ZTE GTGO 8-Port GPON Service Board - Official Technical Overview & Hardware Datasheet

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OFFICIAL TECHNICAL OVERVIEW & HARDWARE DATASHEET

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EXECUTIVE SUMMARY

ZTE Corporation introduces the GTGO 8-Port GPON Service Board, a next-generation, high-density optical line terminal (OLT) interface card engineered for the ZTE C600 series and other compatible intelligent OLT chassis. This service board is architected to meet the explosive bandwidth demands of modern fiber-to-the-home (FTTH), fiber-to-the-building (FTTB), and fiber-to-the-premises (FTTP) networks, providing a carrier-grade, future-proof solution for gigabit and multi-gigabit broadband access. The GTGO board redefines network efficiency by integrating robust hardware acceleration, advanced power-saving technologies, and comprehensive quality of service (QoS) mechanisms.

Designed for telecom operators and managed service providers, the GTGO

board enables symmetrical 2.5 Gbps downstream and 1.25 Gbps upstream bandwidth per PON port, aggregating a total switching capacity that ensures non-blocking performance across all eight physical interfaces. Its sophisticated hardware architecture offloads network processing from the main control board, delivering superior packet forwarding and efficient handling of multicast traffic for IPTV, video surveillance, and enterprise data services. The board’ s enhanced optical diagnostics and built-in protection features ensure unmatched service reliability, making it the ideal choice for dense urban deployments, smart city infrastructure, and business-critical connectivity.



HARDWARE ARCHITECTURE & SILICON

The GTGO is built upon a state-of-the-art programmable silicon platform that integrates a high-performance network processor with dedicated GPON Media

Access Control (MAC) and burst-mode transceiver logic. The board's architecture is segregated into three primary functional planes: the Data Plane, the Control Plane, and the Management Plane. The Data Plane features a specialized forwarding engine capable of wire-speed processing of 2.5 Gbps downstream and 1.25 Gbps upstream per port, leveraging deep packet inspection (DPI) capabilities for advanced traffic classification without compromising throughput.

At the core of the board lies a custom ASIC that handles the GPON Transmission Convergence (TC) layer and dynamic bandwidth allocation (DBA) in hardware. This acceleration minimizes latency for real-time applications and ensures deterministic performance even under full line-rate load. The board connects to the system backplane via a 10 Gigabit Ethernet interface, facilitating high-speed uplink aggregation and inter-chassis communication. Furthermore, the GTGO supports intelligent energy management, dynamically scaling power consumption based on active port utilization, which contributes to significant operational expenditure (OPEX) savings in large-scale central offices.

KEY FEATURES & ROUTING LOGIC

- High-Density GPON Termination: The board provides eight independent GPON ports, each capable of servicing up to 128 optical network units (ONUs),

resulting in a total of 1024 ONUs per board, dramatically reducing the chassis footprint per subscriber.

- Advanced Dynamic Bandwidth Allocation (DBA): Features a hardware-accelerated DBA engine that offers multiple allocation modes, including fixed, assured, and best-effort bandwidth, ensuring optimal user experience and network utilization for mixed service profiles.

- Comprehensive Multicast Support: Internal hardware logic supports robust IGMP snooping and filtering, enabling efficient IPTV channel switching and multicast VLAN registration, minimizing network congestion.

- Enhanced Optical Power Budget: Each SFP-based GPON port supports Class B+ and C+ optical modules, providing a link budget of up to 32 dB, allowing for long-reach deployments spanning over 20 kilometers.

- Integrated In-Service Testing: Supports OTDR functionality and onboard optical power monitoring (DOM), allowing remote troubleshooting and proactive maintenance of the optical distribution network (ODN).

- Hardware-Based Security: Features AES-128 encryption for downstream traffic, securely protecting subscriber data across the PON, alongside advanced filtering mechanisms to prevent Denial-of-Service (DoS) attacks at the line rate.

COMPLIANCE & STANDARDS

The ZTE GTGO 8-Port GPON Service Board is strictly designed and verified to

meet the rigorous demands of global telecommunications standards. Its development and manufacturing processes adhere to the highest industry certifications for performance, safety, and environmental responsibility.

- ITU-T G.984.x (Gigabit-capable Passive Optical Networks): Full compliance with the G.984.1, G.984.2, G.984.3, and G.984.4 standards for GPON transmission, TC sublayer, and ONU management and control (OMCI).
- IEEE 802.3ah (Ethernet in the First Mile): Compliant with relevant standards for Ethernet transport over the PON, ensuring interoperability with a broad range of standard-compliant ONUs.
- MEF 9 & 14 Certification: The board’ s traffic management capabilities are designed to meet the Metro Ethernet Forum standards for service delivery, ensuring strict Service Level Agreement (SLA) enforcement for Carrier Ethernet services.
- Safety & EMC: Certified to UL 60950-1 and IEC 60950-1 for safety, and compliant with FCC Part 15 (Class A), EN 55022 (Class A), and EN 55024 for electromagnetic compatibility (EMC).
- Environmental Compliance: Fully RoHS (Restriction of Hazardous Substances) compliant and conforms to the requirements of the Waste Electrical and Electronic Equipment (WEEE) directive.
- NEBS Level 3: Designed to meet the rigorous network equipment building system (NEBS) Level 3 requirements for temperature, humidity, vibration, and

ESD, making it suitable for deployment in diverse and uncontrolled central office environments.

TECHNICAL SPECIFICATIONS

Parameter	**Specification**
Form Factor	Standard Service Board (compatible with ZTE C600 Chassis)
GPON Ports	8 x SFP (Class B+/C+ compliant)
Total Subscriber Capacity	Up to 1024 ONUs (128 per port)
Downstream Line Rate	2.488 Gbps per port
Upstream Line Rate	1.244 Gbps per port
Switching Capacity	Non-blocking, ~20 Gbps (full duplex)
Forwarding Capacity	29.76 Mpps (based on 64-byte packets)
DBA Granularity	64 kbps (hardware accelerated)
Max Transmission Distance	20 km (standard), 60 km (with Class C+ optics)
Power Consumption (Typical)	≤ 45 W
Operating Temperature	0°C to 55°C (32°F to 131°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Humidity	5% to 95% (non-condensing)

Mean Time Between Failures (MTBF)	> 500,000 hours



ORDERING SKU INFORMATION

For procurement and inventory management, the ZTE GTGO is available through our global network of distribution partners and direct enterprise sales channels. The following part numbers are applicable for standard configurations:

- ZTE-GTGO-A: Standard configuration board, 8 x SFP GPON ports, no SFP modules included.

- ZTE-GTGO-B-KIT: Full turnkey kit including the service board and eight (8) Class B+ GPON SFP transceivers.

- ZTE-GTGO-C-KIT: Full turnkey kit including the service board and eight (8) Class C+ GPON SFP transceivers for extended reach.

All boards ship with a factory-installed firmware image and include a 1-year standard warranty, extendable to 3 or 5 years with optional enhanced support contracts. For software licensing, the board supports a feature-based licensing model for advanced functions such as enhanced DBA and OAM (Operations, Administration, and Maintenance) tools, which can be activated via the ZTE central management platform.