Cisco 16-Port T1/E1 Multiprotocol Service Module

The Cisco® 16-Port T1/E1 Multiprotocol Service Module (MPSM-16-T1E1) is a multiprotocol service module that offers ATM and Frame Relay services for the Cisco MGX® 8850/B and MGX 8830/B Advanced ATM Multiservice Switches. The MPSM-16-T1E1 delivers high port density connectivity using DS-0, NxDS-0, and T1/E1 interfaces.

Product Overview

The Cisco MPSM-16-T1E1 is a single-height service module for the Cisco MGX 8850/B and the Cisco MGX 8830/B Advanced ATM Multiservice Switches (Figure 1). The Cisco MPSM-16-T1E1 delivers connectivity from DS-0, NxDs-0, and T1/E1 speeds and provides Any Service, Any Port (ASAP) capability, which allows both Frame Relay and ATM services on any physical port in the service module.

Figure 1. Cisco MGX 8800 Series 16-Port T1/E1 Multiprotocol Service Module (Far Left) with Associated Backcards: Cisco MGX 16-Port T1/E1 Backcard with RBBN Connector, Cisco MGX 16-Port T1/E1 Redundancy Backcard, and Cisco MGX 16-Port E1 Backcard with MCC Connector

Key Features and Benefits

- Any Service, Any Port functionality reduces operations and deployment costs by supporting both ATM and Frame Relay in a single service module.
- Multilink Point-to-Point Protocol (MLPPP) and PPP multiplexing (PPPMUX)
- Inverse Multiplexing over ATM (IMA) 1.0 and IMA 1.1 along with IMA restart capability
- FRF 8.1 Frame Relay/ATM service interworking
- 1:N service module redundancy
- Independent Transport Clock (ITC) and Common Transmit Clocking (CTC) clocking modes
- Built-in bit-error-rate-test (BERT) testing

Technical Specifications

Table 1 lists product specifications for the Cisco MPSM-16-T1E1.

Table 1. Product Specifications

Description	Specification
Product compatibility	Compatible with Cisco MGX 8830/B, MGX 8830, MGX 8850/B, and MGX 8850 Advanced ATM Multiservice Switches
Software compatibility	Minimum software: MGX Switch Software Version 5.1.20
Cards/Ports	MPSM-16-T1E1: Front card Choice of backcards with RBBN connectors for T1 or E1, or with MCC connectors for E1, and a choice between 1:N redundancy, Y-cable 1:1 redundancy, or no redundancy RBBN-16-T1E1-1N: RBBN backcard for active service module in a 1:N card redundancy configuration MCC-16-E1-1N: MCC E1 backcard for active service module in a 1:N card redundancy configuration RED-16-T1E1: Backcard for standby service module in a 1:N card redundancy configuration RBBN-16-T1E1: RBBN backcard for Y-cable redundancy MCC-16-E1: MCC E1 backcard for Y-cable redundancy
Redundancy	1:N card redundancy using a 1-to-N redundancy connector 1:1 card redundancy using Y-cable
Framing	ANSI T1.408 extended Super Frame format line framing ITU-T G.704 16 frame multiframe line framing and clear channel
Line coding	T1: B8ZS or AMI E1: HDB3 or AMI
ATM Layer	• Configurable for IMA trunk or User-Network Interface (UNI) application • Conformant to ATM Forum UNI 3.0 and 3.1 as well as ITU-T I.361 and I.432 specifications • Up to 16 classes of service (CoSs) and includes all ATM Forum traffic type services: Available bit rate (ABR), unspecified bit rate (UBR), variable bit rate (VBR) real-time and non-real-time, constant bit rate (CBR) • ABR supported for EFCI, RM marking, and ER stamping • Standard ABR with virtual source/virtual destination (VS/VD) • Early packet discard (EPD) and partial packet discard (PPD) • Weighted Random Early Detection (WRED) • Per virtual circuit queuing for traffic scheduling • Per virtual circuit traffic shaping on egress • Per virtual circuit policing • Virtual path termination • Integrated Local Management Interface (ILMI) 4.0 • Complies with standard usage parameter control (UPC) per ATM Forum UNI 3.x, TM 4.0, and ITU-TI.371 • Virtual circuit connections (VCCs) and virtual path connections (VPCs) • Virtual path identifier (VPI) and virtual circuit identifier (VCI) range for VCCs and VPCs per UNI 3.1 • Virtual circuit merge for egress and multipoint connections • Usage policing supported on all interfaces
Frame Relay	• Supports ITU-T Q.933 Annex A, ANSI T1.617 Annex D, and Local Management Interface (LMI) local management, and the enhanced LMI provides automatic configuration of traffic management parameters for attached Cisco routers • Frame Relay-to-ATM network interworking (FRF.5) and Frame Relay-to-ATM service interworking (FRF.8 and FRF.8.1), both transparent and translation modes, configured per permanent virtual circuit (PVC) • Standards-based committed information rate (CIR) policing and Discard Eligible tagging/discarding • Standard ABR rate-based flow-control option to improve trunk utilization • Each logical port independently configurable as Frame Relay UNI or Frame Relay NNI • Meets ANSI T1.618, using 2-octet headers • ATM Forum FUNI mode 1A • Supports CRC-16 and CRC-32

Description	Specification
Physical dimensions	Height: 18.4 cm (7.25 in.) Depth: 39.8 cm (15.65 in.)
Power	• Input power required: (48 VDC) • Power consumption: 39 W
EMI/ESD compliance	FCC Class A / TIA-968-A ICES 003 Class A AS/NZS 3548 Class A CISPR 22 (EN55022) Class A VCCI Class A BSMI Class A IEC/EN 61000-3-2: Power Line Harmonics IEC/EN 61000-3-3: Voltage Fluctuations and Flicker IEC/EN-61000-4-2: Electrostatic Discharge Immunity (8-kV Contact, 15-kV Air) IEC/EN-61000-4-3: Radiated Immunity (10 V/m) IEC/EN-61000-4-4: Electrical Fast Transient Immunity (2-kV Power, 1-kV Signal) IEC/EN-61000-4-5: Surge AC Port (2-kV CM, 2-kV DM) IEC/EN-61000-4-5: Signal Ports (1 kV) IEC/EN-61000-4-5: Surge DC Port (1 kV) IEC/EN-61000-4-6: Immunity to Conducted Disturbances (10 Vrms) IEC/EN-61000-4-8: Power Frequency Magnetic Field Immunity (30 A/m) IEC/EN-61000-4-11: Voltage DIPS, Short Interruptions, and Voltage Variations EN300 386: Telecommunications Network Equipment (EMC) EN55022: Information Technology Equipment (Emissions) EN55024: Information Technology Equipment (Immunity) EN50082-1/EN-61000-6-1: Generic Immunity Standard
Safety compliance	UL/CSA/IEC/EN 60950-1 ACA TS001 AS/NZS 60950
Telecom compliance	–ITU-T G.703 –ANSI T1.102 –ANSI T1.107 –ANSI T1.105 –ITU-T G.957
Telcordia NEBS	GR-1089-CORE NEBS EMC and Safety GR-63-CORE NEBS Physical Protection SR-3580 NEBS Criteria Levels (Level 3)
Telcordia CLEI	GR-485-CORE – CLEI coding GR-383-CORE – CLEI code label GR-209-CORE – PCN Process

Ordering Information

Table 2 lists ordering information. To place an order, visit the Cisco Ordering Home Page.

Table 2. Ordering Information

Part Number	Part Description
MPSM-16-T1E1	Cisco 16-Port T1/E1 MPSM
RBBN-16-T1E1-1N	16-port RBBN backcard for active service module in a 1:N card redundancy configuration
MCC-16-E1-1N	16-port MCC E1 backcard for active service module in a 1:N card redundancy configuration
RED-16-T1E1	16-port T1/E1 backcard for standby service module in a 1:N card redundancy configuration
RBBN-16-T1E1	16-port T1/E1 RBBN backcard for Y-cable redundancy
MCC-16-E1	16-port E1 MCC backcard for Y-cable redundancy

For More Information

For more information about Cisco service and support programs and benefits, go to http://www.cisco.com/.

Americas 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: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

Europe Headquarters
Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: +31 0 800 020 0791
Fax: +31 0 20 357 1100

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