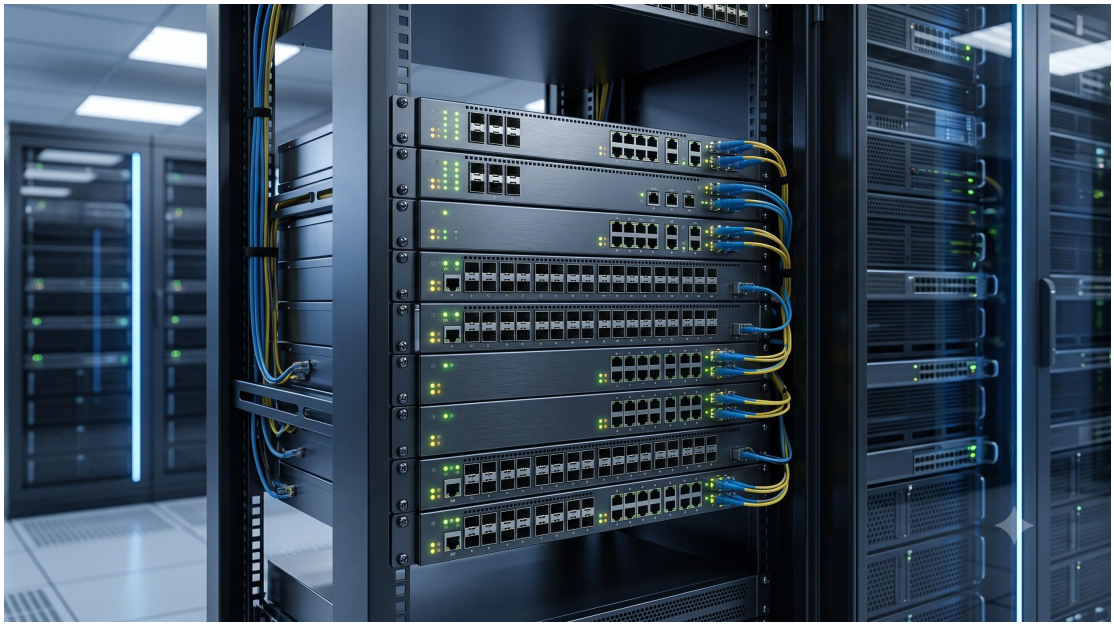
ZXA10 C300 Command Line Interface - Official Technical Overview & Hardware Datasheet

EXECUTIVE SUMMARY

The ZTE ZXA10 C300 is a carrier-grade, future-proof Optical Line Terminal (OLT) platform engineered to address the exponential bandwidth growth and service convergence requirements of modern telecommunications networks. As a unified full-service optical access platform, the ZXA10 C300 integrates support for GPON, EPON, 10G EPON, and Point-to-Point (P2P) active Ethernet within a single, high-density chassis .

This document serves as the authoritative engineering reference for the Command Line Interface (CLI) management and hardware specifications of the ZXA10 C300. It details the platform's robust architectural design, comprehensive CLI-based configuration framework, advanced Quality of Service (QoS) capabilities, and stringent hardware compliance standards, providing network engineers and technical procurement specialists with the essential technical data required for effective deployment and lifecycle management.



HARDWARE ARCHITECTURE & SILICON

The ZXA10 C300's hardware design is rooted in a modular, high-availability chassis architecture. The system is built upon a non-blocking backplane delivering a switching capacity of 400Gbps, ensuring all line cards can operate at wire-speed without contention .

Chassis Configurations:

- **19-inch Chassis:** Occupies 21 slots, comprising 14 universal line card slots, 2 slots for redundant switch & control cards, 2 slots for power cards, 2 slots for uplink/cascading interfaces, and 1 slot for an environment detection card .
- **21-inch Chassis:** Features 23 slots with 16 universal line card slots for increased subscriber density .

The core of the system is its fully redundant control and switching fabric. It supports hot-swappable main control boards, specifically the SCXN, SCTM, SCXM, or SCXL models, which integrate the system's control plane and switching functionality . The platform's per-slot throughput is rated at 20Gbps, placing it at the forefront of the OLT market for its capacity to handle high-end, mass-market services .

KEY FEATURES & ROUTING LOGIC

The ZXA10 C300 is distinguished by its flexible software-defined architecture, managed through a comprehensive CLI. The CLI is structured into a hierarchical command tree, featuring distinct modes such as User Mode (ZXAN>) and Administrator Mode (ZXAN#), which enforce strict privilege-based access control .

The platform's extensive feature set includes:

- **Unified Access & Future-Proofing:** Supports a wide array of access technologies on a single platform, including GPON/EPON, 10G EPON, XG-PON1, and P2P. This architecture ensures a seamless migration path to next-generation PON standards like NG-PON2, safeguarding operator investments .

- **High-Density Subscriber Management:** Line cards are available with up to 8 ports for GPON/EPON or 16 ports for P2P active Ethernet, supporting high split ratios (up to 1:128 for GPON) and enabling massive subscriber aggregation per chassis .

- **Advanced CLI Command Framework:** The CLI provides granular control over the entire system, categorized into system, network configuration, diagnostic, and management commands . This allows for detailed configuration of VLANs, routing, and security policies .

- **Comprehensive QoS & Traffic Management:** Boasts a robust QoS engine with eight queues per port, supporting SP, WRR, and SP+WRR scheduling algorithms. It enables traffic classification based on IP 5-tuples, VLAN IDs, and DSCP values, with precise rate limiting, shaping, and WRED for congestion management .

- **Enhanced Multicast & IPTV Capabilities:** Features optimized multicast functionality supporting IGMP v1/v2/v3 snooping and proxy, multicast VLAN, and channel access control (CAC). This ensures a premium IPTV experience with less than 50ms channel zapping delay .

- **High Reliability & Redundancy:** The hardware supports comprehensive protection mechanisms, including Type B/C PON protection, LACP (Link Aggregation Control Protocol) for uplink protection, and 1+1 power supply redundancy. The CLI provides full command support for configuring these high-availability features .

- **Security Architecture:** Integrates a suite of security features such as ONT authentication, MAC/IP anti-spoofing, DoS attack resistance, and SSH v2 for secure management access .

COMPLIANCE & STANDARDS

The ZXA10 C300 is designed to meet the stringent requirements of global telecommunications networks, adhering to a comprehensive array of international standards:

- **PON Standards:** Compliant with IEEE 802.3ah (EPON), ITU-T G.984.x (GPON), and IEEE 802.3av (10G EPON) .
- **Service & Protocol Compliance:** Supports MEF 8 and PWE3 for CES, and incorporates protocols like 1588v2 and Synchronous Ethernet for precise timing .
- **Management & Security:** Offers a full suite of management protocols including CLI, Telnet, SNMP v1/v2c/v3, and SSH, alongside robust security protocols for hardened management .
- **Environmental & Safety:** Operates within a temperature range of -25°C to +55°C and a humidity range of 5% to 95%, making it suitable for diverse deployment environments .

TECHNICAL SPECIFICATIONS

Parameter	Specification
Form Factor	19-inch (21 slots) or 21-inch (23 slots) Modular Chassis
Switching/Backplane Capacity	400 Gbps (Redundant) / 3.2 Tbps (Aggregate)
Per-Slot Throughput	20 Gbps
Control & Switch Cards	SCXN, SCTM, SCXM, or SCXL (Hot-Swappable)
Power Supply	Dual Hot-Swappable Redundant DC (-48V/-60V)
Operating Temperature	-25°C to +55°C
Operating Humidity	5% to 95%, Non-condensing
Supported Access Technologies	GPON, EPON, 10G EPON, XG-PON1, P2P Ethernet
Maximum Split Ratio	1:128 (GPON)
Maximum Subscriber Density (19-inch)	Up to 4,096 ONTs (at 1:32 split ratio)

