

Datasheet

**LambdaDriver® –10Gbps - Dual Transponder Module with FEC (TM2-XSFPPM)**



TM2-XSFPPM

**Overview**

The TM2-XSFPPM is a single slot dual transponder module of the LambdaDriver Optical Transport System. It incorporates two independent 10Gbps transponders which support transparent transport of 10Gbps and 8G FC over OTU2 transport layer. The access ports can be fitted with SFP+ transceivers and the line ports with XFP transceivers supporting any standard SFP+ and XFP, including DWDM Tunable types.

A key feature of each of the channels is support of the G.709 FEC protocol as well as Enhanced FEC (EFEC) with superior error correction performance.

The FEC functionality significantly extends the overall distance reach of a 10Gbps rate link while maintaining the expected industry standard BER performance.

FEC and EFEC modes are user selectable with the system management card.

Performance monitoring is supported for both access and trunk ports, providing the relevant conditions and alarms at each receive side.

Statistics for current 15 minutes interval and up to 96 previous intervals can be viewed.

**Features**

- 10GE, OC 192/STM64 and 8GFC protocols operability
- OTU2 repeater mode
- FEC/EFEC capabilities
- G.709 performance monitoring
- Line and Diagnostics Loop-back tests
- XFP/SFP+ digital diagnostics
- Link Integrity Notification (LIN)
- Self-healing protection
- Eye safe - ALS/APR
- Hot swappable

**Applications**

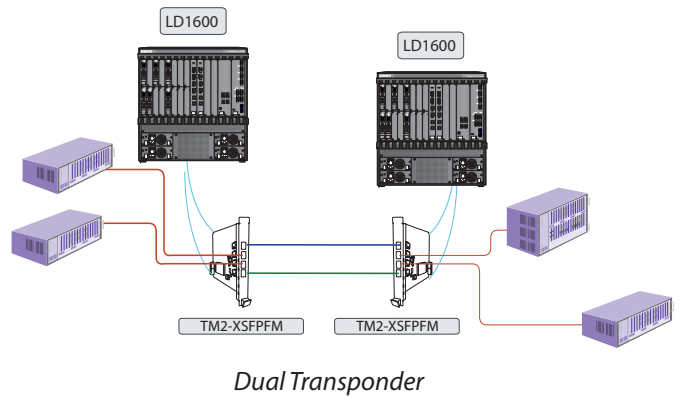
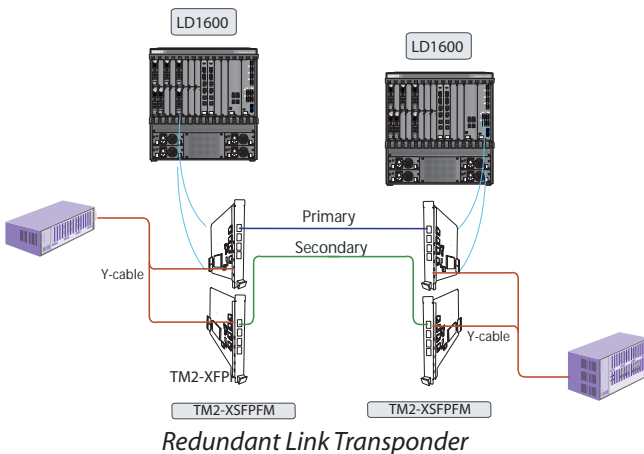
- DWDM networks with end-to-end performance monitoring
- Upgrade of existing CWDM/DWDM networks to extend optical operating range and speed

Line and Diagnostic Loop-back functionality is supported and provides an invaluable tool for troubleshooting and maintenance operations in a live network.

The Diagnostics loop-back function checks the integrity of the internal ports circuitry while the Line loop-back is used to check the fiber connections integrity. The Line loop-back and the Diagnostics loop-back are available for both the access (client) and trunk ports.

The Link Integrity Notification (LIN) function allows the terminal equipment to detect link failure in the path between the two terminal equipment units regardless of the location of the failure.

The integrated Automatic Laser Shutdown (ALS/APR) feature automatically reduces the optical power of the transmitter to an eye safe level in case of a broken link.



The following three redundancy protection modes are available:

- Redundancy between two adjacent TM2-XSFPMs using Y-cables. In this mode, one TM2-XSFPM is active while the adjacent TM2-XSFPM is in standby.
- Redundancy between two transponders of the same TM2-XSFPM using Y-cables. In this mode, one transponder is active while the second is in standby.
- Redundancy between two transponders of the same TM2-XSFPM using self-healing instead of Y-cables. In this mode, one access port and one line port are active while the second line port is in standby.

In repeater mode, 3R retiming/reshaping is applied to an OTU2 rate access client (GFEC only) transported over the line port either at GFEC or EFEC OTU2 rate.

The modules are manageable with the LambdaDriver management module either locally with RS232 CLI access or remotely with Telnet or SSH station or with and SNMP Manager (e.g. MegaVision Pro™ or Pro-Vision®).

Environmental	
Operating Temperature	-5 to 50 °C (23 to 122 °F)
Storage Temperature	-10 to 70 °C (14 to 158 °F)
Relative Humidity	90% max, non-condensing
Dimensions (W x H x D)	26.93 mm (1.06 In); 130.7 (5.145 In); 227.5mm (8.956 In)
Weight	0.55 Kg (1.21 lb)
MTBF @25°C/77°F	605656 hr
Connectors	Per the SFP+/XFP
Power Consumption	Module: 15.5W (53BTU/hr)    SFP+: 1W (3.4 BTU/hr)    XFP: 3.5W (12BTU/hr)

Technical Specifications	
Regulatory Compliance	FCC Part 15 (Class A); EMC Directive: Emission (Class A) and Immunity; RoHS2 Directive, REACH SVHC, WEEE Directive.
Line Rate	10.709Gbps
G.709 Power Budget Gain	+ 6dB
EFEC Power Budget Gain	+ 8dB
Optical parameters	Per the XFP/SFP+

Order Info	Product	Description
	TM2-XSFPM	SFP+ access, XFP Line ports, Dual Transponder with FEC for 10Gbps.

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