Multichannel T3 Port Adapter for Cisco 7000 Series Routers

Product Overview

The Cisco® 1-Port Multichannel Port Adapter for the Cisco 7200 Series Routers (Cisco 7201 and 7301 Routers), Cisco 7304, Cisco 7500 and Cisco 7600 Routers decreases cost and increases manageability of WAN links by eliminating the need for any external channel service units (CSUs)/digital service units (DSUs) or multiplexers while providing up to 128 software-configurable WAN connections per single-wide port adapter. It supports both full-rate T1 connections and channelized T1 connections on the same card as well as handling all major encapsulations, including ISDN and Frame Relay.

With these capabilities, the family of multichannel interfaces eliminates the need for separate interface types for separate connection types. At a cost per T1 port less than that of a standard serial port with external CSU/DSU, the multichannel interface family is cost effective for all WAN connectivity.

Table 1 shows product features.

Table 1. Features Table

Feature	Supporting Platform
Line-rate performance: up to 44.736 Mbps per T3 port	Cisco 7204VXR, 7206VXR, 7201, and 7301 Routers and Cisco 7304 Cisco 7500, 7600 Series Routers

Key Features

The Cisco 1-Port Multichannel Port Adapter supports physical connectivity to T3 lines, E3 lines, T1 lines, and E1 lines. For direct termination to T3 lines, the Cisco multichannel T3 card supports 28 T1 lines multiplexed onto a single DS3 (DSX-3 level) interface. The 128 channels of this multichannel port adapter can be allocated among clear channel T1 links, NxDS0 links, or ISDN PRI links. For a single, full-rate T1 connection, only one of the 128 channels is consumed. For each NxDS0 connection, a single channel is consumed. In channelized T1 mode, multiple NxDS0 connections can be supported on a single T1. Fractional T1 mode is also supported where NxDS0 of bandwidth consumes an entire T1 link. Each T1 used as ISDN Primary Rate Interface (PRI) consumes 24 channels, one per B channel and one for the D channel.

Chassis and Processors

The Cisco 1-Port Multichannel Port Adapter is supported on the platforms and processors listed in Table 2.

Table 2. Chassis and Processor Compatibility

Chassis	Processors and Cisco IOS Software Release
Cisco 7204VXR and 7206VXR	• NPE-G1: 12.3, 12.4, 12.4T, 12.2(11)S, 12.2(27)SB • NPE-G2: 12.4(15)T1, 12.2(31)SB • NPE-400: 12.3, 12.4, 12.4T, 12.2(11)S, 12.2(27)SB
Cisco 7201	12.4(15)T1, 12.2(31)SB5

Cisco 7301	12.3(4)T, 12.4, 12.4T, 12.2(27)SB 12.2(11)YZ
Cisco 7304	12.2(20)S, 12.2(27)SB and above
Cisco 7500	12.3, 12.2(11)S, 12.2(27)SB and above
Cisco 7600	12.2(11)S and above

Product Specifications

Table 3 lists product features.

Table 3. Features

General Features
• 28 T1 ports multiplexed onto a single T3 connection
• Channelized T1, fractional T1, full rate T1, and ISDN PRI supported
• Up to 128 usable NxDS0 channels (where N is 1 to 24) that can be allocated among the 28 T1 ports
• Internal or network clocking selectable on each T1
• Six status LEDs
• ISDN D-channel support using Cisco IOS® Software
• Line and payload loopback capabilities:
◦ Local, remote, line, and payload loopback at the T1 level
◦ Respond to embedded loopback commands
◦ Insertion of loopback commands into a transmitted signal
• Full bit error rate testing capabilities on any T1:
◦ Programmable pseudorandom pattern up to 32 bits in length, including 226-1, 29-1, 211-1, 215-1, 220-1, 223-1, and 232-1
◦ 32 bit error count and bit count registers
◦ Detect test patterns with bit error rates up to 10-2
• Alarm detection: AIS, Remote Alarm, FEBE, OOF
• Onboard processor for real-time FDL messaging, in-band code detection and insertion, alarm integration, and performance monitoring
• Support for the following serial encapsulation protocols:
◦ Frame Relay
◦ PPP
◦ HDLC
◦ ISDN PRI
• Support for the following networking protocols:
◦ IP
◦ IPX
T3 Features
• Line rate: 44.736 Mbps (+/– 20 ppm)
• M23 or C-Bit parity
• Line code: B3ZS (bipolar with three-zero substitution)
• Impedance: 75 ohms
• Pulse shape: ANSI T1.102, pulse amplitude is between 0.36 and 0.85 volts (V) peak
• Input signal: DSX-3 (9.7 dB to -11.8 dB)
• Output signal: DSX-3, able to drive 450 feet (135 meters) of 75-ohm coaxial cable (728A or equivalent)
• T3 line and local loopback paths
• T3 MIB (RFC-1407)

T1 Features
• Extended Superframe (ESF) and Superframe (SF) framing modes
• Data rate to 1.536 Mbps per T1 port
• Internal and loop (recovered from network) clocking
• T1 MIB (RFC-1406)

Compliance (Partial List)

- ANSI T1.102 – 1987
- ANSI T1.403
- AT&T 62411
- BELLCORE TR-TSY-000499

Ordering Information

To place an order, visit the Cisco ordering homepage and refer to Table 4.

Table 4. Ordering Information

Product Name	Part Number
Cisco 1-Port Multichannel Port Adapter	PA-MC-T3

Service and Support

Cisco offers a wide range of services programs to accelerate customer success. These innovative services programs are delivered through a unique combination of people, processes, tools, and partners, resulting in high levels of customer satisfaction. Cisco Services help you protect your network investment, optimize network operations, and prepare your network for new applications to extend network intelligence and the power of your business. For more information about Cisco Services, refer to Cisco Technical Support Services or Cisco Advanced Services.

For More Information

For more information about the Cisco 1-Port Multichannel Port Adapters, contact your local Cisco account representative.

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Printed in USA C78-434587-00 9/07

