

Packet-over-DS3 Port Adapter Modules Cisco 7200, 7400 and 7500 Series

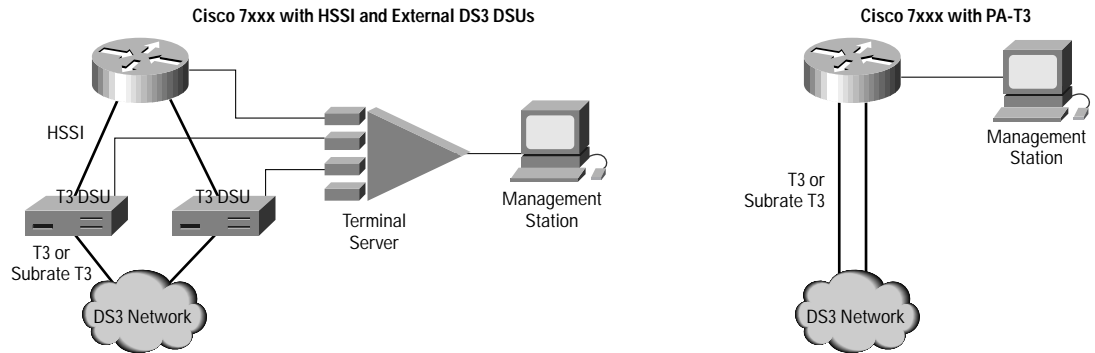
Cisco's PA-T3+ and PA-2T3+ Packet-over-DS3 port adapters for the Cisco 7200, Cisco 7500, and Cisco 7400 Series routers offer high-density, highly manageable DS3 line termination. Demand for high-capacity corporate backbones, high-speed access to the global Internet, and trunking connections for service provider internetworking has led to growth in clear-channel DS3 connections that has outpaced all other types and speeds of leased lines. This growth has placed tremendous strains on the abilities of service providers and network managers to provision and manage new DS3 connections. With integrated line interface units data service units (DSUs) that allow DS3 lines to be directly terminated on a Cisco router, the Cisco PA-T3+ and PA-2T3+ port adapters simplify DS3 line management, reduce provisioning cost, and free valuable rack space.

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DS3 port adapters simplify DS3 line connectivity



To support the widest range of operational environments and to offer the greatest flexibility in provisioning clear-channel DS3 connections, the PA-T3+ and PA-2T3+ port adapters take a groundbreaking step and bring together proprietary subrate and scrambling features of T3 DSU vendors Digital Link, Larscom, and ADC Kentrox. Subrate support in the PA-T3+ and PA-2T3+ port adapters maximizes the application of these products in service provider environments for tiered DS3 services. By simultaneously supporting interoperability with a wide range of third-party DSU vendors, the PA-T3+ and PA-2T3+ port adapters offer the flexibility to support installed equipment without locking customers into a proprietary solution.

The PA-T3+ and PA-2T3+ one- and-two port T3 port adapters provide direct connectivity to T3 lines for full-duplex communications at the DS3 rate of 44.736 MHz. Each T3 port consists of a pair of 75-ohm BNC coaxial connectors, one for transmit data and one for receive data, along with six LED indicators for line status. Using the PA-2T3+ port adapter on the Cisco 7500 Series router, up to four T3 ports can be operated simultaneously on each Versatile Interface Processor (VIP2-40 and higher). On the Cisco 7200 Series router, up to six T3 ports can be supported. On the 7400 Series router, up to 2 can be supported.

Specifications

Ordering Information	
PA-T3+	One-port clear-channel DS3 port adapter
PA-T3+=	Recommended for high-performance uplink and trunking applications
PA-2T3+	Two-port clear-channel DS3 port adapter
PA-2T3+=	Recommended for high-density or T3 line aggregation applications

System Configurations

- Up to three T3 ports per VIP2, with each port running at T3 clock rate
- Up to four T3 ports per VIP2, with subrate clocking enabled

VIP performance limitations may apply to configurations with multiple T3s

- Up to six T3 ports per Cisco 7200 (four T3 ports, two PA-2T3 port adapters, if Cisco 7200 Fast Ethernet input/output [i/o] controller used):

PA-T3 and PA-2T3 port adapters are classified as high-speed port adapters for the Cisco 7200 Series router

- Up to two T3 ports per Cisco 7400 Series router, with subrate clocking enabled
- Full online insertion and removal (OIR) support on Cisco 7200 Series router; OIR of VIP only on the Cisco 7500 Series router.

DS3 Specifications

- DSX-3 level interface with dual female 75-ohm BNC coaxial connectors per port (separate RX and TX)
- Full- and half-duplex connectivity at DS3 rate (44.736 MHz)
- Scrambling and subrate support of major DSU vendors
- Line build-out: programmable for up to 450 feet of 734A or equivalent coaxial cable or up to 225 feet for 728A or equivalent coaxial cable
- Unframed, C-Bit, or M13 framing (software selectable)
- B3ZS line coding
- 16- and 32-bit cycles redundancy check (CRC) supported. (16-bit default)
- DS3 FEAC channel support
- 24-hour history maintained for error statistics and failure counts
- DS3 alarm/event detection (once per second polling)
 - AIS: alarm indication signal
 - OOF: out of frame
 - LCV: line code violation
 - EXZ: excessive zeros
 - FERF: far-end receive failure
- Serial encapsulations
 - HDLC: High-Level Data Link Control
 - PPP: Point-to-Point Protocol
 - Frame Relay
 - ATM-DXI: ATM Data Exchange Interface

LEDs per port

- RCLK LED (Green) to indicate the port has detected a receive clock signal
- AIS LED (Yellow) to indicate the port is receiving an AIS
- OOF LED (Yellow) to indicate the port is in receive OOF state
- FERF LED (Yellow) to indicate the port is receiving a FERF

- Local Loop (Yellow) to indicate DS3 port looped locally
- Remote Loop (Yellow) to indicate the far-end DS3 port is looped

Physical Specifications

- Occupies one port adapter bay on any VIP2 model or one port adapter slot in any Cisco 7200 series router

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

Compliance

- DS3 physical layer
 - ANSI T1.107
 - AT&T TR-NWT-00499
- Safety
 - UL1950 3rd Edition/CSA C22.2, No.950 (U.S. and Canada)
 - AS/NZS 3260 (Australia/New Zealand)
 - EN60950/EN41003 (Europe)
 - IEC 950 (national deviations)
- Emissions
 - FCC Part 15, Class A
 - AS/NZS 3548 (Australia/New Zealand)
 - EN55022 (CISPR 22) Class B (Europe)
- Immunity
 - IEC 1000-4-2 (ESD)
 - IEC 1000-4-3 (Radiated)
 - IEC 1000-4-4 (Fast Transients)
 - IEC 1000-4-5 (Power Line Surge)
 - IEC 1000-4-6 (Injected RF)
 - IEC 1000-3-2 (Harmonic Distortions)



Corporate Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters
Cisco Systems Europe
11 Rue Camille Desmoulins
92782 Issy-les-Moulineaux
Cedex 9
France
www-europe.cisco.com
Tel: 33 1 58 04 60 00
Fax: 33 1 58 04 61 00

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
Capital Tower
168 Robinson Road
#22-01 to #29-01
Singapore 068912
www.cisco.com
Tel: +65 317 7777
Fax: +65 317 7799

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