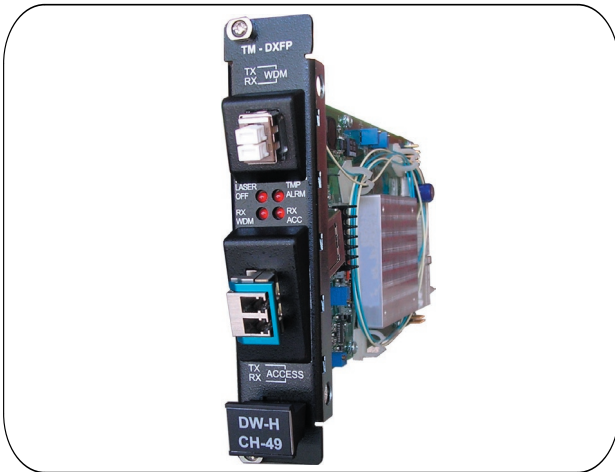


## Datasheet

# LambdaDriver® 10 Gbps Transponder Module (TM-DXFP)



**10Gbps transponder**

### Overview

The TM-DXFP transponder is a single slot module that converts the “gray” wavelength of a 10 Gbps terminal equipment interface to ITU-T grid DWDM wavelength enabling its transport via the LambdaDriver® Optical Transport System (DWDM multiplexer, OADM etc.) The TM-DXFP module supports OC-192/STM64 and 10 GbE protocols with 3R signal conditioning.

The access (terminal equipment) interface is an XFP (10 Gbps Small Form Factor Pluggable) receptacle, while the trunk (DWDM) port is an integrated interface that provides two configuration options, fixed or tunable interface.

The TM-DXFP20T incorporates tunable dispersion compensation capability. When running long distances over fiber, each wavelength aggregates different dispersion, therefore compensating all wavelengths together causes different dispersion residual for each wavelength. Having an on-transponder, built-in Tunable dispersion compensator allows fine tuning of dispersion on a per wavelength basis.

Automatic Laser Shutdown (ALS) feature automatically reduces the optical power of the transmitters to an eye safe level in case of a broken link. The ALS feature is implemented on both ports of the

### Features

- 10 Gbps LAN or WAN transport
- Full 3R support
- Remote and Local Loop-back
- ITU-T grid (G.694.1 ) wavelengths on 50 GHz grid
- Tunable wavelength optional
- Dispersion tolerance up to 160 km
- Power monitoring
- XFP digital diagnostics
- Link Integrity notification (LIN)
- Y-Cable protection support
- Automatic Laser Shutdown (ALS)
- Hot swappable

### Applications

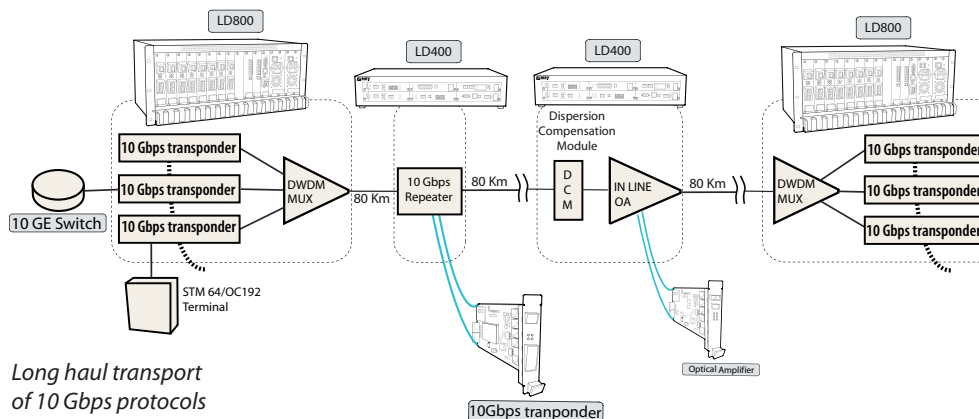
- 10 GE or SDH/SONET distance extension and repeaters
- 10Gbps signal regeneration and optical wavelength conversion
- Data rate upgrade of existing DWDM networks to 10 Gbps

transponders (DWDM side and Terminal equipment side). Remote and Local Loop-back functionality is supported and provides an essential tool for troubleshooting and maintenance operations in a live network.

The Link Integrity Notification (LIN) function allows the terminal equipment to detect the link failure in the path between the two terminal equipment units, regardless of the location of the failure. The link failure is propagated throughout the network until it reaches the terminal equipment, resulting in disabling the transmission immediately, at the opposite access port.

The TM-DXFP transponders provide power monitoring of the trunk (DWDM) port in addition to Digital Diagnostics provided by the XFP of the access port.

The TM-DXFP transponders also support the Y-Cable based fast switch-over protection protocol. In this protection mode two adjacent transponders in a LambdaDriver® chassis run a protocol that maintains “operational” and “standby” transponders for a single 10Gbps port of an access device.



*Long haul transport of 10 Gbps protocols*

The modules can be managed either through the LambdaDriver® management module by local craft terminal (CLI) or remotely by Telnet or SNMP with MRV's web-based NMS MegaVision® or any other SNMP management platform.

Two types of modules are available: one with fixed DWDM trunk interface and another with wavelength tunable DWDM trunk interface. Several tunable DWDM interface models can cover longer distances without requiring dispersion compensation.

### Environmental

<b>Operating Temperature</b>	- 5 to 45 °C (23 °F to 113 °F)
<b>Storage Temperature</b>	-10 to 70 °C (14 °F to 158 °F)
<b>Relative Humidity</b>	85% maximum, non-condensing
<b>Dimensions (W x H x D)</b>	W: 26.93 x 130.7 x 227 mm 1.06 x 5.145 x 8.93 In
<b>Weight</b>	0.805 kg 1.77 lb
<b>Connector</b>	Mini SC (MU) - WDM port; XFP access port
<b>Power consumption</b>	Fixed: 14 Watt Tunable: 18.5 Watt

### Technical Specifications

	Fixed wavelength	Tunable wavelength
<b>WDM TX power (dBm)</b>	0 - 1	4 -7
<b>Maximum receiver sensitivity (dBm)</b>	-23	-24
<b>Overload (dBm)</b>	- 6	- 8
<b>DWDM wavelengths range</b>	Any on ITU-T G694.1 100Ghz grid	1528 - 1561nm on ITU-T G694.1 50Ghz grid
<b>Wavelengths Accuracy</b>		+/-10pm
<b>Wavelengths Tuning Time - cold start (sec)</b>		30
<b>Wavelengths Tuning Time - warmed - up (sec)</b>		0.5
Chromatic Dispersion tolerance at 1525nm - 1570nm		
<b>TM-DXFP8T</b>		1600 ps/nm
<b>TM-DXFP20T</b>		3600 ps/nm
<b>Dispersion penalty at limit (db)</b>		2

### Order Info

Product	Description
<b>TM-DXFP8T</b>	XFP Access port, 10Gbps DWDM tunable wavelength transponder up to 80 Km distance
<b>TM-DXFP20T</b>	XFP Access port, 10Gbps DWDM tunable wavelength transponder up to 200 Km distance

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