ZXA10 C600 High-Capacity OLT Backbone Router Integration Reference - Official Technical Overview & Hardware Datasheet

CARRIER-GRADE OPTICAL ACCESS PLATFORM: ZXA10 C600 HIGH-CAPACITY OLT BACKBONE ROUTER INTEGRATION REFERENCE

EXECUTIVE SUMMARY

The ZXA10 C600 is a groundbreaking, large-capacity Optical Line Terminal (OLT) developed by ZTE under the TITAN series. It is engineered to address the exploding bandwidth demands of 4K/8K video, Virtual Reality (VR), Fixed-Mobile Convergence (FMC), and the evolution towards 5G transport networks . As the industry moves beyond legacy broadband platforms, the C600 establishes a new benchmark for access network performance and scalability. It is designed as a fully distributed, programmable router architecture, positioning the OLT not merely as an access device, but as a core routing and switching platform for the next-generation network .



HARDWARE ARCHITECTURE & SILICON

The ZXA10 C600 is built on a high-end, fully distributed and non-blocking router architecture, employing a CLOS (Clos network) switching fabric . This design choice is critical as it elevates the OLT from a simple aggregation point to a high-performance routing node capable of handling the complex traffic patterns of modern networks. The platform's architecture ensures that the control plane and forwarding plane are separated; the control plane is fully redundant, and the forwarding plane supports load sharing, providing a robust and resilient foundation for carrier-grade services .

At the heart of the C600 is a highly integrated, programmable Network Processor (NP). This built-in NP allows for flexible service upgrades and ensures the platform is future-proof, capable of adapting to new protocols and features

without hardware replacement . The system backplane offers an industry-leading 200 Gbps bandwidth per service slot, enabling unprecedented port densities and line-rate throughput .

KEY FEATURES & ROUTING LOGIC

- **Any-PON & Future-Proof Investment**: The C600 supports a true multi-generational PON convergence platform, offering flexible switching between GPON, XG-PON, XGS-PON, and Combo PON technologies via a single 5-in-1 chipset . This allows operators to smoothly migrate to 10G PON services with zero changes to the existing Optical Distribution Network (ODN), extending the service life of the equipment and optimizing capital expenditure .

- **Integrated NFVI & SDN-Ready**: Featuring an industry-first built-in blade server, the platform functions as a lightweight Network Functions Virtualization Infrastructure (NFVI) . This enables the hosting of virtualized applications directly on the OLT, such as Customer Experience Management (CEM) analytics and other value-added services, shifting network computing power closer to the edge. The C600 fully supports SDN principles with native NetConf/YANG and Telemetry protocols, ensuring a smooth evolution towards software-defined networks .

- **Carrier-Grade Reliability & Redundancy**: To guarantee 99.999% availability, the chassis supports comprehensive redundancy for all critical components, including main control switching boards, power supply units, and fans. It supports Type B and Type C protection switching for network-level redundancy and incorporates hitless ISSU and NSR features for zero-downtime upgrades .

- **Ultra-Low Latency Forwarding**: Leveraging its advanced distributed architecture, the C600 provides deterministic, low-latency forwarding paths. It supports TDM-like forwarding channels, a crucial requirement for transporting 5G uRLLC (Ultra-Reliable Low-Latency Communications) services and financial data traffic .

COMPLIANCE & STANDARDS

The ZXA10 C600 is designed to meet the most rigorous international standards for telecom equipment. Its adherence to key industry protocols ensures seamless interoperability and integration into existing network environments.

- **ITU-T Standards**: Fully compliant with ITU-T G.984.x (GPON), G.987 (XG-PON), G.9807.1 (XGS-PON), ensuring a global standard-based approach to PON technology .
- **Carrier Ethernet**: Supports MEF-compliant Carrier Ethernet services,

delivering sophisticated Quality of Service (QoS), performance monitoring, and network management capabilities .

- **Environmental Standards**: Operates reliably across a wide temperature range of -40 ° C to +65 ° C, making it suitable for various deployment environments from central offices to outdoor cabinets .

- **Safety & Certification**: The platform meets essential safety and environmental certifications including CE and RoHS, ensuring compliance with global market access requirements .

TECHNICAL SPECIFICATIONS

The ZXA10 C600 is offered in two chassis variants to suit diverse rack space and density requirements: a standard 19-inch model and a wider 21-inch model for maximum port density.

Parameter	**Specification**
Form Factor	19-inch (15 service slots) & 21-inch (17 service slots); 11U Rack-mountable
Dimensions (H x W x D)	19-inch: 486.1 x 482.6 x 288.5 mm; 21-inch: 486.1 x 535 x 288.5 mm
Chassis Weight (Full Config)	19-inch: < 52 kg; 21-inch: < 58 kg
Service Slot Bandwidth	200 Gbps per slot

System Switching Capacity	7.2 Tbit/s
Uplink Interface Cards	8/16 x 10GE/GE; 2 x 100GE
PON Line Cards	16 x GPON; 16 x 10G-EPON; 16 x XG-PON/XGS-PON Combo
P2P Line Cards	16 x 10GE; 24/48 x GE/FE
Max PON Ports	272 (21-inch chassis) / 240 (19-inch chassis)
Power Supply	Dual Hot-Swappable Redundant DC: -48V / -60V (+/- 20%)
Operating Temperature	-40°C to +65°C (Min. startup: -25°C)
Operating Humidity	5% to 95% (non-condensing)

