

AS5712-54X

10GbE Data Center Switch

Bare-Metal Hardware

First Switch Design Approved by Open Compute Project



Product Overview

The Edge-Core AS5712-54X switch meets the high-performance, availability, and network-scaling requirements of enterprise and cloud data centers. The AS5712-54X provides full line-rate switching at Layer 2 or Layer 3 across 48 x 10GbE ports and 6 x 40GbE uplinks. The switch can be deployed either as a Top-of-Rack switch, or as part of a 10GbE or 40GbE distributed spine, forming a non-blocking folded CLOS data center fabric. The switch is rack mountable in either a standard 19 inch rack, or with the Open Rack Switch Adapter in the 21 inch Open Rack.

The AS5712-54X hardware provides the high availability features required for data center operation, including; redundant, hot-swappable AC or -48VDC PSUs or 12VDC power input; fan tray with 4+1 redundant fans; and port-to-power or power-to-port airflow options. The AS5710-54X is an ideal Top-of-Rack switch for virtualized data centers, with its support of VXLAN and NVGRE tunneling functions in hardware.

Key Features and Benefits

- Cost-effective, bare-metal switch infrastructure for data center fabric.
- 48 x SFP+ switch ports, supporting 10GbE (DAC, 10GBASE-SR/LR) or 1GbE (1000BASE-T/SX/LX).
- 6 x 40 QSFP switch ports, each supporting 40GbE (DAC, 40GBASE-SR4/LR4) or 4 x 10GbE (DAC or fiber breakout cable).
- Port Grouping to group 4 x 10G ports into one 40G port at the physical layer for maximum bandwidth utilization, and for 300m optical reach over MMF.
- Full line-rate Layer 2 or Layer 3 forwarding of 1.44Tbps.
- VXLAN and NVGRE tunneling support in hardware for network virtualization.
- Rack mountable in standard 19" racks. Mountable in 21" Open Rack with the Open Rack Switch Adapter.
- Supports hot/cold aisle with port-to-power and power-to-port airflow SKUs.
- All ports on front; PSUs, fan tray on rear.
- Hot-swappable, load sharing, redundant AC or -48VDC PSUs. 12VDC power input option.
- Hot swappable 4+1 redundant fans.
- Management: Ethernet and console RJ-45 ports; USB storage port.
- Hardware switch pre-loaded with Open Network Install Environment (ONIE) for automated loading of compatible NOS software. Compatible with Open Network Linux, an open-source, OCP-approved reference NOS.
- Compatible with Cumulus® Linux® r2.5.1 and later SwitchOS software from Cumulus Networks™.
- Compatible with Switch Light OS from Big Switch Networks.
- CPU and memory subsystem provided on factory-pluggable internal module for flexibility
 - AS5712-54X SKUs with Intel™ Atom® C2538 x86 processor



Features

Ports

Switch Ports:
 48 x SFP+ each supporting 10GbE or 1GbE
 6 x QSFP each supporting 40GbE or 4 x 10GbE
 Management Ports on Front Panel:
 1 x RJ-45 serial console
 1 x RJ-45 100/1000BASE-T management
 1 x USB Type A storage port

Key Components

Switch Silicon: Broadcom BCM56854 Trident II 720Gbps CPU
 CPU Modules: Intel Atom C2538 quad-core 2.4GHz x86 processor
 8GB SO-DIMM DDR3 RAM with ECC
 16MB SPI
 8GB NAND

Performance

Wire Speed Forwarding: L2 and L3
 Switching Capacity: 1.44Tbps
 Forwarding Rate: 1Bpps
 MAC Addresses: 320K
 VLAN IDs: 4K
 Jumbo frames (9216Bytes)
 L3 Routes: IPv4 64K, IPv6 20K
 Packet Buffer Size: 12MB shared buffer pool
 Latency (RFC2544): 720 ns (L2/L3, cut thru, full line rate)

LEDs

10G SFP+ Port LEDs: Link Speed, Link Status, Activity
 40G QSFP Port LEDs: Link Status, Activity for 40G status
 40G QSFP Breakout LEDs: set of 24 LEDs, 4 per QSFP port, show Link, Status, Activity 10G links with 4x10G breakout
 Ethernet Management Port LED: Link Status, Activity
 Console Port LED: Link Status
 System LEDs: PSU1, PSU2, Diagnostic, Fans, Locator

Supported Optics and Cables

SFP+ Ports:
 10GBASE-CR DAC: up to 5m passive; up to 10m active
 10GBASE-SRL/SR: up to 100/300m over OM3 MMF
 10GBASE-LR: Up to 10km over SMF 10GBASE-1000BASE-SX, 1000BASE-LX, 100/1000BASE-T
 QSFP Ports:
 40GBASE-CR4 DAC; 0.5m to 7m; Passive and Active
 40GBASE-CR4 DAC to 4 x SFP+ 10GBASE-CR DAC; up to 5m passive; up to 10m active
 40GBASE-SR4: Up to 100m over OM3 MMF, 150m over OM4 MMF
 40GBASE-SR4 to 6 x 10GBASE-SR: 100m over OM3, 150m OM4
 40GBASE-LR4: Up to 10km over SMF

Software

Open Network Install Environment (ONIE) software installer
 Compatible with Open Network Linux, open source reference NOS
 Compatible with the Cumulus® Linux® r2.5.1 and later

Physical and Environmental

Dimensions (WxDxH): 443 x 473 x 43.4mm (17.4 x 18.6 x 1.71 in)
 Weight: 8.5kg (18.74lbs), with two installed PSU modules
 Fans: hot-swappable 4+1 redundant fans
 Operating Temperature: 0°C to 40°C (32°F to 104°F)
 Storage Temperature: -40°C to 70°C (-40°F to 158°F)
 Operating Humidity: 5% to 95% non-condensing

Power

PSUs: 2 redundant, load-sharing, hot-swappable AC or -48VDC
 Input Voltage: 90 to 264VAC at 50-60Hz. -48 to -72VDC.
 Input Current: Max 6A @100/120VAC, 3A @200/240VAC, 10A @-72VDC
 PSU Efficiency: Up to 93% for AC PSUs
 12VDC power input option

Regulatory

EMI
 CE Mark (EN55022 Class A)
 FCC Part 15 Class A
 VCCI
 Safety
 CB, EN 60950
 UL/CUL
 Environmental: Temperature: IEC 68-2-14
 Drop: ISTA 2A
 RoHS-6 Compliant
 Country of Origin: Taiwan (TAA Compliant)

Warranty

Please check www.edge-core.com for the warranty terms in your country. The warranty provides return-to-factory hardware replacement for a three year period in North America.

For More Information

To find out more about Edge-Core Networks products and solutions, visit www.edge-core.com.

About Edge-Core Networks

Edge-Core Networks is in the business of providing innovative network solutions. In the service provider network, in the data center or in the cloud, Edge-Core Networks delivers the software and systems that transform the way the world connects. Edge-Core Networks serves customers and partners worldwide. Additional information can be found at www.edge-core.com.

Edge-Core Networks is a subsidiary of Accton Technology Corporation, the leading network ODM company. The Edge-Core data center switches are developed and manufactured by Accton.

To purchase Edge-Core solutions, please contact your Edge-Core Network representatives at +886 3 563 8888 (HQ) or +1 (877) 828-CORE (877-828-2673) or authorized resellers.

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Ordering Information

Base Model: AS5712-54X 48-Port 10G SFP+ with 4x40G QSFP uplinks; ONIE software installer				
Model Number	CPU Module	PSU	Airflow	Region (power cord)
5712-54X-O-AC-F-US	Intel Atom C2538 processor	dual AC PSUs	port-to-power airflow	N. America
5712-54X-O-AC-B-US	Intel Atom C2538 processor	dual AC PSUs	power-to-port airflow	N. America
5712-54X-O-AC-F-EU	Intel Atom C2538 processor	dual AC PSUs	port-to-power airflow	Europe
5712-54X-O-AC-B-EU	Intel Atom C2538 processor	dual AC PSUs	power-to-port airflow	Europe
5712-54X-O-AC-F-UK	Intel Atom C2538 processor	dual AC PSUs	port-to-power airflow	UK
5712-54X-O-AC-B-UK	Intel Atom C2538 processor	dual AC PSUs	power-to-port airflow	UK
5712-54X-O-AC-F-JP	Intel Atom C2538 processor	dual AC PSUs	port-to-power airflow	Japan
5712-54X-O-AC-B-JP	Intel Atom C2538 processor	dual AC PSUs	power-to-port airflow	Japan
5712-54X-O-48V-F	Intel Atom C2538 processor	dual 48VDC PSUs	port-to-power airflow	
5712-54X-O-48V-B	Intel Atom C2538 processor	dual 48VDC PSUs	power-to-port airflow	
5712-54X-O-12V-F	Intel Atom C2538 processor	one 12VDC power input	port-to-power airflow	
5712-54X-O-12V-B	Intel Atom C2538 processor	one 12VDC power input	power-to-port airflow	

Model Number	PSU	Airflow	Region (power cord)
PSU-AC-400-F	400W AC Power Supply FRU	port-to-power airflow	no power cord
PSU-AC-400-B	400W AC Power Supply FRU	power-to-port airflow	no power cord
PSU-48V-400-F	400W -48V DC Power Supply FRU	port-to-power airflow	no power cord
PSU-48V-400-B	400W -48V DC Power Supply FRU	power-to-port airflow	no power cord
PSU-12V-400-1	12V DC power input unit FRU		
FAN-1U-1x1D-F	Fan Tray FRU	port-to-power airflow	
FAN-1U-1x1D-B	Fan Tray FRU	power-to-port airflow	
Model Number	Description		
CBL-PWR-US	AC Power Cable - US (125V/13A, 1830mm) – only required with spare power supplies		
CBL-PWR-EU	AC Power Cable - Europe (250V/10A, 1830mm) – only required with spare power supplies		
CBL-PWR-UK	AC Power Cable - UK (250V/10A, 1830mm) – only required with spare power supplies		
CBL-PWR-JP	AC Power Cable - Japan – only required with spare power supplies		
5712-54X-SVC-RTF	AS5712-54X Annual Hardware Service, post warranty, Return-to-Factory		
ORSA-1U	Open Rack Switch Adapter, for mounting standard 19 inch form factor 1U switches into 21 inch Open Rack		