ports, the 100-ohm, UTP Category 5 (UTP-5) cable, 155-Mbps Synchronous Optical Network (SONET), Synchronous Transport Signal level 3, concatenated (STS-3c)/Synchronous Digital Hierarchy (SDH) Synchronous Transport Module level 1 (STM-1) PAM is ideal for running ATM directly over the installed twisted-pair cabling system. The PAM supports standard RJ-45 connectors for ease of use and supports cable runs of lengths up to 100 meters. The UTP-5 PAM also works with 150-ohm shielded twisted-pair (STP) and 120-ohm Category 5 foiled twisted-pair/screened UTP cable with the appropriate connector conversion devices.

### Four-Port Multimode Fiber

Supporting four ports, the multimode fiber (MMF), 155-Mbps SONET STS-3c/SDH STM-1 PAM is typically used for either desktop or campus backbone links.

### Four-Port Single-Mode Fiber Intermediate Reach

The single-mode fiber (SMF), 155-Mbps SONET STS-3c SDH STM-1 PAM supports four ports, and with its intermediate reach of 15 km, it is ideal for intercampus or metropolitan networks.

### Four-Port SMF Long Reach

The single-mode fiber (SMF), 155-Mbps SONET STS-3c/SDH STM-1 PAM supports four ports, and with its long reach of 40 km, it is ideal for metropolitan or wide-area networks (MAN/WAN).

### Four-Port Mixed-Mode Fiber

The mixed-mode, 155-Mbps SONET STS-3c/SDH STM-1 PAM supports three-port multimode and one-port single-mode fiber intermediate reach plus. Supporting three multimode and a single-mode intermediate reach plus with a span of 30 km, it is a very effective interface for connecting devices such as routers and LAN switches locally, and connecting to another ATM switch in the backbone.

## Specifications

### Hardware

#### Physical Dimensions

- Carrier module (CAM) H x W x D: 1.2 x 14.4 x 16.0 in. (3.0 x 36.6 x 40.6 cm)
- PAM H x W x D: 1.2 x 6.5 x 10 in. (3.0 x 16.5 x 25.4 cm)
- PAM power budget: 10W

### Components

- LightStream 1010, or Catalyst 5500, supports up to four CAMs, each supporting up to two PAMs, for a total of eight PAMs per switch

### Interface Features

- Debugging: Multiple levels of port loopback
- Supports both cell-streaming mode and physical layer convergence procedure (PLCP) framing
- Connectors:
  - UTP: RJ-45
  - Fiber: SC
- A unique traffic-pacing capability allows the aggregate output traffic rate on any port to be set to a rate below the line rate; this capability is useful when communicating with a slow receiver or when connecting to public networks with peak rate tariffs

Each of the ports on the PAM can be configured to support a variety of clocking options:

- Self-timing based on the ATM Switch Processor clock
- Loop timing from the received data stream—ideal for public network connections
- Timing synchronized to a selected master clock port, required to distribute a single clock across a network

Power Budget and Distance Chart for OC-3 PAMs

	TX		R+		Distance	
	Min	Max	Min	Max	km	Miles
OC-3 UTP (Category 3)	n/a	n/a	n/a	n/a	0.05	—
OC-3 UTP (Category 5)	n/a	n/a	n/a	n/a	0.1	—
OC-3 MM	-14	-20	-14	-30	2	1.2
OC-3 IR	-8	-15	-8	-30	15	9
OC-3 IR+	-3	-8	-3	-32	30	18
OC-3 LR	0	-5	-10	-30	40	25
IR= Intermediate Reach LR= Long Reach						



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