Fanless Network Switch Wholesale - Official Technical Overview & Hardware Datasheet

FANLESS NETWORK SWITCH WHOLESALE - EXECUTIVE SUMMARY

This document provides a comprehensive technical overview and hardware datasheet for the next-generation Fanless Network Switch portfolio, available for wholesale integration. Engineered for silent, dust-sensitive, and thermally constrained environments, these platforms eliminate mechanical cooling while maintaining carrier-grade packet forwarding. Ideal for edge computing, SOHO aggregation, industrial IoT backbones, and greenfield campus deployments.



HARDWARE ARCHITECTURE & SILICON

The fanless architecture leverages a passive thermal dissipation chassis

constructed from extruded aluminum with integrated heat pipes. The switching silicon utilizes a 28nm FinFET ASIC achieving a sub-1.5W per port power envelope. No active cooling components ensure zero acoustic emission and 5x higher MTBF compared to forced-air equivalents. Convection-optimized vertical fin orientation allows operation from -20°C to +60°C ambient.

KEY FEATURES & ROUTING LOGIC

- Silent Operation (0 dBA): Perfect for open offices, recording studios, and residential gateways.
- Layer 2+ Static Routing: Supports IPv4/IPv6 static routes, RIPv1/v2, and basic VRF-lite.
- Enhanced Surge Protection: ± 6kV surge immunity on all RJ45 ports for outdoor cabinet deployment.
- Energy-Efficient Ethernet (EEE): 802.3az reduces idle power to <0.5W per active port.
- Wide Input Voltage: 12-48VDC terminal block or 100-240VAC external adapter.
- Jumbo Frame Support: Up to 12KB frame size for storage and video workflows.

COMPLIANCE & STANDARDS

CE, FCC Part 15 Class B, RoHS3, REACH, IEC 62368-1, EN55032 Class B, IEC 61000-6-2 (Industrial Immunity). The platform carries NEBS Level 3 thermal compliance for telco outdoor cabinets (GR-63-CORE).

TECHNICAL SPECIFICATIONS

Switching Fabric: Non-blocking, up to 56 Gbps internal bandwidth.

Forwarding Rate: 41.66 Mpps (for 48-port Gigabit model).

MAC Table: 16K entries.

Routing Table: 512 IPv4 static routes.

Packet Buffer: 4 MB shared.

Parameter	**Specification**
Form Factor	1RU Compact (440x200x44 mm) or DIN-rail mountable
Switching Capacity	56 Gbps (full-duplex, non-blocking)
Power Supply	External 12VDC / 2.5A (AC adapter optional) or dual terminal block 12-48VDC
Operating Temperature	-20 ° C to +60 ° C (fanless, natural convection)

Interfaces	24/48x Gigabit RJ45, 2/4x 1G/10G SFP+ uplinks
Power Consumption (Typical)	12W (48-port fully loaded)
MTBF	520,000 hours @ 40°C
Acoustic Noise	0 dBA (passive cooling only)

ORDERING SKU INFORMATION

Wholesale part numbers follow the convention: FNS-[PORT_COUNT][SPEED]-[POWER]. Example: FNS-24G-12D (24x Gigabit, 12-48VDC). Minimum order quantity (MOQ) for wholesale pricing is 50 units. Lead time: 15-20 days for non-stock configurations. OEM branding available on front bezel with 500-unit commitment.



Lifecycle Assurance: Calculated MTBF >500,000 hours (Telcordia SR-332, 40°C). Standard 5-year limited hardware warranty with advanced replacement for wholesale partners.