

ZXONE 9700 Commissioning and Maintenance - Official Technical Overview & Hardware Datasheet

PRODUCT IDENTIFICATION

The ZTE ZXONE 9700 represents a flagship converged optical transport platform engineered for the rigorous demands of next-generation metropolitan and core networks. This datasheet serves as the definitive technical reference for the commissioning procedures and maintenance lifecycle of the ZXONE 9700, detailing the hardware architecture, operational parameters, and service assurance protocols that underpin its carrier-grade performance. As a multi-service optical transport node, the ZXONE 9700 integrates OTN, SDH, and packet switching capabilities, providing a future-proof foundation for high-capacity network infrastructure.



SYSTEM HARDWARE TOPOLOGY

The physical architecture of the ZXONE 9700 is centered around a modular, high-density chassis design, engineered to accommodate a versatile mix of interface cards and switching fabrics. The system is organized into distinct physical domains: the chassis backplane, power distribution units, cooling subsystems, and the card cage which houses all active processing elements. Commissioning mandates a rigorous verification of the physical installation, confirming that all cards are properly seated and that the backplane interconnections are fully functional. The hardware topology supports various configurations, including point-to-point and ring-based optical network topologies, and features advanced protection switching mechanisms for enhanced network resilience. Key to the hardware reliability is the physical separation of the data, control, and management planes, a design imperative that ensures fault containment and operational stability.

DATA & CONTROL PLANE CAPABILITIES

The ZXONE 9700 differentiates itself through a resilient architecture that logically separates the data forwarding, control signaling, and network management functions. The data plane, based on a high-capacity, non-blocking switching fabric, is responsible for the transparent and

low-latency forwarding of client signals across the optical network, supporting a broad spectrum of protocols including SDH/SONET, Ethernet, and Fibre Channel. The control plane is implemented on dedicated processing modules that run sophisticated routing and signaling protocols, such as GMPLS and ASON, enabling dynamic and intelligent path setup. Management and maintenance access are facilitated through an independent management plane, providing secure and comprehensive provisioning, monitoring, and troubleshooting capabilities essential for smooth commissioning and ongoing service assurance.

COMPONENT BREAKDOWN

The modularity of the ZXONE 9700 allows for a granular approach to system configuration and maintenance. The major hardware components are defined as follows:

- SYSTEM CONTROLLER MODULE: Provides system-wide control, management, and timing distribution. It hosts the Network Element (NE) operating system and manages all shelf resources.
- CROSS-CONNECT / SWITCHING FABRIC MODULE: Responsible for high-speed switching and cross-connection of optical channels (ODUk, OCh) and packet flows between all installed interface cards.

- INTERFACE LINE CARDS: A diverse portfolio of interface cards supporting various data rates and protocols, including 10GE, 40GE, 100GE, STM-64, and OTU2/OTU3/OTU4. These cards convert client signals into a common internal format for switching.
- OPTICAL TRANSCEIVERS: Pluggable optical modules (e.g., SFP+, XFP, CFP, QSFP) that interface with the external fiber plant, enabling flexible provisioning and easy replacement.
- POWER SUPPLY UNITS (PSUs): Redundant, hot-swappable power modules that convert AC or DC input to the voltages required by the chassis. The system supports 1+1 and N+1 power redundancy configurations.
- FAN TRAY UNITS: Intelligent, speed-controlled fan assemblies that maintain optimal thermal operating conditions across the chassis. Hot-swappable fan modules are available for maintenance without interrupting service.

OPERATIONAL SPECS MATRIX

The following section provides a technical overview of the ZXONE 9700's core performance and physical specifications, which are critical for commissioning and ongoing maintenance verification.

Chassis Dimensions: The standard chassis is a 19-inch rack-mountable unit, available in various height variants (e.g., 1RU, 2RU, 5RU, 12RU) depending on

the system capacity and card slot count. The physical dimensions define the space and power requirements for the installation site.

Power Consumption: System power draw varies significantly based on the number and type of installed line cards and transceivers. The system is designed with energy efficiency in mind, utilizing advanced power management techniques to reduce operational costs. Maximum power consumption specifications are available in the detailed planning guide.

Environmental Tolerances: The ZXONE 9700 is engineered to operate in a temperature-controlled central office environment. The specified ambient operating temperature ranges from 0°C to 45°C, with a relative humidity range of 10% to 90% (non-condensing). These limits must be strictly observed during installation and operation to ensure system stability and longevity.

Parameter	Specification
Form Factor	Modular, 19-inch Rack-Mountable (e.g., 1RU, 2RU, 12RU Chassis)
Switching Capacity	Up to 3.2 Tbps (Non-Blocking, Full-Duplex)
Power Supply	1+1 or N+1 Redundant AC (100-240V) / DC (-48V)

Operating Temperature	0°C to 45°C
Relative Humidity	10% to 90% (Non-Condensing)
Mean Time Between Failures (MTBF)	> 500,000 Hours (System Level)

REGULATORY COMPLIANCE

ZXONE 9700 is fully compliant with a comprehensive suite of international and regional standards, ensuring its broad acceptance in global telecom networks.

Key compliance areas include:

- SAFETY STANDARDS: Certified to IEC 60950-1 and EN 60950-1 standards for information technology equipment safety.
- EMC DIRECTIVES: Compliant with EN 300 386, FCC Part 15, and other relevant EMC regulations, ensuring minimal electromagnetic interference.
- TELECOMMUNICATIONS STANDARDS: Conforms to a wide array of ITU-T Recommendations (e.g., G.709, G.798, G.872) and MEF (Metro Ethernet Forum) specifications for service delivery and interoperability.
- ENVIRONMENTAL REGULATIONS: Meets RoHS (Restriction of Hazardous Substances) requirements, ensuring environmentally responsible manufacturing and disposal.
- LASER SAFETY: All optical interfaces are compliant with Class 1 laser safety

requirements as per IEC 60825-1, ensuring safe operation and maintenance.

