

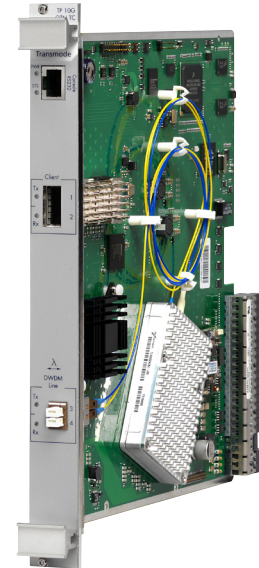
10G Tunable OTN Transponder

OTN transport of multiple traffic formats

Key benefits:

- Fully OTN compliant transport of 10G services
- Supporting SDH/SONET, Ethernet and OTU-2 client signals
- Inbuilt Forward Error Correction (FEC) enables usage in long-haul networks
- Tunable laser covering 80 DWDM channels allowing simpler network planning and more cost efficient spare parts handling
- Low Power Design

The 10G Tunable OTN Transponder is part of Transmode's TM-Series platform enabling optimized and cost efficient transport networks based on C/DWDM.



Optimized for transport with OTN standard

The 10G Tunable OTN Transponder is a fully OTN compliant traffic unit supporting G.709 encapsulation of the client signals. The digital frame includes standard Forward Error Correction (FEC) that detects and corrects bit errors, which boosts the transmission distance in long-haul applications.

The mapping of client signals into the OTN structure provides superior end-to-end performance monitoring and Tandem Connection Monitoring for monitoring parts of the path. The true OTN mapping of client signals thus makes the TP10GOTN/TC suitable for transport of services over multiple vendor networks using OTN.

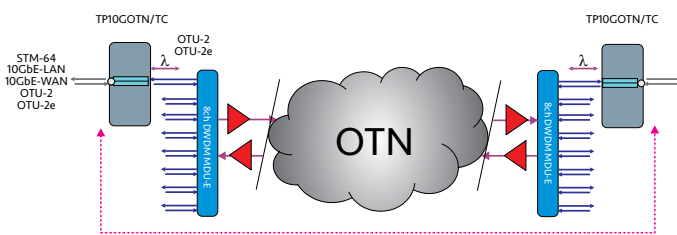


Fig. 1 End-to-end manageability and performance monitoring through any OTN network

The tunable laser on the line interface can be reconfigured by software to any of the 80 DWDM wavelengths on the 50GHz ITU-T C-band grid. This enables easier commissioning and installation procedures and decreases the cost of spare part handling.

One board for all 10G services

The TP10GOTN/TC supports the different 10G standard client signal formats STM-64/OC-192, 10GbE-WAN & 10GbE-LAN as well as OTU-2 and OTU-2e. In combination with the pluggable XFP interface on the client interface, the TP10GOTN/TC makes a very versatile, cost efficient and flexible choice for 10G transmission.

Simplified management via embedded management channels

The TP10GOTN/TC supports the management capabilities within the G.709 OTN standard, where GCC bytes are used to carry management channels. The embedded management channels simplify the management of a Transmode network since management access is provided wherever there is a traffic connection. Therefore there is no need for a separate external management network connection or to use an Optical Supervisory Channel.

Transporting OTN through TM-Series Core networks

The TP10GOTN/TC supports OTU-2 and OTU-2e as client signal formats. 10G services originating from an external OTN system can therefore be regenerated and transported through a TM-Series network, keeping full transparency of the encapsulated data.

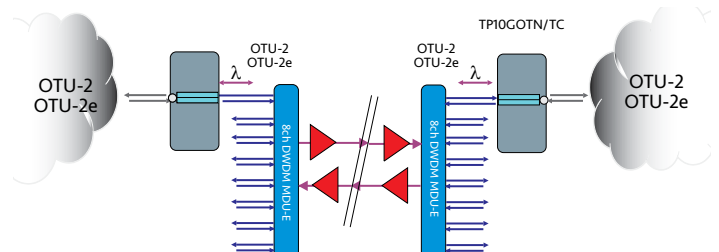


Fig. 2 Acting as an intermediate transport network for OTU-2 and OTU-2e mapped signals

Interfacing OTN Core network

In some cases, where the Transmode Intelligent WDM (iWDM™) or Native Packet Optical transport concept is used for more cost-efficient metro/access aggregation, it is necessary to interface to an OTN Core network. The TP10GOTN/TC is suitable for use at the handover point.

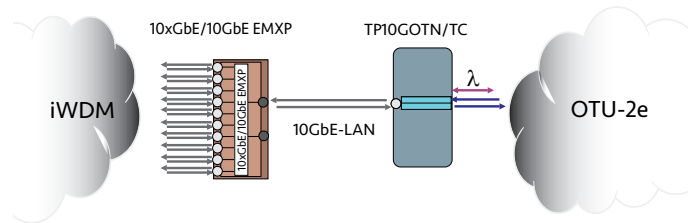


Fig. 3 Interface between iWDM and OTN networks

Tailored Network Element options

The 10G OTN Tunable Transponder can be mounted in any of the TM-Series chassis options;

- As a self-managed Network Element in a 1U TM-101/102 chassis
- As one of many traffic units in a TM-3000 (10U) or TM-301 (3U) chassis

This enables a tailored setup depending on current and future capacity needs of the site.

In the TM-101/102 option, the 10G Tunable OTN Transponder initiates the complete Embedded Node Management (ENM) on the on-board micro processor. This enables local management simply by connecting any PC or work station and launching a standard internet browser. The embedded management channels enable easy remote management via the line signal. There is therefore no need to provide access to the customer DCN network if the 10G Tunable OTN Transponder is placed at a customer site.

Low Power Design

A fully equipped 10G Tunable OTN Transponder consumes less than 22W. Low power consumption in combination with a small footprint reduces site costs and enables more capacity to be handled at sites with restrictions on power consumption, cooling and space.

Technical specifications:

Supported traffic formats	STM-64/OC-192 10GbE-WAN 10GbE-LAN ¹
Layer-1 performance monitoring	According to G.8201 on all interfaces
Protection	1+1 Client protection ² . Non-revertive switching <50ms
Power consumption	Max 22W worst case including client optics
Misc line interface features	G.709 OTN mapping of client signals. Embedded management channels on GCC Tandem Connection Monitoring. Forward Error Correction (FEC)
Interfaces	Client interface: XFP-based. Supporting MM, SM @ 1310nm/1550nm etc, CWDM, DWDM, tunable XFP Line interface: Fixed tunable laser,

1) 10GbE-LAN is mapped into a OTU-2e frame (11.1Gbps) according to G.Sup43

2) Available R15 June 2010