MEDIA LINKS®
Media Defined Networking®

DATASHEET

1 x 10GbE, Single Port Ethernet Line Module with Hitless Data Switching

1 x 10GbE Ethernet Line Module with Hitless Switching For Data Applications

The 1 x 10GbE Ethernet line module provides 10GbE service across a single port with true hitless/zero second switching and path diversity for demanding data applications such as Remote Production/REMI.

KEY FACTS:

- Compatible with MD8000 networking equipment
- True Hitless data protection using Media Links advanced proprietary Hitless logic
- Bi-directional Ethernet traffic
- High throughput and low latency for real-time applications such as remote production
- Auto or Manual resume for buffer resync

KEY FEATURES:

- MTU Jumbo Frame support up to 9,026 bytes
- Supports single 10GbE Ethernet port
- Optical 10Gbps SFP+ interface, 10GBASE-SR/LR/ER/ZR with full SFP statistics
- 93.8% Committed Data Rate of Tx RTP Stream
- 512Kbyte FIFO buffer

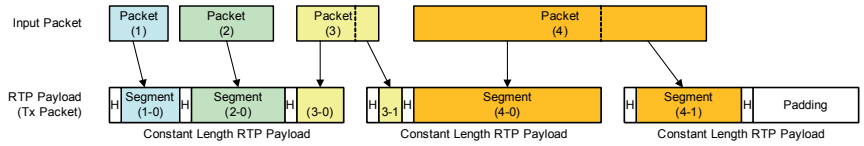
APPLICATIONS:

- Local access point-to-point data transfers
- Lossless push-pull bi-directional file transfers
- Protected IP video transport
- Remote production and remote integration
- High speed / High reliability file transfers

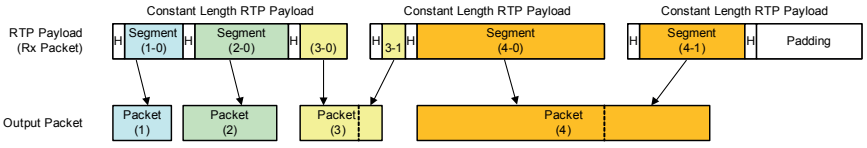
As a line card in a MD8000 chassis, the 1 x 10GbE Ethernet module offers a single 10Gbps Ethernet port with hitless switching for uninterrupted, robust data service. The card provides bi-directional hitless switching for customer data traffic between endpoints while providing fiber trunk path diversity between those same endpoints.

The ingress 1 x 10GbE Ethernet line module encapsulates customer data into a single RTP stream at the transmitter site where resulting packets are then transported on two redundant fiber trunk paths to the receiving site.

The receiving 1 x 10GbE line card checks and aligns sequence numbers and timestamps in the RTP header on both received fiber trunk paths. It then chooses the best packet of the two received paths for de-encapsulation and egress to the customer interface. This allows the network to handle routine errors that may occur such as out-of-order packets, duplicate packets, and/or lost packets. When erred packets are detected, hitless, zero second switchover to the other fiber trunk path will automatically occur by the line module's internal logic.



Customer Ingress Frames



Customer Egress Frames

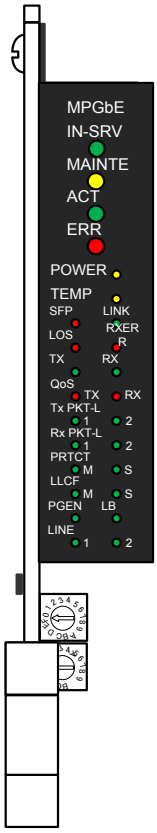
SPECIFICATIONS & SUPPORTING PARAMETERS

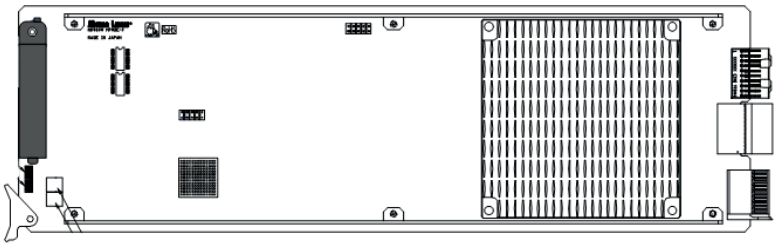
1 x 10GbE Customer Network Interface Specifications		
Item	**Description**	**Remarks**
Input/output interface	Connector: 1 * SFP+ cages MSA compliant SFP+ modules shall be used (SFF-8431, SFF-8432, and SFF-8472).	Port-1 only
Supportable interfaces	10GBASE-SR/LR/ER/ZR (depending upon the SFP+ type installed)	
MTU/MRU	9,026 bytes	Including FCS
Supported VLAN Tag Format	IEEE 802.1Q, IEEE 802.1ad format	Untagged, single VLAN tagged, double VLAN tagged

1 x 10GbE Service Specifications (port-to-SWCNT)		
Item	**Description**	**Remarks**
# of Services	1 Hitless Service per port	Port-1 only
Service Description	Hitless Service for any single stream of Ethernet frames (data traffic)	
Port: Filtering	None	All Ethernet frames are transferred
Port: Ingress FIFO Size	512 Kbyte per port	Shared by all the traffic classes
Port: Committed Rate	93.8 % of the Tx RTP Stream rate	
System: Encapsulation Format	MAC+VLAN(IEEE 802.1Q Tag)+IPv4+UDP+RTP	
System: RTP Payload	MGL Data Composition profile (MGL proprietary)	Payload Type = 100 (0x64)
System: RTP Tx Rate	Class j: 100~10,000 Mbps Class B/Class C/Single: 100~5,000 Mbps	Unit = 1Mbps
System: Transmission lines	2 Lines for Hitless protection or 1 line (no protection)	

1 x 10GbE Service Specifications (SWCNT-to-port)		
Item	**Description**	**Remarks**
# of Services	1 Hitless Service per port	Port-1 only
Service Description	Hitless Service for any single stream of Ethernet frames (data traffic)	
System: Receive Frame Format	MAC+VLAN(IEEE 802.1Q Tag)+IPv4+UDP+RTP	
System: RTP Payload	MGL Data Composition profile (MGL proprietary)	Payload Type = 100 (0x64)
System: Transmission lines	2 Lines for Hitless protection or 1 line (no protection)	
System: Receive Filtering	DMAC Address, VLAN ID, DIP Address, DUDP Port Number	Configured per Line
Port: Output format	Ethernet Frames	
Port: Egress Rate Control	None	Equal to the Ingress rate at the transmitter
Line Switching: Control	Auto Switching between Line1 and Line2 Manually configured to a given Line	MGL Proprietary

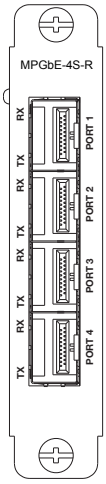
1 x 10GbE General Specifications		
Item	**Description**	**Remarks**
Operable chassis	All MD8000 series chassis	MD8000, MD8000EX, or MD8000SX
Board structure	Front + Rear cards	
External dimensions	Front board: 17 mm (W) * 113 mm (H) * 367 mm (D) Rear board: 41 mm (W) * 96 mm (H) * 126 mm (D)	Front board occupies a 1-slot width. Rear board occupies either a 1-slot width (SFPx4port) or a 2-slot width (SFPx8port)
Weight	1 kg or less	
Power consumption	33.0 W or less	
Operating temperature	0 ~ 40°C (Ambient)	Under the no-condensing humidity condition
Redundancy modes	All MD8000 modes of operation are supported	Single/Class B/Class C/Class J
Compliant with	CE/CSA, NEBS Level 3	



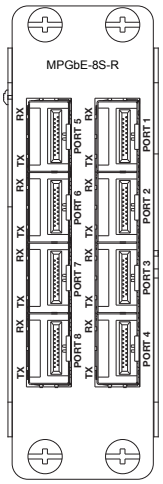


MD8000-10GbE Ethernet Line Module with front and rear panels.

Note that only Port 1 on the rear panel card is utilized in 10GbE operation in both 8 and 4 port rear configurations



4 Port Rear Panel



8 Port Rear Panel

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