100G OTN Transponder

Cost-efficient transport of 100G in metro networks

Key benefits:
- Pluggable coherent optics provide superior optical performance while minimizing initial and spare-part cost
- Coherent detection removes need for dispersion compensation
- PM-QPSK modulation allows co-existence with legacy 10G & 40G wavelengths
- True OTN mapping of services enables multivendor environment deployment
- Inbuilt end-to-end service monitoring improves SLA fulfillments
- Low power design with low power consumption pluggable optics
- Flexible optical engineering with multiple FEC options - GFEC/EFEC/SD-FEC

The 100G OTN Transponder (TP100GOTN) is part of Transmode’s TM-Series platform. The 100G OTN Transponder enables mapping of 100G client services to an OTU4 line signal. With its small footprint and pluggable coherent optics it is suitable for deployment in all parts of the network.

Pluggable coherent optics
The 100G OTN Transponder utilizes state-of-the-art technology in the form of pluggable coherent CFP optical modules. These pluggable modules are used on the line side to provide a PM-QPSK modulated 100Gbps signal on a single channel in the 50GHz spectrum. The coherent CFP modules are tunable over all 80 DWDM channels. This unique design reduces footprint and power as well as cost for spare-parts and operations.

Metro optimized performance
The optical performance of the line side together with coherent detection technology enable simple installation of new 100G wavelengths in any type of network, coexisting with existing services on 10G and 40G wavelengths. The coherent detection technology removes the need for dispersion compensation units and enables regional and metro reach up to 1200 km.

Integrated platform solution
The 100G OTN Transponder is a two-slot wide plug-in unit in the TM-Series chassis TM-3000, TM-3000/II and TM-301. It is fully integrated in the node management software (ENM) and in the Transmode Network Manager (TNM). Being a natural part of the complete transport platform where ROADMs, filters, amplifiers and other traffic units can be deployed in the same chassis, it enables a flexible and vertically integrated system and simplifies network planning and operation.

True OTN transport
The 100G OTN Transponder supports the latest technology for mapping and transporting services over an OTU4 line signal according to the ITU-T G.709 standard. The pluggable client side can support various CFP modules for 100GbE and OTU4 services.

This enables the 100G OTN Transponder to be deployed both in greenfield networks as well as in existing OTN environments.

The standardized mapping of any service makes the network easier to plan and operate which lowers the total cost of ownership.

Advanced monitoring and management capabilities
The 100G OTN transponder supports service monitoring capabilities such as performance monitoring that follows the service from ingress to egress. This capability makes it an ideal unit for business wholesale applications, since any type of Layer-1 service can be monitored end-to-end through any complex multi-vendor OTN network at any time. Furthermore, it ensures a high SLA offering and also provides simple and reliable service troubleshooting.
Low Power Design

A fully equipped 100G OTN Transponder consumes an industry leading low power consumption of only 70W. The use of low power consuming and small footprint CFPs in combination with the low power design of the TM-Series chassis enables a cost efficient 100G system. The combination of a small footprint and low power design reduces site cost and enables more capacity to be handled at sites with restrictions on power consumption, cooling and space.

Technical specifications

<table>
<thead>
<tr>
<th>Supported traffic formats</th>
<th>100GbE OTU4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mapping</td>
<td>G.709 mapping to OTU4</td>
</tr>
</tbody>
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| Performance monitoring    | OTN: Full G.709 monitoring  
100GbE: Based on CRC and RMON  
Collected every 15min/24h and presented according to G.826  
End-to-end PM presentation |
| Protection                | Client/equipment protection |
| Power consumption         | Typically 70W including optics |
| Misc line interface features | Management channels: CCC0, CCC1 & CCC2  
Forward Error Correction: GFEC/EFEC/SD-FEC |
| Interfaces                | Client interfaces: CFP-based: LR-4, SR-10  
Line interfaces: CFP based: Coherent DP-QPSK |