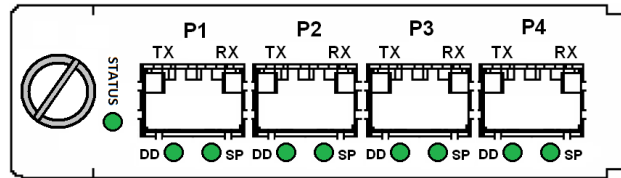# Transponder: Dual Multi-Rate10G

OD-DMR10G

The OD-DMR10G is a Dual Multi-Rate (DMR) application module that installs directly into an OD chassis.

The OD-DMR10G functions as a 4-port repeater, dual converter, or dual transponder with clock data recovery (CDR). It also supports redundancy on two port pairs for mission-critical links, with management features that aid daily operation and network diagnostics. The four modular SFP/SFP+ ports support standard optical transceivers for WAN, 1-Gbps and 10-Gbps Ethernet.
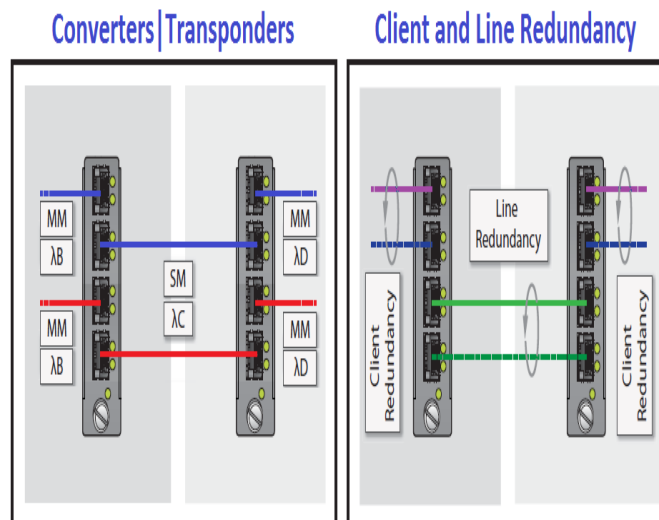
The OD-NM network manager supports all of the OD-DMR10G module features in the current release.

Applications

The figures and details in this section illustrate a few possible applications only.

Some unmanaged applications are possible, limited to static DIP switch configurations. The OD-NM manager is recommended for all OD applications, even when DIP switch configuration is possible.

The OD-DMR10G currently supports the following configurations through software or DIP switches. Refer to the DIP switch and jumpers sections to prepare the module.

Highlights

Feature	Description
Operating Modes	Feature sets selected by runtime software or on-board DIP switches • Dual Transponder (two independent data paths) • Redundancy Protection (one mission-critical data path)
4 SFP+ ports	Flexible configuration supports many applications
Status LEDs	Front panel indicators for status, port link, and digital diagnostics
Re-loadable firmware	On site upgrades to support new technology
Hot swap	Runtime hardware configuration changes
Link Integrity Notification	(LIN) Link error propagation for proactive management
Performance monitoring	Individual port status and statistics with alarms
Loopback	Data circuit testing
PRBS testing	Bit sequence generation and checking for end-to-end data circuit testing
Redundancy support	Options for high-reliability data applications
Heat protection	Temperature monitoring and alarms
Protocols supported	• 10 GbE (LAN/WAN PHY) • 1 GbE • OTU1e, OTU-2, OTU-2e • Fibre Channel (1G, 2G, 4G, 8G, 10G) • Infiniband (2.5G, 5G, 10G) • SDH stm-64 • SONET oc-192
Management interfaces	Provided through the OD-NM management module
Y-cable support	Port redundancy with similar port within the chassis

Refer to the OD Operation Guide for specific operational details and customized solutions.

Specifications

Electrical Power (maximum)		
OD-DMR10G	empty	8.7 Watts
OD-DMR10G	optics in	12.8 Watts (sampled)

Physical		
H x W	slots	1 x 1
H x W x D	mm	75 x 25 x 225
H x W x D	inches	3.0 x 1.0 x 9.0
Weight	kg	0.45
Weight	oz	16.0

Environmental (assuming maximum power CFP application)	
Temperature (operating)	0° C to 50° C (32° F to 122° F)
Temperature (storage)	-40° C to 70° C (-40° F to 158° F)
Relative Humidity	85% maximum, non-condensing
Regulatory Compliance	• FCC Part 15, Class A • IC, Class A • EMC Directive: Emission (Class A) and immunity • WEEE Directive: Wheelie Bin Mark • RoHS 2 Directive and China RoHS

Operational	
Latency (observed)	3-4 ns