Media Links® inside

Made for the MD8000 Platform™

Core Gateways

MD8000 Line Cards

DATASHEET **Version 3.0**

Description

The 1GbE-4H Hitless line module delivers path diversity and true hitless switching with zero second switchover time for demanding data applications that cannot tolerate lost or erred packets

Applications

- Local access point-to-point data transfers
- Lossless push-pull bidirectional file transfers
- Protected IP video transport
- Remote/At-Home Production
- High speed / high reliability file transfers
- AES 10 (MADI) environments

Features & Benefits

- Supports four 1GbE Ethernet ports
- Compatible with MD8000 networking equipment
- True Hitless data protection using Media Links advanced Hitless logic
- Bi-directional Ethernet traffic
- High throughput and low latency for real-time applications such as remote production

Technical overview

- Made for the MD8000 and MD8000-100G networking platforms
- 1446 byte ingress System Frame size
- Optical or electrical SFP with full SFP statistics
- Committed data rate up to 93.8% of Tx RTP Stream rate
- 128 Kbyte per port FIFO buffer
- Extensive front panel & diagnostic information

Compatible with

MD8000SX, MD8000, MD8000 EX and MD8000-100G Platforms

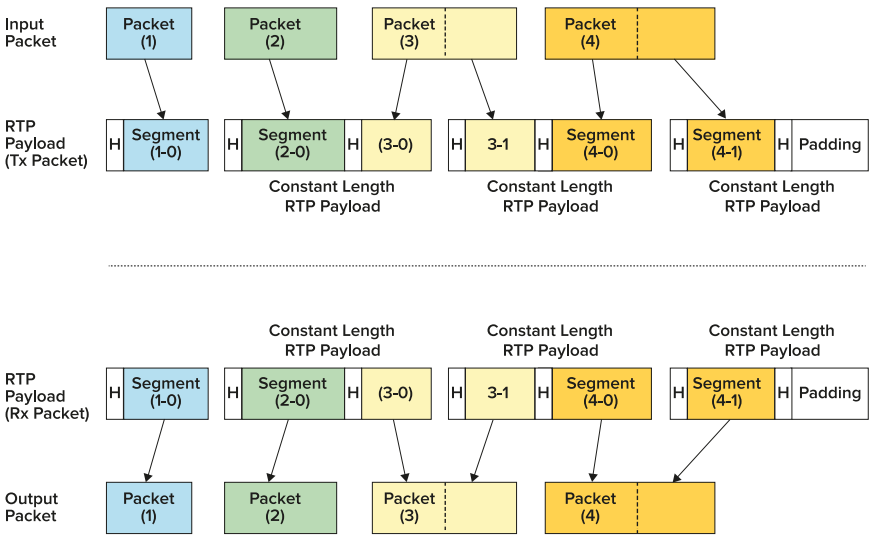
DATASHEET

1GbE-4H Hitless Line Module for Data

As a line card in a MD8000 chassis, the 1GbE-4H Hitless data module offers four 1Gbps Ethernet ports for hitless service. The card provides hitless switching for bi-directional customer data traffic between endpoints while providing path diversity between those same endpoints.

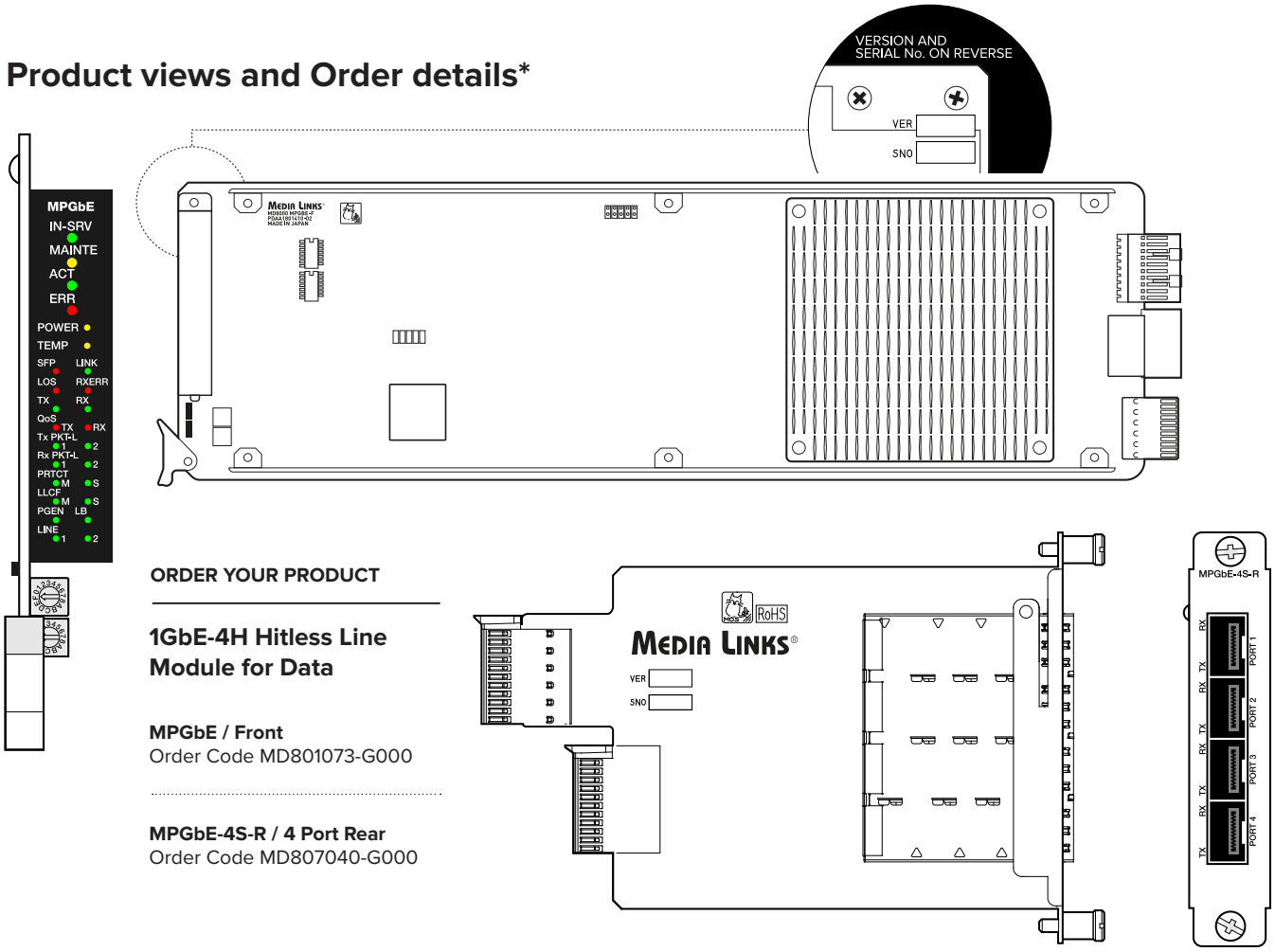
Each source 1GbE Hitless line port encapsulates customer data into a single RTP stream at the transmitter side. The receiving 1GbE line card then checks and lines up sequence numbers and timestamps in the RTP header and passes the best packet to the egress interface. This allows the network to handle routine errors that may occur such as out-of-order packets, duplicate packets, and lost packets. When erred packets are detected in any one transmission path, packets from the other transmission path will be used automatically with zero second switchover. Error checking and hitless switchover is handled transparently by the card's internal logic.

Customer Ingress Frames – Per Port



Customer Egress Frames – Per Port

Product views and Order details*



ORDER YOUR PRODUCT

1GbE-4H Hitless Line Module for Data

MPGbE / Front
Order Code MD801073-G000

MPGbE-4S-R / 4 Port Rear
Order Code MD807040-G000

Service Specifications & Supported Parameters†

1GbE-4H Ingress Service Specifications (port-to-SWCNT)

Item	Description	Remarks
# of Services	4 total Services- 1 Hitless Service per port x 4 ports	Four ports support, compatible w/MDP3020
Service Description	Hitless Service, any single stream of Ethernet frames (data traffic)	
Port: Filtering	None	All the Ethernet frames are transferred
Port: Ingress FIFO Size	128 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: Frame Size	1446 byte	Including MAC/VLAN Frame and FCS
System: RTP Payload	MGL Data Composition profile (MGL proprietary)	Payload Type = 100 (0x64)
System: RTP Tx Rate	Ethernet: 100 ~ 1,065 Mbps per port (MADI: 45 ~ 85 Mbps)	Class J/Class B/Class C/Single Unit = 1Mbps
System: Transmission lines	2 Lines for Hitless protection, or 1 line (no protection)	

*Cards shown not to scale.
† Media Links reserves the right to alter specifications without notice.

Service Specifications & Supported Parameters†

1GbE-4H **Egress Service Specifications (SWCNT-to-port)**

Item	Description	Remarks
# of Services	4 Hitless Service (1 service per port)	Port-1/2/3/4 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)	Applies to trunks
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
Line Switching: differential delay between lines	750 msec (Maximum)	This value satisfies the maximum differential delay between paths in SMPTE 2022-7 Class C
Maximum Differential Delay	1500 msec (Maximum)	This value corresponds to the physical buffer size for an input RTP stream

1GbE-4H **Customer Network Interface Specifications**

Item	Description	Remarks
Input/output interface	Connector: 4 x SFP+ cages An MSA compliant SFP+ modules shall be used (SFF-8431, SFF-8432, and SFF-8472)	Multi-rate (1G/10G) SFP+ can be recognized
Service Description (depending upon SFP type installed)	IEEE 802.3-2012: 1000BASE-X / 1000BASE-T / 100BASE-TX / 10BASE-T; AES10 (MADI)	Installed modules shall meet their individual port- parameter settings
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

General specifications

Board Structure Front and Rear

External dimensions (Front) 17 mm (W) * 113 mm (H) * 367 mm (D)
(Rear) 41 mm (W) * 96 mm (H) * 126 mm (D)

Chassis slots needed Front board occupies a 1-slot width
Rear board occupies a 1-slot width

Compliance CE/CSA, NEBS Level 3

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)

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DATASHEET-MD8KLC-1GbE_4H-11-2021