

## Datasheet



### LambdaDriver® - E3/DS3 TDM Muxponder Module (EM2009-E3GM/DSGM)



E3GM/DSGM

#### Features

- SFP based GE port
- Coax E3/DS3 port
- Detects and clears LOS as per G.775.
- Compliant with jitter transfer template outlined in ITU G.751, G.752, G.755 and GR-499-CORE, 1995 standards.
- Meets ETSI TBR 24 Jitter transfer requirements.
- Compliant with Bellcore GR-499, GR-253 and ANSI T1.102 Specification for transmit pulse
- Meets the Jitter and Wander specifications described in T1.105.03b, ETSI TBR-24, Bellcore
- GR-253 and GR-499 standards
- Supports local, remote and digital loop-backs.
- E3/DS3 framing format transparent
- Support of B3ZS/HDB3 line codes
- SFP Digital Diagnostics monitoring
- Front panel status LEDs

#### Applications

- Transparent E3/DS3 and Gigabit services over one wavelength
- LAN and PBX extension and distribution

#### Overview

LambdaDriver® E3GM/DSGM modules use an advanced Time Division Multiplexing (TDM) technology for combining and simultaneously transporting E3/DS3 circuits and one GE service over one Full Duplex fiber optic trunk to various distances. The EM2009-E3GM and the EM2009-DSGM operate respectively with the E3 (34.368 MHz) and the DS3 (44.736 MHz) protocols. An on-board differential receiver provides high noise interference margin and is able to receive data over a distance of 1000 feet (305 m) of cable or with a cable attenuation of up to 12 dB.

Both modules support local, remote and digital loop-backs.

The modules are transparent to framing format and support HDB3 and AMI line codes and interfaces complying with ITU-T G.703/ Bellcore GR-499-CORE/ ANSI T1.102\_1993, and with ITU G.823, G.824, and GR-499-CORE Jitter Requirements.

The aggregated trunk port is SFP based 1Gbps speed; therefore this module can use regular GE SFPs providing distances of up to 120 km without the need for regeneration. It can even utilize CWDM/DWDM SFPs to allow higher service aggregation over a single fiber.

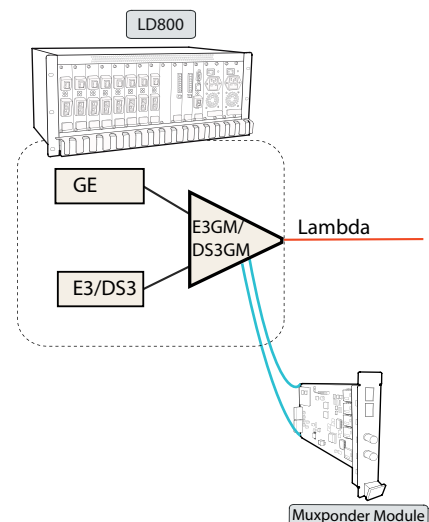
Combined with the LambdaDriver® Element Management Module, full monitoring and configuration capabilities become available locally at a craft terminal via the RS-232 interface and remotely at a TELNET or SNMP station via an Ethernet/Fast Ethernet interface. MRV's MegaVision® Web-based SNMP management application provides remote control reducing the costly need for many in-the-field services.

All LambdaDriver® SFP-based modules fully support the Digital Diagnostics provided by the SFPs per Multi-Source Agreement (SFF-8472), including Optical Transmit Power, Optical Receive Power and Temperature Measurements. The modules are hot-swappable and fit into all LambdaDriver chassis.

The terminal side of the module includes an SFP socket for GE connection and a coax for E3/DS3 connection.

The line code can be selected to be AMI, B8ZS or HDB3. For E3 the factory default is HDB3; for DS3 it is B8ZS.

The line impedance is 75 Ohm for both E3 dual DS3



Front panel per port LEDs are provided:

- E3/DS3 – LOS
- GE – Link & Activity
- Trunk (SFP based) – Link & Activity
- Trunk (fixed WDM based) - Link & Laser Temperature

Local and remote loopback commands from management are supported for each port on the module allowing an excellent tool for network maintenance.

Among the typical applications: dedicated LAN and PBX connection over a single fiber between different buildings; use of E3/DS3 circuits for industrial control communication together with IP connection in Ring or Linear OADM configurations.

### Technical Specifications

#### Physical Specifications

<b>Connectors</b>	Trunk - SFP, GE-SFP, E3/DS3-coax
<b>Operating Temperature</b>	-5 to 45° C
<b>Storage Temperature</b>	-10 to 70° C
<b>Relative Humidity</b>	85% maximum, non-condensing
<b>Dimensions (W x H x D)</b>	26.93 mm (1.06 in) x 130.7 mm (5.145 in) x 227.5 mm (8.956 in)
<b>Weight</b>	0.480 kg (1.05 lb)

#### E3/DS3 Electrical Specifications

	<b>E3</b>	<b>DS3</b>
<b>Transmission rate (Mbps)</b>	34368	44736
<b>Line code</b>	HDB3	AMI or B8ZS
<b>Line impedance (Ohm)</b>	75	75
<b>Standard</b>	ITU-T G.703	ANSI T1.102_1993 and Bellcore GR-499-CORE

#### Order Info

<b>Product</b>	<b>Description</b>
<b>EM2009 - E3GM</b>	E3 and one GE port TDM Multiplexer with SFP receptacles
<b>EM2009 - DSGM</b>	DS3 and one GE port TDM Multiplexer with SFP's

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