

Cisco 1- and 2-Port Multichannel Enhanced Capability Port Adapters

PB372113

The Cisco® 1- and 2-Port Multichannel Enhanced Capability Port Adapters for the Cisco 7200 Series Routers and Cisco 7301 Router are enhanced versions of the earlier multichannel T3 port adapters (part numbers PA-MC-T3 and PA-MC-2T3+). The new port adapters address specific scalability challenges by increasing performance and lowering CPU usage. They offload advanced capabilities and features from the CPU, delivering them directly to meet enterprise and service provider WAN link-aggregation service requirements. Each port adapter T3 interface can be independently configured for either multichannel T3 or clear-channel packet-over-T3 operation. With T3 port configurations, connections to DS-3 and subrate DS-3 services can be provisioned. With multichannel T3 port configurations, up to 28 T1 links per T3 interface can be brought in on a singlewide port adapter. Each T1 can be further channelized to DS-0, making the port adapters highly flexible interfaces for WAN provisioning.

Features such as Multilink Point-to-Point Protocol (MLPPP), Multilink Frame Relay (MLFR), link fragmentation and interleaving (LFI), and FRF.12 have been offloaded from the CPU to help enable agile response to new services while using existing infrastructure connections to better advantage. Increased line-rate performance and offloading of fragmentation processes lower CPU usage on the Cisco 7200 Series and Cisco 7301 platforms to provide scalable aggregation services. Table 1 lists the router platforms and Cisco IOS® Software releases that support these features.

Table 1. Features of Cisco 1- and 2-Port Multichannel Enhanced Capability Port Adapters

Feature	Supporting Platform	Cisco IOS Software Release
Line-rate Performance: Up to 44.736 Mbps per Port	Cisco 7204VXR and 7206VXR	12.4(11)T
MLPPP	Cisco 7204VXR, 7206VXR, 7301, and 7201	12.4(15)T1
LFI	Cisco 7204VXR, 7206VXR, 7301, and 7201	12.4(15)T1
MLFR	Cisco 7204VXR, 7206VXR, 7301, and 7201	12.4(15)T1
FRF.12	Cisco 7204VXR, 7206VXR, 7301, and 7201	12.4(15)T1

New Features

The following list describes the features delivered by the intelligent hardware of the Cisco 1- and 2-Port Multichannel Enhanced Capability Port Adapters:

- **MLPPP:** MLPPP provides a method of splitting, recombining, and sequencing datagrams across multiple logical data links. It allows packets to be fragmented and the fragments to be sent at the same time over multiple point-to-point links to the same remote address.
- **LFI:** LFI reduces delay on slower-speed links by breaking up large datagrams and interleaving low-delay traffic packets with the smaller packets resulting from the fragmented datagram.
- **MLFR:** MLFR provides a cost-effective way to increase bandwidth for particular applications by enabling multiple serial links to be aggregated into a single bundle of bandwidth. It is supported on User-Network Interfaces (UNIs) and Network-to-Network Interfaces (NNIs) in Frame Relay networks.
- **FRF.12:** FRF.12 allows long data frames to be fragmented into smaller pieces. This process allows real-time traffic and non-real-time traffic to be carried together on lower-speed links without causing excessive delay to the real-time traffic.

Upgrade Paths

Cisco 7204VXR, 7206VXR, and 7301 customers who wish to upgrade from the earlier port adapters (part numbers PA-MC-T3 and PA-MC-2T3+) and require hardware offload support of MLPPP, LFI, MLFR, and FRF.12 at T3 line rate should consider migrating to the Cisco 1- and 2-Port Multichannel Enhanced Capability Port Adapters. These new adapters are supported by the Cisco 7200VXR Series NPE-400, NPE-G1, NPE-G2 Network Processing Engines as well as the Cisco 7201 and Cisco 7301 Routers.

Ordering Information

To place an order, visit the [Cisco Ordering Home Page](#) and refer to Table 2.

Table 2. Ordering Information for Cisco 1- and 2-Port Multichannel Enhanced Capability Port Adapters

Part Number	Description
PA-MC-T3-EC	Cisco 1-Port Multichannel Enhanced Capability Port Adapter
PA-MC-T3-EC=	Cisco 1-Port Multichannel Enhanced Capability Port Adapter (SPARE)
PA-MC-2T3-EC	Cisco 2-Port Multichannel Enhanced Capability Port Adapter
PA-MC-2T3-EC=	Cisco 2-Port Multichannel Enhanced Capability Port Adapter (SPARE)

For More Information

For more information about the Cisco 1- and 2-Port Multichannel Enhanced Capability Port Adapters, visit

http://www.cisco.com/en/US/products/hw/modules/ps2033/prod_module_series_home.html or contact your local Cisco account representative.



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