

Packet OC-3 Interface Processor for Cisco 7000 Series Routers

Packet OC-3 Interface Processor

With the new Packet OC-3 Interface Processor for Cisco 7500 and 7000/RSP series routers, Cisco offers industry-leading broadband data interface bandwidth to support the most demanding applications across both local-area and wide-area networking environments.

Operating at 155 Mbps, the Packet OC-3 interface provides the highest available interface bandwidth for packet-based traffic and is completely compatible with SONET and Synchronous Digital Hierarchy (SDH) network facilities.

By using standard packet protocols with efficient overhead structures, the Packet OC-3 Interface Processor maximizes data throughput and line utilization for expensive, high-bandwidth facilities.

Highest Available Interface Bandwidth for Packet-Based Traffic



In 1991, Cisco pioneered the packet-based High-Speed Serial Interface (HSSI[®]) to meet the need for high-speed data transport over 45-Mbps DS-3 facilities. Over the last five years, carriers worldwide have invested heavily in SONET/SDH equipment, making SONET/SDH the most widely deployed broadband networking technology. And over the same period the bandwidth requirements of data applications have grown dramatically. The new Packet OC-3 interface now enables these broadband data applications to efficiently access this extensive broadband transport infrastructure. Equipped with OC-3 interfaces, packet-based networking equipment can match the interface bandwidths supported by Asynchronous Transfer Mode (ATM) while providing much higher bandwidth efficiencies.

In wide-area networking applications, the Packet OC-3 interface can directly connect to both carrier and private SONET and SDH facilities. SONET/SDH facilities often provide the most reliable transport, because they can be configured based on dual counter-rotating ring topologies. In local-area networking, Packet OC-3 interfaces can be used to provide direct broadband links between routers in a campus or building without the need for an intermediate switch.

Cisco's Packet OC-3 Interface Processor provides a single OC-3 155-Mbps port and is available with either single-mode or multimode interfaces. Packet data is transported using Point-to-Point Protocol (PPP) and is mapped into the STS-3c/STM-1 frame. The Packet OC-3 interface is compliant with RFC 1619, "PPP over SONET/SDH," and RFC 1662, "PPP in HDLC-like Framing." The

encapsulations used apply only seven bytes of transport overhead per frame, which is less than half of that involved with ATM using ATM adaptation layer 5 (AAL5) and line card control (LCC) Subnetwork Access Protocol (SNAP) encapsulations. The Packet OC-3 Interface Processor can operate in any Cisco 7500 series or Cisco 7000 series system equipped with a Route Switch Processor (RSP). In Cisco 7000 series routers, the Packet OC-3 interface processor can access the system's CxBus; in Cisco 7500 series systems it can utilize the full gigabit-per-second bandwidth provided by the Cisco 7500 CyBus.

The Packet OC-3 Interface Processor operates on a version of the Cisco Internetwork Operating System (Cisco IOS™) software that will support distributed switching and distributed services capabilities.

Features

- Standards-compliant SONET/SDH interface
- Supports full-duplex operation at 155 Mbps
- Intermediate reach optical interface with single-mode fiber
- Optical interface with multimode fiber
- Supports SONET/STS-3c and SDH/STM-1 framing and signaling overhead
- Online insertion and removal (OIR), enabling users to remove, add, or replace interface processors on line

Product Numbers

- POSIP-OC3-20-SM, POSIP-OC3-20-MM. Single and multi-mode packet over SONET/SDH Distributed Switching (DSW) capable with 1MB SRAM, 16MB DRAM
- POSIP-OC3-40-SM, POSIP-OC3-40-MM. Single and multi-mode packet over SONET/SDH DSW and Distributed Services (DS) capable with 2MB SRAM, 32MB DRAM

Specifications

Physical Specifications

- Occupies one slot in any Cisco 7500 series or Cisco 7000 series with RSP
- Weight: 5 lbs (2.25 kg)

Environmental Specifications

- Operating Temperature: 32 to 104 F (0 to 40 C)
- Storage Temperature: -4 to 149 F (-20 to 65 C)
- Relative Humidity: 10 to 90%, noncondensing

Safety Certifications

- UL 1950
- CSA C22.2 No. 950-M29
- IEC 950
- EN60950

Electromagnetic Emissions Certifications

- FCC Class A
- EN55022A Class B
- CISPR-22 Class B
- VCCI Class 2

CE Mark

- IEC 801-2, 3, 4, 5, 6, 11

Optical Power Budget—Single-Mode

- 16 dB—approximately 9 miles (15 km)
- Transmit power (at wavelength 1260–1360 nm): -15 to -8 dBm
- Receive power: -31 to -8 dBm
- Complies with Bellcore GR-253 Intermediate Reach Specification

Optical Power Budget—Multimode

- 11.5 dB—approximately 1.5 miles (3 km)
- Transmit power (at wavelength 1270–1380 nm): -18.5 to -14 dBm
- Receive power: -30 to -14 dBm

Connector

- SC-duplex connector for network interface

LEDs

- Enabled LED—Packet OC-3 is powered and active
- Rx Carrier LED—Indicates there is light detected on the Rx fiber
- Rx Packet LED—Indicates a packet was received on the interface

Encapsulations

- RFC 1619 Point-to-Point Protocol over SONET/SDH
- RFC 1662 Point-to-Point Protocol in HDLC-like Framing

Network Management

- SNMP agent v1 (RFC 1155-1157)
- MIB II (RFC 1213)



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