24 port PoE switch wholesale - Official Technical Overview & Hardware Datasheet

EXECUTIVE SUMMARY

The [Product Name] is a carrier-grade, fully managed Layer 2+ Power over Ethernet (PoE) switching platform specifically engineered for high-volume wholesale distribution, enterprise edge deployments, and surveillance infrastructure. Leveraging a non-blocking switch fabric and IEEE 802.3at/af PoE+ compliance across all 24 RJ-45 ports, the platform delivers a total power budget of up to 370W, facilitating high-density IP camera, VoIP phone, and wireless access point installations. This datasheet provides engineering validation for system integrators and procurement specialists.



HARDWARE ARCHITECTURE & SILICON

The switching engine is built upon a proprietary Broadcom/Realtek silicon offering a 52 Gbps switching fabric capacity. The unit features a fanless or smart fan-cooled 1RU metal chassis designed for 19-inch rack or desktop mounting. Internal power supply units (PSU) are optimized for 100-240V AC wide voltage ranging with surge protection of 6kV. All 24 Gigabit Ethernet copper ports support auto-MDI/MDIX, backpressure, and flow control. Additionally, 2 or 4 dedicated Gigabit SFP uplink slots provide fiber backbone integration.

KEY FEATURES & ROUTING LOGIC

- Port Configuration: 24x 10/100/1000Base-T PoE+ ports (370W total budget) + 2/4x 1000Base-X SFP uplink slots.
- PoE Management: Per-port PoE output enable/disable, power priority, delay start, and PD classification detection.
- Forwarding Logic: Store-and-forward architecture with 8K MAC address table and 4.1 Mbit packet buffer.
- VLAN Support: 802.1Q Tagged VLAN (up to 4K active VLANs), Port-based VLAN, and Q-in-Q double tagging.
- Reliability Features: 802.3ad Link Aggregation (static/LACP), port isolation, loopback detection, and BPDU guard.
- Management: WebGUI, SNMPv1/v2c/v3, Telnet, SSHv2, CLI console, and Dual Image firmware resilience.

COMPLIANCE & STANDARDS

Fully certifiable under FCC Part 15 Class A, CE Mark, RoHS, and WEEE directives. Safety compliance includes IEC 60950-1 (CB Scheme) and UL/cUL. Environmental standard operating range: 0°C to 50°C (32°F to 122°F) with 5% to 90% non-condensing humidity. The unit meets IEEE 802.3, 802.3u, 802.3ab, 802.3z, 802.3af, and 802.3at standards.

TECHNICAL SPECIFICATIONS

Parameter	Specification
Form Factor	1RU Standard 19-inch Rackmount / Desktop
Fixed Ports	24x 10/100/1000Base-T (PoE+), 2x or 4x 1000Base-X SFP
Switching Capacity	52 Gbps (non-blocking)
Forwarding Rate	38.69 Mpps (64-byte packets)
PoE Power Budget	370W total (up to 30W per port)
MAC Address Table	8K entries
Jumbo Frame	Up to 9.6 KB
Power Supply	Internal, 100-240V AC, 50/60Hz, max

	450W
MTBF (Mean Time Between Failures)	>150,000 hours at 25°C

ORDERING SKU INFORMATION

Suitable for wholesale logistics: SKU SW-24POE-W (Standard Firmware), SKU SW-24POE-W-PRO (Enhanced QoS & Static Routing). Each unit ships with rack-mount ears, power cord, console cable, and quick start guide. OEM branding and MAC address customization available for volume orders exceeding 500 units.

