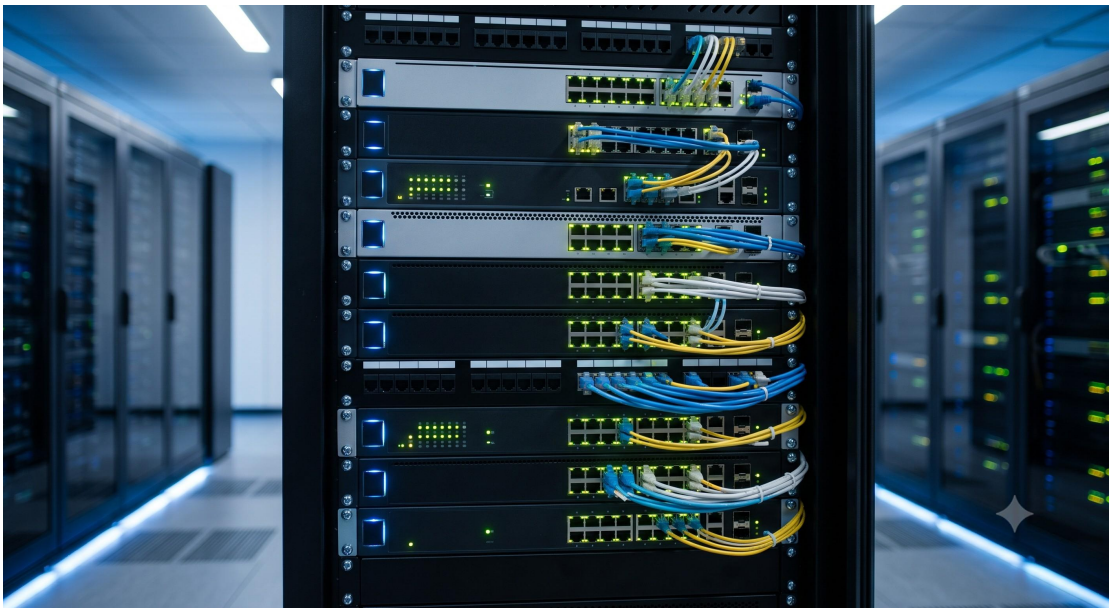
XPONSHOP Carrier-Grade Hardware Refurbishment Standards and Test Protocol - Official Technical Overview & Hardware Datasheet

EXECUTIVE SUMMARY

XPONSHOP introduces its Carrier-Grade Hardware Refurbishment Standards and Test Protocol, a comprehensive framework engineered to deliver network equipment that performs with the dependability of new units while supporting global sustainability initiatives. This document outlines the rigorous processes and technical benchmarks that define the XPONSHOP refurbishment methodology, ensuring each unit meets the stringent demands of modern telecommunications and enterprise network environments.

By adhering to the 'Qualified-as-Good-as-New' (QAGAN) principles as defined in IEC 62309, XPONSHOP guarantees that all refurbished hardware delivers functionality and reliability comparable to newly manufactured products. This commitment is underpinned by a series of meticulous testing, rework, and quality assurance procedures designed to extend the lifecycle of critical network assets and reduce total cost of ownership .



HARDWARE ARCHITECTURE & SILICON

The XPONSHOP refurbishment protocol begins with a comprehensive evaluation of the hardware's physical and electronic architecture. This process is designed to identify and rectify any degradation in the core silicon and supporting components, ensuring the platform can deliver line-rate performance as per its original design specifications.

- Silicon Integrity Validation: All Application-Specific Integrated Circuits (ASICs), processors, and memory modules undergo rigorous functional testing. This includes pattern testing to verify the integrity of packet forwarding engines and fabric interfaces, ensuring no latent defects exist.

- Printed Board Assembly (PBA) Refurbishment: The PBA is subject to a detailed assessment. For Ball Grid Array (BGA) and leadframe-based components, we

strictly follow industry-standard reballing and lead refinishing procedures, such as those prescribed by IPC-7711/21 and GEIA-STD-0006, to guarantee solder joint integrity and long-term reliability .

- Component-Level Restoration: All age-sensitive components, including electrolytic capacitors, are proactively replaced with new, fresh-stock parts to eliminate the risk of premature failure. This practice aligns with the stringent requirements for refurbished electronic circuit cards .

KEY FEATURES & ROUTING LOGIC

The XPONSHOP Test Protocol ensures that every refurbished unit's key features and routing capabilities are restored to their original, factory-shipped state. This is achieved through a combination of software validation, performance benchmarking, and feature-set verification.

- Feature Verification: All software licenses and feature sets (e.g., MPLS, BGP, OSPF, VXLAN) are validated against the original equipment manufacturer (OEM) specifications. The system is fully tested to confirm that all routing and switching logic is operational.

- Performance Benchmarking: The unit undergoes throughput and latency tests to certify that its forwarding engine and switching fabric can sustain the maximum line-rate performance. This ensures that 'Qualified-as-Good-as-New'

(QAGAN) hardware can be deployed in any network position without compromise .

- Protocol Stack Validation: The entire protocol stack is exercised in a controlled test environment to ensure interoperability and stability, guaranteeing seamless integration into existing carrier or enterprise networks.

COMPLIANCE & STANDARDS

XPONSHOP operates a facility and process in strict accordance with leading international standards for dependability, quality, and safety. Our goal is to ensure that every product we refurbish is fully compliant with regulatory requirements and can be placed on the market with the same certifications as a new product.

- IEC 62309: Dependability of new products containing reused parts: Our refurbishment process is fully aligned with the 'Qualified-as-Good-as-New' (QAGAN) framework. This involves checking the reliability and functionality of reused parts and their usage within the product, ensuring the final product's performance is comparable to a new one .

- IPC-J-STD-033 & IPC/JEDEC J-STD-020: We adhere to standardized procedures for handling, packaging, and storing moisture-sensitive components to prevent damage during the refurbishment process, including

necessary pre- and post-refurbishment baking and dry storage .

- CE Certification & ESPR (EU 2024/1781): All refurbished products are brought into full compliance with the Eco-design for Sustainable Products Regulation (ESPR). A new CE marking is affixed to the product, and all required documentation and certifications are provided to the customer, ensuring full legal compliance with European market regulations .

TECHNICAL SPECIFICATIONS

All hardware refurbished under the XPONSHOP Standard and Test Protocol must meet or exceed the following core performance and operational metrics.

Parameter	**Specification**
Form Factor	Determined by Original OEM Chassis (e.g., 1RU to Modular Chassis)
Switching Capacity	Verified to meet or exceed 100% of OEM-specified throughput
Packet Forwarding Rate	Confirmed to be line-rate for all port speeds (e.g., 1GbE, 10GbE, 40GbE, 100GbE)
Operating Temperature Range	Validated per OEM specification (e.g., 0°C to 40°C)

Power Supply	Dual Hot-Swappable Redundant AC/DC (New or fully refurbished to QAGAN status)
Mean Time Between Failures (MTBF)	Recalculated and verified post-refurbishment, meeting or exceeding original estimates
Compliance Markings	New CE Marking, plus all relevant safety and emissions certifications (e.g., UL, FCC) re-issued

ORDERING SKU INFORMATION

XPONSHOP offers a fully customizable refurbishment service. Customers can procure Carrier-Grade Hardware Refurbishment Standards and Test Protocol as a standalone service or as part of a comprehensive equipment procurement solution. Our service levels are designed to provide maximum flexibility and assurance.

- Standard Refurbishment (SKU-XPS-SR): Includes full functional testing, component replacement per protocol, 90-day hardware warranty, and QAGAN certification.

- Enterprise Refurbishment (SKU-XPS-ER): Includes all Standard Refurbishment elements, plus extended 100+ hour burn-in testing, advanced thermal cycling, full cosmetic reconditioning, and a comprehensive test report for every unit .

- Carrier-Grade Refurbishment (SKU-XPS-CR): The highest level of service, incorporating rigorous HTRB (High Temperature Reverse Bias) testing, PIND (Particle Impact Noise Detection) testing, and full qualification of all rework processes, providing the highest possible level of reliability for critical infrastructure .

