

XTM SERIES

HEX 10G OTN TRANSPONDER

High-density 10 Gb/s Transport

The Hex 10G OTN transponder (TPHEX10GOTN) is part of the Infinera XTM Series. The TPHEX10GOTN is a one-slot unit providing six independent 10 Gb/s transponder functions. This results in extremely dense and energy-efficient 40/80-channel networking solutions.

The TPHEX10GOTN is part of the Infinera XTM Series metro and regional network offering, supporting advanced transport mechanisms such as forward error correction (FEC) and end-to-end service performance monitoring.

The TPHEX10GOTN is fully integrated in the Embedded Node Manager (ENM) and in the Digital Network Administrator for XTM Series (DNA-M). As a natural part of the complete transport platform, the unit can be deployed in the same chassis as reconfigurable optical add-drop multiplexers (ROADM), filters, amplifiers and other traffic units. This enables a flexible and vertically integrated system and simplifies network planning and operation.

Six Independent Transponder Functions in One Slot

Up to six individual 10 Gb/s transponder functions can be supported on each TPHEX10GOTN unit. Each transponder function can be individually and dynamically configured to any of the supported client formats.

The TPHEX10GOTN interfaces support a broad range of enhanced small form-factor pluggable (SFP+) transceiver types, from short-haul client interfaces to coarse wavelength-division multiplexing (CWDM) and dense wavelength-division multiplexing (DWDM) tunable line interfaces. The usage of pluggable transceivers provides a high level of flexibility since the TPHEX10GOTN can be used in both CWDM and DWDM networks by selecting appropriate type of SFP+ transceiver.

Each transponder function supports near-end as well as far-end loopback configurations for fault finding purposes.



Key benefits:

- Unprecedented high-density capabilities, with six transponder functions on a one-slot unit, saving valuable rack space
- Standard OTN mapping of services enables multi-vendor environment deployments
- Technology-agnostic. Pluggable transceivers enable usage in CWDM as well as DWDM networks
- Flexible optical engineering with multiple FEC and protection options
- Low power design assures low total cost of ownership

Standard OTN Mapping and Transport

The TPHEX10GOTN supports the latest technology for mapping and transporting services according to ITU-T G.709 standards. This enables the TPHEX10GOTN to be deployed both in greenfield networks as well as in existing optical transport network (OTN) multi-vendor environments. The standardized mapping of any service also makes the network easier to plan and operate, which lowers the total cost of ownership.

Supporting a great variety of client services (10 GbE-LAN, STM-64/OC-192 and 8 GFC) as well as true regeneration of OTN services (OTU2/OTU2e), it is ideal for use in high-speed backhaul and wholesale applications.

Advanced Monitoring and Management Capabilities

Service monitoring capabilities, in which performance-evaluating bytes follow the service from ingress to egress, are built in to the TPHEX10GOTN, which makes it an ideal unit for business wholesale applications. Any type of Layer 1 service can be monitored from end to end through any complex multi-vendor OTN network at any time. This ensures a high degree of service level agreement (SLA) management and SLA-based services, while also providing simple and reliable troubleshooting of a service.

The TPHEX10GOTN unit supports multiple embedded management channels on different levels, which makes it possible to manage a remote node or network through another OTN network. This simplifies the operational environment of the management plane within the network.

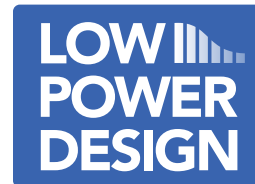
Flexible Optical Engineering

The TPHEX10GOTN supports both generic FEC (GFEC) and enhanced FEC (EFEC) on all interfaces. Each of the six transponders can be individually configured with regard to FEC type, enabling transport flexibility in amplified networks.

With the additional support of both 1+1 line and 1+1 client/equipment protection, the TPHEX10GOTN makes a versatile and powerful unit for 10 Gb/s transport in all networks.

Low Power and High Density Design

A TPHEX10GOTN fully equipped with 12 DWDM SFP+ tunable transceivers and FEC on all ports consumes less than 65 watts (W). Low power consumption in combination with a high density reduces site costs and enables more capacity to be handled at sites with restrictions on power consumption, cooling and space.



Specifications

Supported Traffic Formats	10 GbE-LAN/10 GbE-WAN STM-64/OC-192 OTU2/OTU2e 8 Gb/s FC
Mapping Technology	ITU-T G.709-compliant Line format: OTU2/OTU2e
OTN Line Features	Multiple management channels (GCC0/1/2) User selectable FEC (GFEC/EFEC) TCM monitoring*
Performance Monitoring	Ethernet: CRC, HI-BER, PCS-LOF, remote fault, local fault, received/transmitted bytes/frames, physical coding error, Ethernet utilization SDH/SONET: RS-LOF, MS-AIS, RS-B1 OTN: Corrected ones and zeros (FEC), estimated BER (FEC), OTUk-AIS, OTUk-LOF, OTUk-LOM, OTUk.BEI, OTUk-BIAE, OTUk-BDI, OTUk-SM-BIP8, ODUk-AIS, ODUk-LTC, ODUk-OCI, ODUk-LCK, ODUk-BDI, ODUk-BIAE, ODUk-IAE, ODUk-BEI, ODUk-PLM, ODUk-MSIM, OPUk-CSF, CMS Collected every 15 min/24 h and presented according to G.826 End-to-end PM presentation
Protection	1+1 line protection* (non-revertive and revertive) 1+1 client/equipment protection (non-revertive and revertive)
Power Consumption	Max 65 W worst case (with all ports active and using DWDM SFPs)
Misc Features	Far-end and near-end line/client loopback
Interfaces	SFP+, grey as well as CWDM and DWDM (fixed and tunable)

* Future release
Specifications and Features Are Subject to Change