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DATA SHEET

4x10G OTR Modules

For the 6500 Packet-Optical Platform

The 4x10G Optical Transponder (OTR) modules maximize service revenue by providing industry-leading density in a compact footprint with multi-protocol client flexibility.

By using the 4x10G OTR, customers can deploy solutions for 10 Gb/s client services with high capacity and offer differentiated service options with ultra-low-latency connectivity and several path/equipment protection options. With its support of a wide range of client service protocols, the 4x10G OTR can address multiple applications, including business Ethernet services, wholesale services, data center connectivity, and 10G regeneration.

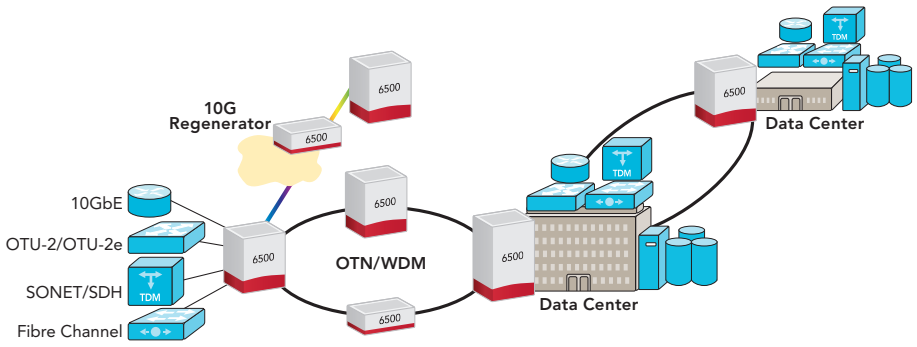

Figure 1. 4x10G OTR addresses diverse set of networking requirements

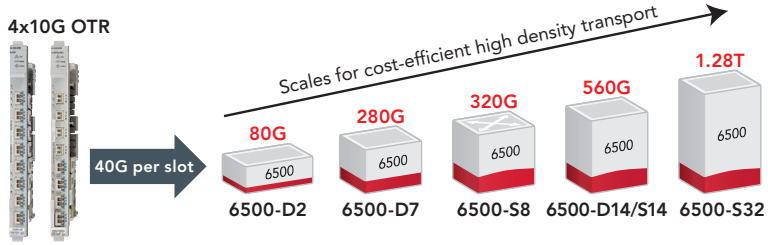

Figure 2. 10G scalability from 80G to 1.28T using 4x10G OTR

Features and Benefits

- Maximizes service revenue and reduces transport costs by doubling the density of 10G services over 10G wavelengths
- Addresses multiple applications with support of a wide range of client signal rates, including OC-192/STM-64, 10GbE, high-speed Fibre Channel, and the ability to regenerate 10G wavelengths, in a very compact footprint
- Enables a differentiated service offering with support of ultra-low-latency 10GbE services, as well as flexible path and equipment protection options
- Provides round trip delay measurements for SLA assurance
- Reduces power/space costs by delivering 4 x 10G services in a single slot

The 4x10G OTR doubles the capacity of the 6500 2x10G OTR module. Four groups of line (XFP) and client (SFP+/XFP) pluggable optic ports can be provisioned individually for flexible and increased service velocity. The line-side ports support XFP pluggable optics that can be tunable DWDM, fixed DWDM, CWDM, or gray optical interfaces. This level of flexibility benefits customers through simplified inventory and decreased network planning costs, while protecting their investment against network churn. With two variants of the 4X10G OTR that fit in any 6500 S-Series or D-Series chassis, customers can select the optimal shelf size to meet their requirements for cost-efficient, high-density service transport. The 4x10G OTR provides ultra-low-latency 10GbE connectivity to address specialized enterprise applications, including high-frequency trading for financial services and telemedicine for healthcare. The 4x10G OTR supports a variety of client protocols, including OTN, SONET/SDH, and Ethernet, to cover the full spectrum of network requirements within the metro infrastructure.

Technical Information

System Requirements	The 4x10G OTR modules can operate in any of the 6500-S32, 6500-D14/S14, 6500-D7/S8 or 6500-D2 chassis.	
Port Format	**Client side SFP+/XFP supported interfaces**	
	NTK530QA (SFP+)	**NTK530QM (XFP)**
	OC-192/STM-64 — 9.95 Gb/s 10GbE LAN — 10.31 Gb/s 10GbE WAN — 9.95 Gb/s FC400, FICON 4G, FC1200, FC800 FICON 8G, 5G PSIFB, ISC	OC-192/STM-64 — 9.95 Gb/s 10GbE LAN — 10.31 Gb/s 10GbE WAN — 9.95 Gb/s FC1200, FC800, FICON 8G OTU-2 — 10.71 Gb/s OTU-2E — 11.096 Gb/s
	Line side XFP supported interfaces	
	NTK530QA (XFP)	**NTK530QM (XFP)**
	10GbE LAN — 10.31 Gb/s OTU-2 (10.71 Gb/s) OTU-2E (11.096 Gb/s)	10GbE LAN — 10.31 Gb/s OTU-2 (10.71 Gb/s) OTU-2E (11.096 Gb/s)
Power Requirements	**NTK530QA**	**NTK530QM**
	36W	47W
Protection Options	1+1 line protection 1+1 client and equipment protection	
FEC Modes	G.709 compliant RS-8 FEC, UFEC, and OFF	
Environmental Characteristics Operating Temperature	+41° F to +104° F (+5° C to +40° C); +23° F to +131° F (-5° C to +55° C) short term – 6500-D14/S14, 6500-D7/S8, 6500-D2 +23° F to +122° F (-5° C to +50° C) short term – 6500-S32	
Relative Humidity	5% to 85% (non-condensing)	
Altitude	13,000 ft; 4000 m	
Physical Characteristics	11.34 in (H) x 0.99 in (W) x 9.34 in (D) 288 mm (H) x 25 mm (W) x 237 mm (D)	

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