

ZXONE 9700 High-Capacity OTN Platform Cross-Connect Matrix - Official Technical Overview & Hardware Datasheet

EXECUTIVE SUMMARY

The ZXONE 9700 is a carrier-grade, ultra-large-capacity optical transport network (OTN) platform engineered for core backbone, provincial backbone, and metro core switching nodes. As the flagship of ZTE's E-OTN portfolio, the platform is purpose-built to address the exponential bandwidth growth driven by 5G transport, fixed broadband, and data center interconnection (DCI). At its architectural core lies a non-blocking, multi-service cross-connect matrix that unifies ODUk, Packet, VC, and OSU switching fabrics, delivering the industry's highest electrical cross-connect capacity of up to 64T per subrack. With per-slot backplane bandwidth scalable to 1.6T, the ZXONE 9700 enables seamless evolution from 100G to 400G/600G/800G and beyond, ensuring maximum return on infrastructure investment for operators worldwide. The platform has been repeatedly recognized by GlobalData as the sole "Leader" in the Core Packet-Optical Platform category, underscoring its benchmark position in switching capacity, line-card density, and energy efficiency .



ARCHITECTURE & CHASSIS DESIGN

The ZXONE 9700 employs a modular, scalable chassis architecture designed to accommodate diverse deployment scenarios, from space-constrained metro sites to high-capacity backbone hubs. The electrical cross-connect subrack family includes the S1, S2, S3, S6, and G2K variants, with physical dimensions optimized for ETSI and IEC standard racks. The S6 subrack, for instance, measures 1822mm (H) x 533mm (W) x 639mm (D), providing a high-density footprint for maximum port integration .

Central to the platform's switching capability is the backplane interconnect fabric, which supports a per-slot bandwidth of 1.6T, enabling the 64T cross-connect capacity in a single subrack. The system supports unified switching of ODUk (ODU0/1/2/2e/3/3e2/4/flex), Ethernet packets, VC, and OSU

signals, eliminating the need for discrete switching fabrics and simplifying network layering. For optical-layer agility, the platform integrates an Optical Cross-Connect (OXC) subsystem based on an optical backplane, supporting 16/32-dimensional wavelength-level switching with an architecture upgradeable to 40+ dimensions .

HARDWARE FEATURES

- **Ultra-Wide Spectrum Support**: The line system supports C6+L6 THz full-spectrum operation, enabling single-fiber transmission capacities approaching 100T, maximizing fiber asset utilization .
- **High-Density Line Cards**: The SXX series line cards deliver industry-leading DWDM port density, supporting advanced modulation formats including QPSK/200G, 8QAM/200G, 16QAM/400G, 16QAM/600G, and 64QAM for flexible capacity-reach tradeoffs .
- **Unified Multi-Service Cross-Connect**: The matrix supports ODUk, Packet, VC, and OSU switching in a single platform, enabling seamless convergence of SDH, Ethernet, FC, and OTN client signals without external grooming equipment.
- **Green Energy Architecture**: Intelligent fan speed control, high-efficiency thermal design, and on-demand sleep modes for line cards, ports, and buses minimize power consumption. The platform is recognized for the industry's

lowest power consumption per Gbps in its class .

- ****Quantum Encryption Readiness****: The system supports quantum encryption functionality for mission-critical services requiring absolute information security, addressing government and financial sector requirements .

COMPLIANCE & STANDARDS

The ZXONE 9700 complies with relevant ITU-T recommendations for OTN interfaces (G.709, G.798, G.825) and supports standard management interfaces including CORBA, SNMP, and NETCONF/YANG for integration with SDN controllers and network management systems. The platform is designed to meet ETSI equipment practice standards and supports DC (-48V), AC (110V/220V), and HVDC (240V) power feeding configurations. Environmental compliance aligns with RoHS and WEEE directives.

TECHNICAL SPECIFICATIONS

The following table summarizes the principal hardware and performance parameters of the ZXONE 9700 cross-connect matrix platform.

Parameter	Specification
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Product Type	Ultra-large-capacity OTN cross-connect platform
Subrack Variants	S1, S2, S3, S6, G2K, G2K-E, S3K, S3K-E, S3K(G), S6K
Max Electrical Cross-Connect Capacity	64T per subrack
Per-Slot Backplane Bandwidth	1.6T
Switching Granularity	ODU0/1/2/2e/3/3e2/4/flex, Packet, VC, OSU
Client Interfaces	STM-1/4/16/64, FE/GE/10GE/100GE/200GE/400GE, FC100–FC3200, OTU1/2/2e/4
Line-Side Interfaces	OTU2/OTU2e/OTU4/OTUC2/OTUC4/O TUC8/OTUC16
Optical Cross-Connect (OXC)	16/32-dimensional (upgradeable to 40+)
Power Supply	DC -48V; AC 110V/220V; HVDC 240V
Cooling	Intelligent fan speed control, front-to-back airflow
Management	WASON control plane, SDN-ready, SNMP/CORBA/NETCONF

ORDERING OPTIONS

Customers may select from a range of subrack configurations and line-card variants to match specific capacity, density, and redundancy requirements. Key ordering considerations include:

- **Subrack Selection**: S1 (compact, 4.4T/2.2T class), S2 (9.2T/4.6T class), S3 (14.4T/7.2T class), S6 (28.8T/14.4T class), or G2K variants for cluster deployments .
- **Line Card Mix**: Specify SXX-series cards based on per-wavelength rate (100G/200G/400G/600G) and client interface type (100GE, 400GE, OTU4, FC3200, etc.).
- **Optical Layer Options**: Include OXC subrack (OX42 series) for wavelength-level switching at multi-degree nodes .
- **Power and Cooling**: Select AC, DC, or HVDC power shelves with 1+1 redundancy; fan units are automatically speed-controlled.
- **Management and Control**: WASON control plane or SDN controller integration options are available for intelligent bandwidth allocation and restoration.

