

Aggregation Switch Bulk Order - Official Technical Overview & Hardware Datasheet

PRODUCT OVERVIEW & MARKET POSITIONING

The purpose of this document is to provide a comprehensive technical reference for the Aggregation Switch Bulk Order platform, designed for high-density, multi-service aggregation at the network edge or distribution layer. This datasheet applies to bulk procurement units intended for carrier central offices, large enterprise campuses, and metro Ethernet deployments. The platform addresses the escalating need for non-blocking Layer 2/Layer 3 switching, advanced QoS, and seamless SDN integration within a compact, energy-efficient footprint.



ARCHITECTURE & CHASSIS DESIGN

The Aggregation Switch Bulk Order series is built on a fully distributed, hardware-based forwarding architecture employing a switch fabric capacity of up to 2.56 Tbps (non-blocking). The base unit (1RU / 2RU chassis) supports hot-swappable dual redundant power supply units (AC or DC) and modular fan trays with N+1 redundancy. Front-to-back or side-to-side airflow patterns are factory-selectable to align with standard data center thermal containment strategies. All critical components, including management modules and power entry modules, are field-replaceable without service disruption.

HARDWARE FEATURES & FORWARDING CAPACITY

- 48 x 1G/10G SFP+ ports and 6 x 40G/100G QSFP28 uplink ports on the base module.
- Optional line card expansion slot for additional 25G or 100G interfaces (depending on variant).
- Onboard dual-core x86 control plane processor with 16 GB DDR4 RAM and 64 GB eMMC storage.
- Hardware-assisted VXLAN routing and bridging (VTEP support) up to 16k tunnels.
- IEEE 802.1Qbb Priority Flow Control and 802.1Qaz Enhanced Transmission Selection (DCB capabilities).

- MAC address table: 288k entries; IPv4 forwarding table: 256k routes; IPv6 forwarding table: 128k routes.

COMPLIANCE & STANDARDS

Full compliance with RoHS, REACH, NEBS Level 3 (GR-63-CORE, GR-1089-CORE), CE, FCC Part 15 Class A, and IEC 60950-1 / IEC 62368-1 safety standards. The platform meets IEEE 802.3bj (40GBASE-SR4), 802.3cd (25GBASE-SR), 802.3bs (100GBASE-SR10), ITU-T G.8032 ERPS, and MEF 48 (Service OAM) requirements.

Parameter	Specification
Form Factor	1RU / 2RU modular chassis (19-inch rack-mountable)
Switching Capacity	2.56 Tbps (non-blocking, full duplex)
Power Supply	2x 550W hot-swappable AC/DC, 1+1 redundant
Operating Temperature	0°C to 50°C (long-term); -5°C to 55°C (short-term)
Max Power Consumption	320W (fully populated with all ports active)
Packet Forwarding Rate	1,900 Mpps (64-byte packets)

Jumbo Frame Support	12,000 bytes
Latency (10G to 10G)	< 1.5 microseconds (store-and-forward)
Mean Time Between Failures	450,000 hours (Telcordia SR-332)
Management Interfaces	RJ45 console, 10/100/1000 management port, USB 2.0
Cooling	N+1 redundant fan trays, front-to-back or side-to-side airflow

ORDERING OPTIONS & BULK CONFIGURATION SKUS

All bulk orders (minimum 10 units) must reference the appropriate SKU code and include power cord type, airflow direction, and transceiver bundle selections. Pre-assembled rack kits and spare power modules can be added as line items.

- AGG-524-48S6Q-1RU (Base chassis: 48x SFP+, 6x QSFP28, dual AC PSU)
- AGG-524-48S6Q-DC (DC power version, 48x SFP+, 6x QSFP28)
- AGG-EXP-4CQ (Expansion module: 4x 100G QSFP28)
- AGG-EXP-8S28 (Expansion module: 8x 25G SFP28)
- FAN-TRAY-AGG-F2B (Spare fan tray, front-to-back airflow)

- PSU-AGG-550W-AC (Spare 550W AC PSU, 1+1 redundant)
- PSU-AGG-550W-DC (Spare 550W DC PSU)
- RACK-KIT-AGG-1U (Rail kit for 19-inch EIA-310 rack)
- OPT-TRAN-10G-SFP (10G SFP+ SR optical transceiver, bulk pack 50 units)
- OPT-TRAN-40G-QSFP (40G QSFP+ SR4, bulk pack 10 units)



LIFECYCLE ASSURANCE & DEPLOYMENT TOPOLOGIES

Mean Time Between Failures (MTBF) exceeds 450,000 hours at 40°C ambient (Telcordia SR-332, Issue 4). The platform supports Zero Touch Provisioning (ZTP), NETCONF/YANG, gRPC telemetry streaming, and full CLI/SNMPv3 management. Typical deployment topologies include collapsed aggregation for enterprise Wi-Fi 6 backhaul, metro Ethernet NID aggregation, and small cell backhaul concentration. Bulk orders are shipped with factory pre-configuration

options (VLAN segmentation, spanning tree profiles, access control lists) upon request.