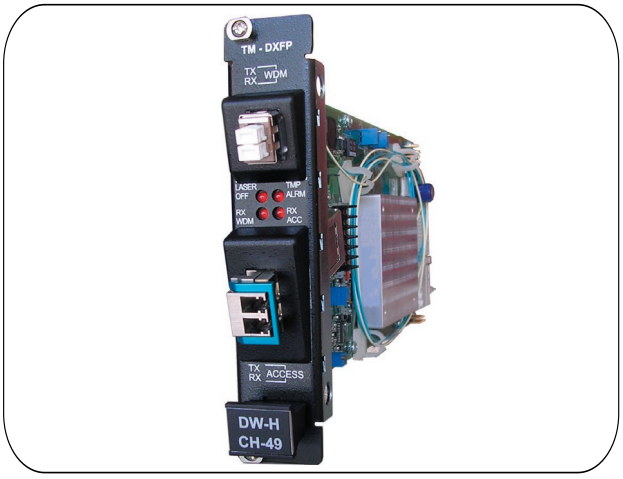
MRV

FIBER ACCESS SOLUTIONS

Datasheet

10 Gbps transponder - LambdaDriver® Module (TM-DXFP)



10Gbps transponder

Features

- 10 Gbps LAN or WAN transport
- Full 3R support
- Remote and Local Loop-back tests
- 80 km dispersion limit on the DWDM side XFP receptacle on the client side
- ITU-T grid (G.694.1) wavelengths for 100 GHz or 200 GHz spacing for DWDM
- Operation on standard G.652 / G.655 fibers
- Power monitoring
- XFP digital diagnostics
- Link Integrity notification (LIN)
- Y-Cable protection support
- Automatic Laser Shutdown (ALS)
- Hot swappable module
- SNMP management by LambdaDriver management module

Applications

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

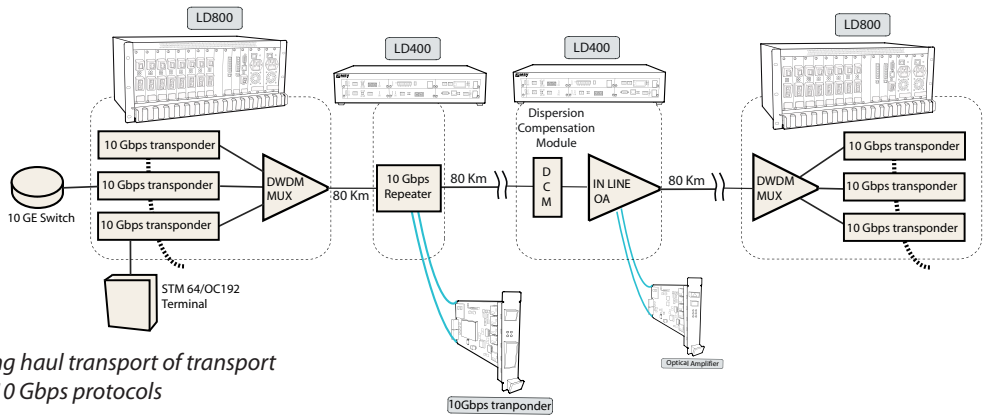
Overview

The TM-DXFP transponder is part of the LambdaDriver® product line and can be hosted by the LD400, LD800 and LD1600 chassis. The transponders are single slot modules that interface between the CWDM or DWDM multiplexers and 10 Gbps terminal equipment. These modules provide transparent light paths at ITU-T grid DWDM wavelength, which carry 10 Gbps traffic.
The TM-DXFP modules support OC-192/STM64 (9.95 Gbps) and 10 GbE (10.3Gbps) protocols.
Field upgrade of existing CWDM or DWDM networks to 10 Gbps speeds is easy: just add this module to a LambdaDriver chassis at the appropriate wavelength.

The terminal equipment interface possesses an XFP (10 Gbps Small Form Factor Pluggable) receptacle, thus providing the highest flexibility in the terminal equipment interface selection. Using XFP transceivers enables the customer to easily change the type of optical interface according to the different needs of the terminal equipment. XFP transceivers are pluggable, and can easily be reused at different locations for different applications, thus maximizing the return on investment in optics and equipment, and reducing the on-hand parts inventory.

Transponders are operated completely independently of the other parts of the system and can be hot swapped without having to interrupt other services running through the same system. Transponders perform the 3R functionality in order to maintain the signal's best quality. For laser safety requirements, all transponders are equipped with the Automatic Laser Shutdown (ALS) feature, which reduces the optical power of the transmitters automatically in case of a broken link. The ALS feature is implemented on both ports of the transponders (DWDM side and Terminal equipment side).
The loop-back as well as the Remote Laser Shutdown functions assist in troubleshooting the network and providing a cost effective way of pinpointing a problem.

The Link Integrity Notification 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, by disabling the transmission immediately upon failure detection at the opposite port of the transponder.
The TM-DXFP transponders provide power monitoring on the DWDM port in addition to Digital Diagnostics supplied from the XFP port. This function provides a dB value of transmitting and receiving optical signal at each transponder, giving the network manager an additional tool for analyzing the quality of the fiber optic network.



Long haul transport of transport of 10 Gbps protocols

The TM-DXFP transponders support the Y-Cable protection protocol, used in cases of full hardware protection of the transport equipment with only one terminal port for every service. In this protection mode, each two adjacent transponders in a LambdaDriver® chassis run proprietary protocols in order to maintain "operational" and "standby" transponders operation.

The module can be managed either through the LambdaDriver® management module by local craft terminal or remotely by SNMT with MRV's web-based NMS MegaVision® or any other SNMP manager.

Two types of transponders are available:
TM-DXFP4 – DWDM link for distances up to 40 km
TM-DXFP8 – DWDM link for distances up to 80 km without the need for amplification or dispersion compensation.
Longer distances can be reached by using LambdaDriver Optical Amplifier modules and dispersion compensation modules.

Technical Specifications

Physical dimensions	W: 26.93 x 130.7 x 227.5mm 1.06 x 5.145 x 8.956 In
Weight	0.55 kg 1.21 lb
Optical connector	MiniSC (MU) - WDM port; XFP - Terminal equipment port
WDM grid	ITU - T - G.694.1
Minimum laser power	0 dBm
Minimum receiver sensitivity	-23 dBm
Overload	-8 dBm
Operating Temperature	-5C - +45 C
Storage	-40C - +85 C

Order Info

Product	Description
TM-DXFP4/xx	XFP Access port, 10GE DWDM ch #xx transponder up 40 Km distance
TM-DXFP8/xx	XFP Access port, 10GE DWDM ch #xx transponder up 80 Km distance
XFP modules	
XFP-10GD-LR	XFP OC192/STM-64, 10GE or 10G FC, SM, 1310nm, 10km, with digital diagnostics
XFP-10GD-SR	XFP OC192/STM-64, SM, 1310nm, 2km, with digital diagnostics

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