ZXA10 C300 OLT PRWG Power Board - Official Technical Overview & Hardware Datasheet

PRODUCT IDENTIFICATION

The ZTE PRWG is a high-performance, hot-swappable DC power supply board specifically engineered for the ZXA10 C300 and C350 Optical Line Terminal (OLT) platforms. As a fundamental component of the carrier-grade power architecture, the PRWG board is designed to convert and condition -48 V DC input power, distributing stable and filtered energy to all service and control cards within the chassis. This datasheet provides a comprehensive technical overview, detailing the voltage tolerances, engineering specifications, and operational parameters essential for network planning and deployment.

The PRWG is designed to meet the rigorous demands of FTTx access networks, providing the foundation for reliable, uninterrupted service delivery in FTTH, FTTB, and FTTX architectures .



CORE INTERNAL TOPOLOGY & POWER DISTRIBUTION

The PRWG board serves as the central power distribution hub for the ZXA10 C300 platform. Installed in dedicated power slots (slot 0/1 in the C300 chassis), it interfaces directly with the system backplane to deliver power to up to 14 service line cards and 2 main control boards, with support for 1:1 power supply protection .

The board architecture is centered around a robust power filtering and protection circuit, ensuring the delivery of clean DC power under varying input conditions. Key architectural components include:

- **Input Power Interface:** A single, high-capacity power interface for -48 V DC input.

- **Power Filtering & Protection:** Integrated input filtering to suppress noise and surge protection to safeguard the OLT against voltage transients and under/over-voltage events .
- **Redundancy & Load Balancing:** In a 1+1 redundant configuration, two PRWG boards operate in an active-standby mode with automatic failover. When equipped with two boards, the system supports active/active load sharing for optimal efficiency and reduced individual board strain .
- **System Monitoring & Alarms:** The board includes circuitry for system power consumption detection and continuous monitoring of input voltage levels. It is capable of generating alarms for input under-voltage, over-voltage, and power interruption, enabling proactive network management .
- **Reserved Interfaces:** Features two reserved RJ-45 interfaces for future expansion and management functions .

[IMAGE_1]

SWITCHING SUBSYSTEM CAPABILITIES (SYSTEM CONTEXT)

While the PRWG itself is a power board, its performance is critical to the overall capabilities of the ZXA10 C300 system. The power delivery system supports the platform's industry-leading specifications:

- **Backplane Capacity:** The chassis backplane supports a massive 3.2 Tbit/s switching capacity, which the PRWG powers to ensure no throughput bottlenecks .
- **System Switching Capacity:** The OLT platform provides an 800 Gbit/s switching capacity, fully supported by the robust power delivery of the PRWG boards .
- **High-Density Service Support:** The reliable power architecture enables support for up to 112 PON ports per chassis, accommodating dense GPON, EPON, and next-generation PON technologies .

[IMAGE_1]

OPERATIONAL ADVANTAGES

- **Uninterrupted Service:** The 1:1 power redundancy provided by the PRWG is crucial for carrier-grade availability, supporting features like Type B and Type C PON protection, ensuring minimal service disruption during maintenance or power board failure .
- **Simplified Maintenance:** The hot-swappable design allows for power board replacement without powering down the entire chassis, reducing mean time to repair (MTTR) .
- **Deployment Flexibility:** The board is designed to support a wide range of

DC input voltages, accommodating the typical -48 VDC power found in central offices and also supporting -60 VDC, as well as input voltage ranges down to -38 V DC and up to -57 V DC in certain operational modes .

- **Enhanced System Longevity:** The power filtering and protection mechanisms of the PRWG contribute to the overall lifespan and reliability of the OLT by protecting sensitive electronics from power anomalies .

[IMAGE_1]

SPECIFICATION MATRIX

Parameter	**Specification**
Product Model	PRWG
Compatible Platforms	ZXA10 C300, ZXA10 C350 OLT
Power Input Type	DC
Input Voltage Ranges	-48 VDC ± 20% (up to -57.6V), -60 VDC ± 20%, Operating Range: -38V to -57V
Maximum Output Current	30 A
Typical Power Consumption	5 W
Redundancy Mode	1:1 Protection with Active/Standby or Load Sharing support

Slot Allocation	Slot 0/1 (C300), Slot 11/12 (C350)
Form Factor	Proprietary ZTE OLT Line Card
Dimensions (H x W x D)	197.75 mm x 25 mm x 225 mm
Weight	0.36 kg
Functions	Power filtering, protection, consumption detection, and under/over-voltage alarm
Interfaces	1x Power Input, 2x RJ-45 (Reserved)

[IMAGE_1]

REGULATORY COMPLIANCE & STANDARDS

The ZTE PRWG board, as an integral component of the ZXA10 C300 platform, is designed and verified to meet stringent industry and regulatory standards for telecommunications equipment. The platform adheres to the following compliance requirements:

- **Environmental Standards:** The OLT platform is certified to operate within the temperature range of -5°C to +45°C and humidity levels of 5% to 95% (non-condensing), ensuring reliable operation in a variety of central office

environments .

- **Safety & EMC:** The platform is compliant with global telecom safety and electromagnetic compatibility (EMC) standards. These include certifications such as CE, and the platform has been recognized with awards like the InfoVision Green Broadband Award for its energy-efficient and eco-friendly design .

- **Industry Protocols:** The system, powered by the PRWG, fully supports a comprehensive suite of networking standards, including IEEE 802.3ah (EPON), ITU-T G.984.x (GPON), IEEE 802.3av (10G-EPON), and a full range of Layer 2/Layer 3 protocols for carrier-grade networking .



ENVIRONMENTAL & PHYSICAL SPECIFICATIONS

- **Operating Temperature:** -5°C to +45°C

- **Operating Humidity:** 5% to 95% (non-condensing)

- **Storage Temperature:** -40°C to +70°C

- **Dimensions (H x W x D):** 197.75 mm x 25 mm x 225 mm (approx.) .

- **Weight:** 0.36 kg (approx.) .

- **Card Slots (C300):** Slot 0 and Slot 1 .

- **Card Slots (C350):** Slot 11 and Slot 12 .