XPONSHOP Custom Logo Blank OEM ONU Plastic Mold and Dimensions Schema - Official Technical Overview & Hardware Datasheet

EXECUTIVE SUMMARY

This document provides a comprehensive technical overview and hardware specification for the XPONSHOP Custom Logo Blank OEM ONU Plastic Mold and Dimensions Schema. Designed as a foundational element for global telecommunications equipment providers, system integrators, and value-added manufacturers, this OEM platform offers a fully customizable, carrier-grade Optical Network Unit (ONU) enclosure solution. The schema encapsulates a sophisticated balance of industrial design, thermal management, and standardized physical interfaces, enabling seamless integration into diverse Passive Optical Network (PON) architectures, including GPON, XG-PON, and XGS-PON infrastructures. This datasheet details the structural characteristics, mechanical tolerances, port layout definitions, and compliance markers necessary for high-volume production and rapid market deployment.



HARDWARE ARCHITECTURE & MECHANICAL SILICON DESIGN

The XPONSHOP OEM platform is engineered around a robust, high-impact plastic molding that ensures structural integrity while maintaining a lightweight profile conducive to both indoor and outdoor (with appropriate sealing) deployments. The mechanical design schema is developed using advanced CAD/CAM technologies, specifying a unified chassis that accommodates a standard motherboard footprint, heat sink mounting points, and RF shielding. The molding process employs UL94 V-0 rated flame-retardant plastic, ensuring compliance with international safety standards. The architecture integrates a dedicated recessed area for custom logo imprinting or silk-screening, allowing for complete brand personalization without compromising the device's ingress protection rating. Critical to the design is the optimized airflow channeling, which leverages a combination of passive convection and carefully placed

venting to dissipate heat from the internal System-on-Chip (SoC) and optical components.

KEY FEATURES & ROUTING LOGIC

- Feature 1: Fully Customizable Industrial Design: The mold supports deep customization, including recessed branding zones, specific LED indicator window cutouts, and tailored color requirements, facilitating rapid OEM/ODM private labeling.
- Feature 2: Precision Mechanical Tolerances: Maintains a dimensional accuracy of ±0.1mm on all critical mounting points, ensuring perfect alignment with internal PCBs, fiber pigtail routing, and external connector interfaces.
- Feature 3: Optimized Thermal Management Schema: Incorporates integrated heatsink retention mechanisms and cross-flow ventilation ducts that support operation across a -5°C to 55°C ambient temperature range without active cooling noise.
- Feature 4: Modular Port Interface Mapping: The front panel schema supports a flexible mix of interfaces including 1 or 4 GE LAN ports (RJ-45), one voice port (FXS), and an optical port for SC/APC connectors, all mapped via exact cutout dimensions.
- Feature 5: Mounting Flexibility: Features integrated wall-mounting keyholes and desktop rubber feet inserts, adhering to standard NEMA and ETSI

rack-mount guidelines when paired with optional brackets.

COMPLIANCE & STANDARDS

The XPONSHOP OEM ONU plastic mold design is architected to comply with the most stringent global regulatory and environmental requirements. The material composition meets RoHS 3 (Directive 2015/863) and REACH SVHC standards, ensuring a sustainable and toxic-free product lifecycle. The mechanical structure is tested for vibration and shock resistance per GR-63-CORE standards for telecommunications equipment, guaranteeing reliability in harsh transport and operational environments. Furthermore, the mold's dimensions are specifically aligned with ITU-T G.984 (GPON) and G.987 (XG-PON) standard ONU requirements, ensuring plug-and-play physical compatibility with existing OLT chassis deployments. The ingress protection (IP) rating of the final assembly can be engineered up to IP54 by utilizing the provided sealing grooves and gasket recesses, making the schema suitable for varied field deployment scenarios.

TECHNICAL SPECIFICATIONS

Platform Type: Custom Logo Blank OEM ONU Plastic Enclosure Schema

Chassis Material: High-Impact, UL94 V-0 Flame Retardant PC/ABS Plastic

Physical Form Factor: Desktop / Wall-Mountable

Dimensions (L x W x H): 140.0 mm x 90.0 mm x 28.0 mm (Standard Variant)

Weight (Unpopulated): ~220g (Varies slightly based on paint/logo process)

Thermal Cooling: Passive Convection with Integrated Airflow Ducts

Operating Temperature: 0°C to 45°C (Non-Condensing environment)

Storage Temperature: -20°C to 70°C

Logo Personalization: Recessed 30x10mm area for high-quality silk-screening or thermal transfer printing.

Interface Cutouts: 1x SC/APC OIP, 4x RJ45 LAN, 1x RJ11 POTS, 1x Power Jack (2.1mm), 1x Power Switch Rocker.

Mounting Options: Integrated Keyhole slots for wall mounting; optional rack-mount bracket accessory.

Parameter	**Specification**
Mechanical Tolerance	±0.1mm (Critical Dimensions)
Plastic Flammability Rating	UL94 V-0
Environmental Compliance	RoHS 3 / REACH Compliant
Intended Interface Compatibility	GPON / XG-PON / XGS-PON (Physical Layer)
Ingress Protection Base	Up to IP54 (With Gasket Seal)
Standard Operating Humidity	10% to 90% (Non-Condensing)
Country of Origin	Dependent on Manufacturing Partner

	Facility
Lead Time (First Article)	Approx. 15-20 Working Days Post-Mold Approval

ORDERING SKU INFORMATION

For bulk procurement and custom molding runs, the base SKU is structured as XPON-BASE-ENV-01. Additional options for custom color matching, specific EMI shielding coatings, and special connector cutouts are available under custom engineering services. This datasheet serves as the baseline technical specification for the mechanical schema; final PCB and optical component integration are handled via the customer's specific bill of materials (BOM).

