

ZTE C320 OLT - Official Technical Overview & Datasheet

EXECUTIVE SUMMARY

The ZTE C320 Optical Line Terminal (OLT) represents a compact, high-density access solution engineered for network operators seeking to deploy FTTH, FTTB, and enterprise-grade converged services. Designed for edge deployment in space-constrained central offices, remote cabinets, and multi-dwelling unit (MDU) environments, the C320 bridges the gap between massive chassis-based systems and low-density customer premises equipment. Its primary value proposition delivers wire-speed GPON and XG-PON capabilities with sub-100 microsecond latency, enabling symmetrical gigabit-class broadband, IPTV, VoIP, and SLAs for business-critical applications.

Targeting Tier-2/3 ISPs, municipal broadband projects, and enterprise campus networks, the C320 reduces total cost of ownership through passive cooling options, energy-efficient silicon, and pay-as-you-grow modularity. By supporting seamless GPON to XGS-PON migration within the same chassis, the platform protects capital investments while offering a clear evolutionary path to 10G symmetrical services. With a switching capacity of 128 Gbps and support for up to 8 GPON ports, the C320 is the industry's most dense 1RU OLT for greenfield and brownfield deployments.



ARCHITECTURE & DESIGN

The ZTE C320 employs a 1RU, 19-inch rack-mountable chassis with a front-access service port layout and rear-facing power and management interfaces. The hardware architecture separates the data plane from the control plane using a distributed switching fabric: a central switch module (SCUN) provides Layer 2/Layer 3 aggregation, while each GPON/XG-PON interface card performs independent framing and encryption offload. This design eliminates head-of-line blocking and ensures deterministic forwarding under full load.

Redundancy is addressed via optional 1+1 power supply units (AC or DC hot-swappable modules) and a field-replaceable fan tray with N+1 rotor redundancy. The SCUN control module supports graceful restart and non-stop routing (NSR), while the PON interfaces feature Type B protection switching (protect trunk

groups) with recovery times under 50 milliseconds. Cooling employs front-to-back airflow with dual-rotor fans operating at variable speeds based on temperature telemetry; fan failure triggers a raised alarm but maintains system operation at reduced thermal margin. All field-replaceable units (FRUs) including PON cards, PSUs, and fans are accessible without tools or service interruption.

KEY FEATURES

- Multi-Generation PON Convergence: The C320 simultaneously supports GPON (ITU-T G.984), XG-PON (G.987), and XGS-PON (G.9807.1) on the same chassis. Mixed cards allow operators to serve legacy 2.5G GPON subscribers while deploying 10G symmetric XGS-PON to enterprise or 5G backhaul customers from one OLT.
- Advanced QoS & SLA Enforcement: Hierarchical QoS (HQoS) at the PON TC layer enables per-ONU, per-queue, and per-service shaping with 8 traffic classes. Supports 802.1p remarking, DiffServ (DSCP) mapping, and ingress policing down to 64 kbps granularity, critical for leased line and business VPN services.
- IPv6 and Multicast Optimization: Native dual-stack IPv4/IPv6 forwarding with MLD snooping v1/v2, PIM-SSM, and IGMP proxy. The hardware-based multicast replication engine supports up to 1,000 concurrent IPTV channels without CPU intervention, ensuring linear scaling for live video delivery.
- Security & Encryption: AES-128 encryption per G.984.3 for GPON and AES-256

for XG(S)-PON with churning disabled by default. Control plane protection (CoPP) limits ICMP, SNMP, and SSH rates, mitigating DoS attacks. Supports MAC force forwarding (MFF) and DHCP snooping with Option 82.

- Energy-Efficient Operation: Compliant with ETSI EN 300 119-3, the C320 implements port-level power-down for inactive PON interfaces and adaptive fan control based on intake temperature. Typical power draw of 65W fully loaded reduces OPEX by 30% compared to previous-generation OLTs.

COMPLIANCE & STANDARDS

The ZTE C320 meets global regulatory and industry standards including CE (RED Directive 2014/53/EU), FCC Part 15 Class A, RoHS 2011/65/EU, and REACH. Telecom certifications: NEBS Level 3 (GR-63-CORE, GR-1089-CORE) for temperature, humidity, vibration, and ESD immunity. Protocol conformance includes ITU-T G.984.x, G.987.x, G.9807.1, IEEE 802.1Q (VLAN stacking, Q-in-Q), IEEE 802.3ad (LACP), RFC 2544 (performance benchmarking), and Y.1731 (OAM). Safety certified to IEC 62368-1 (Audio/video and ICT equipment).

TECHNICAL SPECIFICATIONS

Below are the key operational parameters for the ZTE C320 OLT platform. All values are measured under full load at 25°C ambient unless otherwise noted.

Parameter	Specification
Form Factor	1RU, 19-inch chassis (442mm W x 220mm D x 44mm H)
Switching Capacity	128 Gbps (non-blocking)
Forwarding Rate	95 Mpps (64-byte packets)
PON Port Density	8 x GPON or 4 x XGS-PON (mixable, up to 8 PON total)
PON Interface Type	SFP/SFP+ (Class B+/C+/C++)
Max ONU per PON	128 (GPON) / 64 (XGS-PON)
Uplink Ports	4 x 10GE SFP+ (LAN/WAN) + 2 x GE Combo (RJ45/SFP)
Power Supply	1+1 redundant, hot-swappable: AC 100-240V (50/60Hz) or DC -48V
Max Power Consumption	85W (fully loaded with 8 GPON SFP modules)
Operating Temperature	-5°C to +55°C (extended: -40°C with DC power and fan boost)
Humidity	5% to 95% (non-condensing)
MTBF (25°C)	> 220,000 hours (Telcordia SR-332)
Management	CLI (SSHv2), SNMP v2c/v3, NETCONF, RESTCONF, ZTE U31 NMS

