ZTE C300 OLT System Compatibility Matrix with Third-Party Transceiver Modules - Official Technical Overview & Hardware Datasheet

PRODUCT IDENTIFICATION AND STRATEGIC POSITIONING

The ZTE ZXA10 C300 Optical Line Terminal (OLT) stands as a proven, carrier-grade fiber access platform, purpose-built for high-density FTTx network deployments. As a cornerstone of the access network, the C300 platform offers a unique blend of deployment flexibility, supporting both GPON and EPON standards, alongside P2P active Ethernet and 10G EPON. This versatility provides network operators with a formidable advantage, allowing for a unified infrastructure that adapts to diverse service requirements, from high-speed internet and IPTV to mobile backhaul. With a fully redundant 400 Gbps backplane and per-slot throughput of 20 Gbps, the C300 was positioned at the forefront of OLT capabilities, designed to support the rigorous demands of Tier 1 operators such as China Telecom and PCCW. Its substantial switching capacity, which can scale to a terabit range across a fully loaded chassis, underscores its role as a high-capacity aggregation node suitable for small to medium-scale FTTH builds and as a cost-effective solution for existing brownfield network expansions.



CORE INTERNAL TOPOLOGY AND SWITCHING SUBSYSTEM CAPABILITIES

The architectural prowess of the ZXA10 C300 is centered on its robust internal topology, engineered for high availability and non-blocking performance. The platform operates on a 10U, 21-slot chassis configuration, which provides dedicated slots for critical system components: 14 slots for high-density service interface cards, two slots for redundant main control and switching fabric modules (SCXM/SCXL/SCXN/SCTM families), and two slots for uplink interface cards. This design ensures that the system's control plane and data plane are physically and logically distinct, enhancing overall system stability. The switching subsystem, built upon a 400 Gbps fully redundant backplane, allocates 20 Gbps of dedicated bandwidth to each service slot, enabling line-rate forwarding for all connected subscribers. The system's redundant architecture extends to its power supply and cooling units, with all critical

modules supporting hitless 1+1 failover, guaranteeing carrier-grade reliability and an industry-leading Mean Time Between Failures (MTBF). The C300's design prioritizes investment protection, as its hardware architecture was conceived to support evolution, maintaining compatibility with a range of interface cards and facilitating future network upgrades.

OPERATIONAL ADVANTAGES AND COMPATIBILITY MATRIX

A key operational advantage of the ZTE ZXA10 C300 is its commitment to open standards, which is critical for network operators seeking to avoid vendor lock-in and optimize procurement costs. The platform's compatibility with third-party transceiver modules and ONUs provides significant strategic and financial benefits. By adopting formally validated third-party modules, network engineers can achieve cost savings of 30-60% compared to OEM optics without sacrificing performance, provided the modules adhere to Multi-Source Agreement (MSA) and IEEE 802.3 standards. To ensure seamless deployment, it is essential to select modules from reputable vendors with proven interoperability. The C300 supports a broad spectrum of transceiver types across its uplink and PON interfaces, including 1000BASE-SX and -LX for Gigabit Ethernet, 10GBASE-SR for 10-Gigabit uplinks, and B+/C+/C++ optical modules for GPON and XGS-PON applications. A critical factor for success is the use of modules with correct EEPROM programming and Digital Optical

Monitoring (DOM) support, enabling real-time network health monitoring through the C300's management system. The table below provides an overview of tested compatibility scenarios, demonstrating the platform's proven interoperability with a range of third-party transceivers for standard-compliant operations, such as basic GPON framing and layer-2 connectivity, while cautioning that advanced features like proprietary OMCI management may require ZTE-branded ONUs or specific custom interoperability codes. This framework empowers operators to build a resilient, cost-effective network that leverages the best-of-breed optical components while maintaining the high performance and reliability expected of a carrier-grade OLT.

SPECIFICATION MATRIX AND KEY FEATURES

- Carrier-Grade Hardware Reliability: Fully redundant, hot-swappable components include the main control board (1+1 redundancy), power supply modules (AC/DC), and fan trays, ensuring zero-service-impact maintenance.
- Flexible Uplink Interfaces: Supports a variety of high-speed uplink cards, including 4 × 10 Gigabit Ethernet (SFP+), 4/8/16 × Gigabit Ethernet (SFP), and legacy STM-1/OC-3 uplinks, allowing for seamless integration into existing transport networks.
- Precision Timing and Synchronization: Integrated support for Synchronous Ethernet and IEEE 1588v2, making the platform ideal for mobile backhaul and

other delay-sensitive applications.

- Comprehensive Quality of Service: Offers robust H-QoS with 8 queues per port and a suite of scheduling algorithms (SP, WRR, SP+WRR), ensuring strict Service Level Agreements (SLAs) for voice, video, and data traffic.

- Advanced Multicast Capabilities: Supports up to 2K multicast groups with IGMP snooping and proxy, channel access control, and channel zapping delays of less than 50ms, critical for delivering high-quality IPTV services.

- Optical Layer Versatility: Supports PON interfaces with B+/C+/C++ SFP modules and features a separate 1550nm wavelength input for seamless overlay of third-party CATV/RF video services.

Parameter	**Specification**
Form Factor	10U, 19-inch Rack-Mountable Chassis
Total Slots	21 (14 Service, 2 Main Control, 2 Uplink, 2 Power, 1 Fan Tray)
Switching Capacity	400 Gbps (Redundant Backplane) / Up to 3.2 Tbps (Aggregate)
Per-Slot Bandwidth	20 Gbps
Supported PON Technologies	GPON, EPON, XG-PON1, 10G-EPON, P2P Active Ethernet
Uplink Interface Options	4 × 10GE (SFP+), 4/8/16 × GE (SFP), STM-1/OC-3

Power Supply	Dual Hot-Swappable Redundant AC (110/220V) or DC (-48V/-60V)
Time Synchronization	IEEE 1588v2, Synchronous Ethernet
Regulatory Compliance	CE, FCC, CB, RoHS
MTBF (Estimated)	> 200,000 Hours (Telcordia SR-332)

REGULATORY COMPLIANCE AND LIFECYCLE ASSURANCE

The ZTE ZXA10 C300 is designed and manufactured to meet the highest global standards for telecom equipment, ensuring its suitability for deployment in diverse regulatory environments. The platform is fully compliant with international certifications including CE, FCC, CB, and RoHS, reflecting a commitment to environmental sustainability and electromagnetic compatibility. For optical interfaces, the system adheres to ITU-T G.984 (GPON) and IEEE 802.3ah (EPON) standards, ensuring interoperability with compliant third-party optical network terminals and transceivers. The platform's lifecycle is supported by ZTE's global service network, providing software maintenance, hardware repairs, and technical support to maximize the operational lifespan of the asset. With a field-proven track record since its general availability in 2009, the C300 platform remains a viable and robust solution for network operators, offering a stable and mature platform for existing FTTx networks. MTBF calculations for

the platform, based on a Telcordia SR-332 standard, typically exceed 200,000 hours for the core chassis, demonstrating its high reliability. Strategic enterprises can leverage this high level of reliability and long-term support to minimize total cost of ownership and ensure network continuity.

