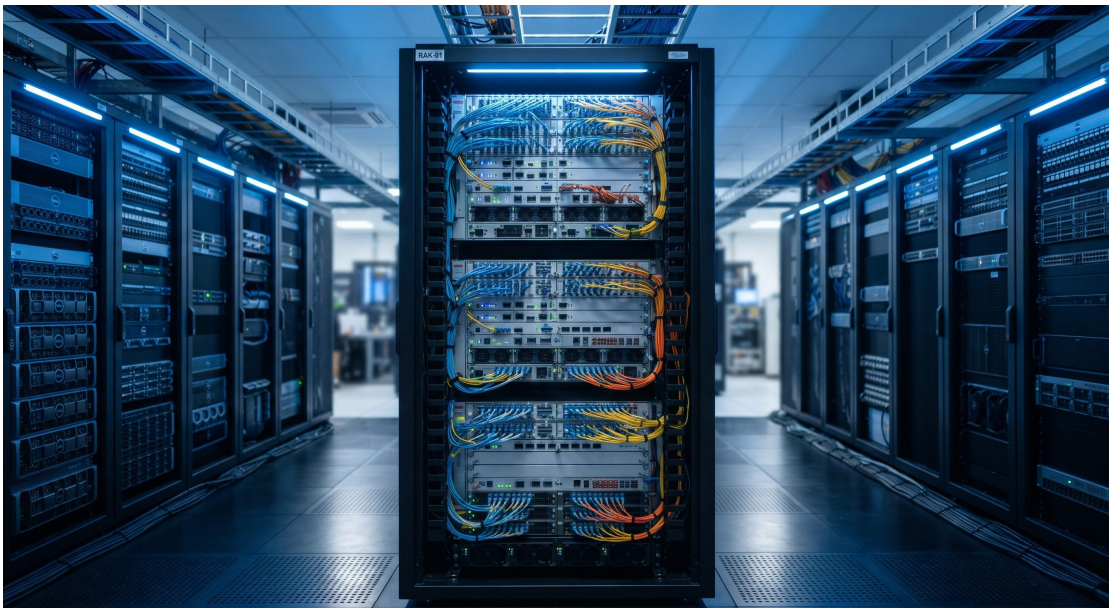
Huawei OptiX OSN 8800 T32 ROADM - Official Technical Overview & Hardware Datasheet

EXECUTIVE SUMMARY

The Huawei OptiX OSN 8800 T32 is a carrier-grade, high-density optical transport platform purpose-built for national backbone, regional/provincial backbone, and metro core network applications . As a central component of the OSN 8800 series, the T32 subrack variant integrates Reconfigurable Optical Add-Drop Multiplexer (ROADM) functionality with terabit-level electrical cross-connection capabilities, enabling service providers to construct end-to-end OTN/WDM backbone transport solutions that accommodate massive capacity grooming and ultra-broadband transmission . The platform is engineered to address the exponential growth of IP traffic by providing a scalable, reliable, and operationally efficient optical networking foundation.



ARCHITECTURE & CHASSIS DESIGN

The OptiX OSN 8800 T32 features a 32-slot universal subrack architecture designed for high integration and flexibility. The chassis is structured to support a comprehensive mix of optical, electrical, and control plane modules, enabling a single subrack to terminate a vast number of services. One OSN 8800 subrack supports access of 320 x 10G or 32 x 100G services, effectively consolidating the functionality of multiple conventional WDM subracks into a single footprint . This high level of integration saves up to 80% of equipment room space and reduces power consumption per bandwidth unit by 55% compared to legacy discrete solutions . The T32 subrack is engineered with a 900 mm height, 498 mm width, and 295 mm depth, accommodating 32 universal card slots . The design facilitates direct device-to-device connections, eliminating the need for external Optical Distribution Frame (ODF) patching and thereby

enhancing overall system reliability.

The platform's optical architecture is centered on the ROADM technology, supporting optical cross-connections in 2, 4, 9, or 20 degrees . This enables flexible wavelength-level and sub-wavelength-level grooming, allowing network operators to dynamically route wavelengths without manual intervention. The OSN 8800 T32 is recognized for pioneering a simplified Colorless, Directionless, Contentionless, and Gridless (CDCG) ROADM architecture, which significantly simplifies node configuration and enhances the agility of optical-layer ASON deployment .

HARDWARE FEATURES

The hardware ecosystem of the OSN 8800 T32 is built around a robust backplane and a comprehensive suite of line cards and common units. The subrack supports non-blocking electrical cross-connect capacities that scale to meet the demands of complex network topologies, providing centralized grooming for a multitude of services . The system supports a maximum channel rate of 100 Gbit/s per wavelength (OTU-4) with a wavelength range of 192.1 THz to 196.05 THz (Band-C, ITU-T G.694.1), accommodating up to 80 wavelengths at 50 GHz spacing . For long-haul applications, the platform supports a maximum reach of up to 350 km (81 dB) without electrical

regeneration, leveraging advanced modulation formats and amplification technologies.

Key hardware components include the system control and communication board, cross-connect boards, optical amplifier boards (EDFA/Raman), and a wide array of service transponder and muxponder cards. The platform is designed for high availability, with redundant power input feeds, fan tray assemblies, and control plane resources. Power is supplied via a -48V DC / -60V DC nominal input, with a working voltage range of -40V DC to -72V DC, ensuring operation across diverse power environments . The maximum subrack power consumption for a fully populated T32 configuration is rated at 4800W for the enhanced variant, reflecting the high-density nature of the platform .

COMPLIANCE & STANDARDS

The OptiX OSN 8800 T32 is designed to comply with stringent international telecommunications standards, ensuring interoperability and reliable performance within multi-vendor environments. The platform adheres to ITU-T recommendations for optical transport networking, including G.694.1 for DWDM grid spacing and G.709 for OTN frame structures and overhead processing. It supports a comprehensive range of client interfaces, including SDH (STM-1/4/16/64/256), Ethernet (FE/GE/10GE), and OTN

(OTU1/OTU2/OTU2e/OTU3/OTU4) protocols . The system is engineered to meet carrier-grade availability requirements, incorporating extensive fault detection, performance monitoring, and protection switching mechanisms compliant with Telcordia and ITU-T standards for network survivability.

TECHNICAL SPECIFICATIONS

The OSN 8800 T32 delivers robust performance metrics tailored for backbone and metro core deployments. Electrical cross-connect capacities are scalable, with the platform supporting 3.2T or 6.4T non-blocking switching fabrics depending on the configuration . The ROADM subsystem provides flexible optical add/drop multiplexing with support for 2, 4, 9, or 20-degree configurations, enabling mesh network topologies and photonic layer restoration . The system supports a full-granularity grooming range from 100 Mbit/s to 100 Gbit/s, accommodating legacy TDM traffic alongside high-capacity packet services .

Parameter	**Specification**
Form Factor	32-slot universal subrack (900H x 498W x 295D mm)
Switching Capacity	Electrical cross-connect: 3.2T / 6.4T (non-blocking, configuration

	dependent)
ROADM Degrees	2, 4, 9, or 20-degree optical cross-connect
Wavelength Capacity	80 wavelengths (50 GHz spacing), Band-C (192.1–196.05 THz)
Max Rate per Channel	100 Gbit/s (OTU-4)
Power Supply	-48V DC / -60V DC nominal; 1+1 redundant power input
Max Subrack Power	4800W (Enhanced T32 configuration)
Max Reach	350 km (81 dB) without electrical regeneration

ORDERING OPTIONS

Ordering the OptiX OSN 8800 T32 requires a clear understanding of the intended network topology, capacity requirements, and protection schemes. Base configurations typically include the T32 subrack, system control boards (SCC), cross-connect boards (XCH), power interface units (PIU), and fan assemblies. Service-specific line cards are selected based on the mix of client protocols and line-side reach requirements. For ROADM deployments, wavelength selective switch (WSS) boards and associated optical amplification

units must be specified according to the degree of nodal connectivity required. Enhanced subrack variants should be selected for scenarios demanding the highest electrical cross-connect capacity (6.4T) and service density. It is recommended that customers consult official Huawei configuration tools and engineering documentation to ensure compatibility and optimal sizing for their specific deployment.

