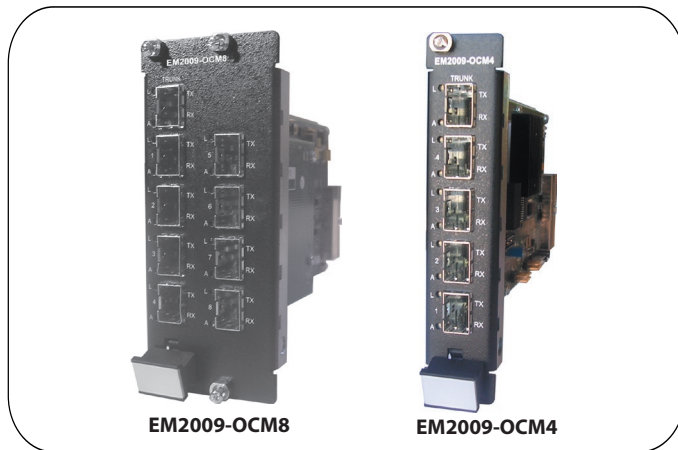


## Datasheet

# SONET/SDH MuxPonder - LambdaDriver® Module (EM2009-OCMx)



### Features

- SFP based ports
- SFP Digital Diagnostics (SFF-8472)
- Hot-swappable
- Support of local/remote loopback tests per port
- Active 3R functionality
- Internal or external synchronization source
- Data stream concatenation mode (OC3c or OC12c) option
- Front panel status LEDs
- Installable in all LambdaDriver chassis

### Applications

- STM1/OC3 and STM4/OC12 services distance extension
- STM1/OC3 and STM4/OC12 services aggregation over single fiber saving infrastructure costs
- STM1/OC3 and STM4/OC12 services aggregation and transport over xWDM networks saving wavelengths

### Overview

LambdaDriver® EM2009-OCMx modules are based on an advanced Time Division Multiplexing (TDM) technology for combining and simultaneously transporting 4 or 8 STM1/OC3 or STM4/OC12 circuits over one Full Duplex fiber optic trunk to various distances.

Any of the tributary ports can be programmed online to transport either STM4/OC12 or STM1/OC3 protocols.

The EM2009-OCMx modules use SFPs on all ports (tributaries and aggregation port) fully supporting 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.

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

There are 2 synchronization modes:

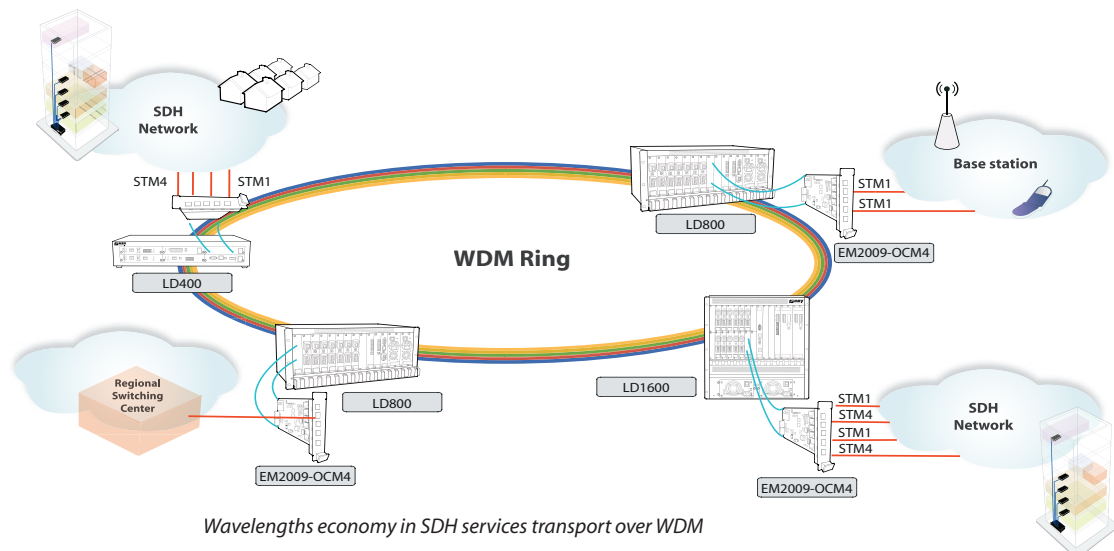
- Internal – all tributaries are synchronized by an internal clock source
- External – all tributaries are synchronized to the clock extracted from one of the tributaries

In "external" synchronization mode any tributary can be chosen to be a "master" clock through the management command.

The aggregated trunk speed is 2.488 Gbps and therefore this module can use regular OC48 SFPs and utilize also xWDM SFPs to allow higher service aggregation over a single fiber.

*Note: On the 8 ports modules (EM2009-OCM8), No. ports 5 to 8 are OC3/STM1 **only**, ports 1 to 4 can be configured as OC3/STM1 or OC12/STM4, provided the total bandwidth of all ports does not exceed the aggregation port speed of OC48 (2.488 Gbps). For example, 4xOC3/STM1 + 3xOC12/STM4 is a valid configuration, but 4xOC3/STM1 + 4xOC12/STM4 is not.*

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®, a Web-based SNMP management application, provides remote control, reducing the costly need for many in-field services.



## Technical Specifications

Physical Specifications	
Connectors	SFP
Operating Temperature	0 to 45° C
Storage Temperature	-10 to 70° C
Relative Humidity	85% maximum, non-condensing
Dimensions (W x H x D)	<b>4 ports:</b> 26.93 mm (1.06 in) x 130.7 mm (5.145 in) x 227.5 mm (8.956 in) <b>8 ports:</b> 53.86212 mm (2.12 in) x 130.7 mm (5.145 in) x 227.5 mm (8.956 in)
Weight	<b>4 ports:</b> 0.4 kg (0.85 lb) <b>8 ports:</b> 0.7 kg (1.5 lb)

Order Info	EM2009-OCM4	4 OC3/OC12 ports TDM Multiplexer channel card with SFP interfaces
	EM2009-OCM8	8 OC3/OC12 ports TDM Multiplexer channel card with SFP interfaces

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