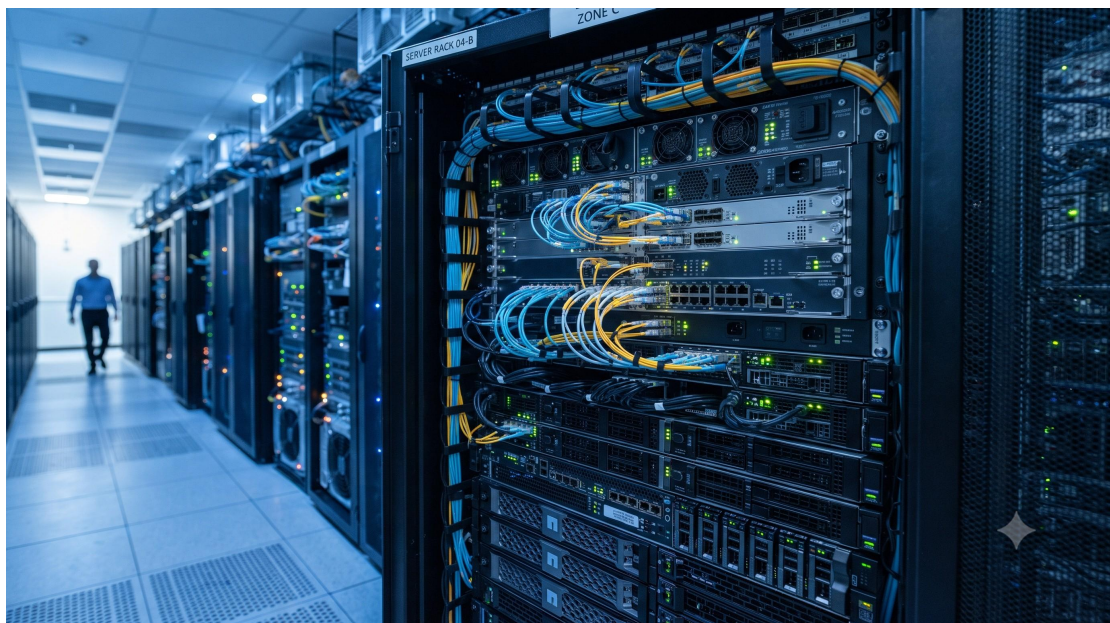


ZXR10 Series Switch - Official Technical Overview & Hardware Datasheet

EXECUTIVE SUMMARY

The ZXR10 Series from ZTE Corporation represents a paradigm shift in ethernet switching infrastructure, purpose-built to address the escalating demands of the 5G era, cloud computing, and massive data center interconnectivity . As a comprehensive portfolio ranging from compact access layer devices to colossal core routing platforms, the ZXR10 series delivers unparalleled scalability, carrier-grade reliability, and future-proof performance. This document serves as the definitive technical reference for network architects and procurement specialists, detailing the hardware specifications, architectural philosophies, and compliance standards that cement the ZXR10 as the strategic choice for building high-performance, resilient, and intelligent network infrastructures.



ARCHITECTURE & CHASSIS DESIGN

The ZXR10 Series is engineered upon a modular, high-availability chassis architecture designed to support a diverse set of deployment scenarios. The flagship ZXR10 9900X series, for instance, utilizes an advanced orthogonal CLOS (Clos) switching fabric with a zero-backplane design . This revolutionary approach decouples the line cards from the backplane, allowing for seamless capacity upgrades without replacing the entire chassis, thereby protecting capital investment and supporting bandwidth requirements for the next decade .

A key architectural hallmark across the series is the separation of the control, data, and monitoring planes . The ZXR10 8900E and 9900 series feature physically independent line cards, switching fabric modules, and main control boards . This physical separation ensures that high-speed data forwarding continues uninterrupted even if the control plane experiences a failure, guaranteeing deterministic, low-latency performance critical for carrier-grade and enterprise core networks. The chassis designs prioritize modularity; the ZXR10 S600E-4, for example, provides dedicated slots for main control boards, switch fabric modules, and up to 4 service line cards, offering a flexible and scalable platform for the network edge .

HARDWARE FEATURES

The ZXR10 Series boasts a rich array of hardware features designed to meet the rigorous demands of modern network environments.

1. **NON-BLOCKING SWITCHING ARCHITECTURE:** Utilizing advanced Cell (信元) switching technology and Network Processor (NP) programmable architectures, the series guarantees non-blocking data forwarding . This ensures wire-speed performance across all ports under full-load conditions, eliminating bottlenecks and delivering deterministic latency for latency-sensitive applications.
2. **HIGH-DENSITY PORT MATRIX:** The platforms support a comprehensive range of interface types to accommodate diverse media and speed requirements. From 1GE (RJ45/SFP) and 10GE (SFP+) for access and aggregation, to 40GE (QSFP+), 100GE (QSFP28), and on the ZXR10 9900X, up to 400GE and 800GE ports for the most demanding data center cores and internet peering points .
3. **INTELLIGENT POWER & THERMAL MECHANISMS:** Designed for operational efficiency, the ZXR10 Series incorporates advanced thermal management strategies. High-end chassis (e.g., 9900X, 8900E, S600E) employ modular, hot-swappable fan trays with front-to-back airflow patterns to optimize cooling in data center hot-aisle/cold-aisle containment . Redundant power supplies (AC, DC, and HVDC) are supported across the portfolio, featuring N+N or 1+1

redundancy patterns to ensure uninterrupted service . Select models in the 9900X series further support innovative liquid cooling technologies, drastically improving thermal efficiency and reducing overall data center Power Usage Effectiveness (PUE) .

4. HIGH-AVAILABILITY REDUNDANCY: At the core of the hardware design is a philosophy of zero downtime. Key components—including main control boards, switch fabric modules, power supplies, and fan trays—are fully redundant and hot-swappable . This, combined with software-level capabilities like ISSU (In-Service Software Upgrade) and NSF (Non-Stop Forwarding), ensures the network can withstand component failures and software upgrades without service disruption, meeting the 99.999% reliability requirements of mission-critical networks.

COMPLIANCE & STANDARDS

The ZXR10 Series is designed and certified to meet a comprehensive range of international and industry-specific standards, ensuring interoperability and global deployment readiness.

* IPv6 READINESS: The entire platform has achieved full IPv6 Phase 2 Gold certification, demonstrating robust support for IPv6 foundation protocols, routing (OSPFv3, RIPng), and IPv4/IPv6 dual-stack operation, making it fully

compliant with next-generation network transition strategies .

* ENVIRONMENTAL ACCREDITATIONS: The hardware is validated to operate reliably in a wide range of environmental conditions. Long-term operating temperature ratings typically range from 0 ° C to +45 ° C, with short-term tolerance extending from -5°C to +50°C, and humidity tolerance from 5% to 95% (non-condensing) . The ZXR10 5200G access switch extends this operational range, with a long-term working temperature of -10°C to +45°C, suitable for demanding edge deployments .

* GREEN ENERGY EFFICIENCY (EEE): Adherence to IEEE 802.3az Energy Efficient Ethernet (EEE) standards is a core feature across the series, dynamically reducing power consumption during periods of low network activity and contributing to a lower total cost of ownership (TCO) .

TECHNICAL SPECIFICATIONS

Parameter	Specification
Form Factor	1RU (5200G) to 33RU (9916X) Chassis
Switching Capacity	Up to 198 Tbps / 1024 Tbps (S600E)
Max Port Density	Up to 800GE (9900X)
Power Supply	1+1, 3+3, or N+N Redundant AC/DC/HVDC
Cooling	Front-to-Back Airflow; Liquid Cooling

	Option (9900X)
Redundancy	N+1/N+N for Main Control, Switch Fabric, Power, Fans
Operating Temperature	0 ° C to +45 ° C (Long-term); -5 ° C to +50°C (Short-term)

ORDERING OPTIONS

The ZXR10 Series provides a vast array of platforms and line cards to precisely match the performance, density, and feature requirements of any network environment. The following represents a high-level summary of the product families:

* CORE & DATA CENTER SWITCHES (ZXR10 9900X / 9900 / 9900-S Series):

The ultimate performance tier for spine-leaf data center fabrics and large-scale enterprise cores. Supports up to 800GE interfaces and features the highest switching capacities (up to 198Tbps) and deep buffer capabilities for lossless RoCE networks .

* METRO & CAMPUS CORE (ZXR10 8900E / C89E / S600E Series): High-end modular chassis designed for carrier-grade MANs, campus cores, and large enterprise networks. Offers a balance of high density (up to 100GE) with

comprehensive Layer 2/3, MPLS, and advanced virtualization features (VSC2.0, VXLAN) .

- * **ACCESS & AGGREGATION SWITCHES (ZXR10 5200G Series):** Cost-effective, fixed-form-factor switches delivering high-density 1GE access with 10GE uplinks. Designed for enterprise access layers, featuring robust PoE/PoE+ capabilities and EEE for green deployments .

- * **LINE CARDS & MODULES:** A comprehensive selection of interface modules for modular chassis is available, including: 48-port 1GE RJ45/SFP, 48-port 10GE SFP+, 6-port 100GE QSFP28, and high-density 40GE/100GE cards for the 9900X series.

