# AS5710-54X, AS5712-54X

## 10GbE Data Center Switch
## Bare-Metal Hardware

First Switch Design Accepted by Open Compute Project



### Product Overview

The Edgecore AS5710-54X/AS5712-54X switch meets the high-performance, availability, and network-scaling requirements of enterprise and cloud data centers. The AS5710-54X/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 AS5710-54X/AS5712-54X hardware provides the high availability features required for data center operation, including; redundant, hot-swappable AC or -48 VDC PSUs or 12 VDC power input; fan with 4+1 redundant fan modules; and port-to-power or power-to-port airflow options. The AS5710-54X/AS5712-54X 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 300 m optical reach over MMF (Subject to NOS options).
- Full line-rate Layer 2 or Layer 3 forwarding of 720 Gbps.
- 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 modules on rear.
- Hot-swappable, load sharing, redundant AC or -48 VDC PSUs. 12 VDC power input option.
- Hot swappable 4+1 redundant fan modules.
- 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 open source and commerical NOS offerings.
  AS5710 SKU and AS5712 SKU compatible with Open Network Linux (ONL), the open-source, OCP reference NOS.
- AS5710 SKU and AS5712 SKU compatible with Big Monitoring Fabric™ and Big Cloud Fabric™ SDN applications from Big Switch.
- AS5712 SKU compatible with Cumulus® Linux® r2.5.1 and later version from Cumulus Networks®.
- AS5712 SKU compatible with PicOS™ r2.6 and later version from Pica8 Inc.
- AS5712 SKU compatible with SnapRoute FlexSwitch software.
- AS5712 SKU Compatible with Pluribus Netvisor® OS (ONVL) version 2.5 and later from Pluribus Networks.

Data Center Switch

# AS5710-54X/AS5712-54X Product Specifications

www.edge-core.com

## 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 Modules:

AS5710-54X: Freescale P2041 quad-core 1.5GHz CPU
- 2 GB DDR3 SDRAM with ECC
- 128 MB NOR Flash
- 8 GB NAND Flash
- 8GB SD Card

AS5712-54X: Intel Atom C2538 quad-core 2.4GHz x86 processor
- 8 GB SO-DIMM DDR3 RAM with ECC
- 16 MB SPI Flash
- 8 GB NAND Flash
- Reserve mSATA connector

### Performance

Wire Speed Forwarding: L2 and L3
Switching Capacity: 1.44 Tbps full duplex
Forwarding Rate: 1 Bpps
Jumbo frames support up to 9216 Bytes
Packet Buffer Size: 12 MB integrated packet buffer
Latency (RFC2544): 720 ns (L2/L3, cut-through mode, full line rate)
Subject to NOS:
- MAC Address: 32 K min./288 K max.
- VLAN IDs: 4 K
- IPv4: 16 K min./112 K max. host entries; 16 K LPM entries with TCAM-only mode
- IPv6: 8 K min./56 K max. host entries; IPv6/64=8K TCAM-only mode

### Supported Optics and Cables

SFP+ Ports:
- 10GBASE-CR DAC: up to 5 m passive; up to 10 m active
- 10GBASE-SRL/SR: up to 100/300 m over OM3 MMF
- 10GBASE-LR: Up to 10km over SMF 10GBASE-
- 1000BASE-SX, 1000BASE-LX, 100/1000BASE-T

QSFP Ports:
- 40GBASE-CR4 DAC; 0.5 m to 7 m; 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 100 m over OM3 MMF, 150 m over OM4 MMF
- 40GBASE-SR4 to 6 x 10GBASE-SR: 100 m over OM3, 150 m OM4
- 40GBASE-LR4: Up to 10km over SMF

### Physical and Environmental

Dimensions (WxDxH): 44.3 x 47.3 x 4.34 cm (17.4 x 18.6 x 1.71 in)
Weight: 8.5 kg (18.74 lb), 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

### 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

### Software

Switch is loaded with Open Network Install Environment (ONIE) software installer
Compatible with the following NOS options:

AS5712-54X:
- Cumulus® Linux® r2.5.1 and later version from Cumulus Networks®
- Open Network Linux, the open-source, OCP reference NOS
- PicOS™ r2.6 and later version from Pica8 Inc.
- Big Monitoring Fabric™ and Big Cloud Fabric™ SDN applications from Big Switch.
- Pluribus Networks – Netvisor® OS (ONVL)
- FlexSwitch software from SnapRoute

AS5710-54X:
- Open Network Linux, the open-source, OCP reference NOS
- Big Monitoring Fabric™ and Big Cloud Fabric™ SDN applications from Big Switch.

### Power

PSUs: 2 redundant, load-sharing, hot-swappable AC or -48 VDC
Input Voltage: 90 to 264 VAC at 50-60 Hz. -48 to -72 VDC.
Input Current: 6 A@100/120 VAC, 3 A@200/240 VAC, 10 A@-72 VDC
PSU Efficiency: Up to 93% for AC PSUs
Power input option: 12 VDC
Max Power: 282 W, without pluggable optics

### Regulatory

EMI
- CE Mark
- EN55022 Class A
- EN55024
- FCC Part 15 Class A
- EN61000-3-2
- EN61000-3-3
- VCCI

Safety
- CB
- UL/CUL

Environmental:
- Temperature: IEC 68-2-14
- RoHS-6 Compliant
- Vibration: IEC 68-2-36, IEC 68-2-6
- Shock: IEC 68-2-29

Country of Origin: Taiwan (TAA Compliant)

### Warranty

Please check www.edge-core.com for the warranty terms in your country.

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## Ordering Information

### Base Model: AS5710-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks; ONIE software installer

| Model Number | CPU Module | PSU | Airflow | Region (power cor |
|---|---|---|---|---|
| 5710-54X-O-AC-F-US | Freescale P2041 processor | dual AC PSUs | port-to-power airflow | N. America |
| 5710-54X-O-AC-B-US | Freescale P2041 processor | dual AC PSUs | power-to-port airflow | N. America |
| 5710-54X-O-AC-F-EU | Freescale P2041 processor | dual AC PSUs | port-to-power airflow | Europe |
| 5710-54X-O-AC-B-EU | Freescale P2041 processor | dual AC PSUs | power-to-port airflow | Europe |
| 5710-54X-O-AC-F-UK | Freescale P2041 processor | dual AC PSUs | port-to-power airflow | UK |
| 5710-54X-O-AC-B-UK | Freescale P2041 processor | dual AC PSUs | power-to-port airflow | UK |
| 5710-54X-O-AC-F-JP | Freescale P2041 processor | dual AC PSUs | port-to-power airflow | Japan |
| 5710-54X-O-AC-B-JP | Freescale P2041 processor | dual AC PSUs | power-to-port airflow | Japan |
| 5710-54X-O-48V-F | Freescale P2041 processor | dual 48 VDC PSUs | port-to-power airflow | |
| 5710-54X-O-48V-B | Freescale P2041 processor | dual 48 VDC PSUs | power-to-port airflow | |
| 5710-54X-O-12V-F | Freescale P2041 processor | one 12 VDC power input | port-to-power airflow | |
| 5710-54X-O-12V-B | Freescale P2041 processor | one 12 VDC power input | power-to-port airflow | |

### Base Model: AS5712-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks; ONIE software installer

| Model Number | CPU Module | PSU | Airflow | Region (power cor |
|---|---|---|---|---|
| 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 48 VDC PSUs | port-to-power airflow | |
| 5712-54X-O-48V-B | Intel Atom C2538 processor | dual 48 VDC PSUs | power-to-port airflow | |
| 5712-54X-O-12V-F | Intel Atom C2538 processor | one 12 VDC power input | port-to-power airflow | |
| 5712-54X-O-12V-B | Intel Atom C2538 processor | one 12 VDC power input | power-to-port airflow | |

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## Ordering Information

| 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 | 12 VDC power input unit FRU | | |
| AN-1U-1x1D-F | Fan Tray FRU | port-to-power airflow | |
| AN-1U-1x1D-B | Fan Tray FRU | power-to-port airflow | |

| Model Number | Description |
|---|---|
| 57xx-54X-SVC-RTF | AS5710-54X Annual Hardware Service, post warranty, Return-to-Factory |
| RKIT-85-6712 | Rack mount kit (for AS5710-54X / AS5712-54X / AS6712-32X) |
| ORSA-1U | Open Rack Switch Adapter, for mounting standard 19 inch form factor 1U switches into 21 inch Open Rack |
| CBL-PWR-US | AC Power Cable - US (125 V/13 A, 1830 mm) – only required with spare power supplies |
| CBL-PWR-EU | AC Power Cable - Europe (250 V/10 A, 1830 mm) – only required with spare power supplies |
| CBL-PWR-UK | AC Power Cable - UK (250 V/10 A, 1830 mm) – only required with spare power supplies |
| CBL-PWR-JP | AC Power Cable - Japan – only required with spare power supplies |

### For More Information

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

### About Edgecore Networks Corporation

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

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

To purchase Edgecore Networks solutions, please contact your Edgecore Networks Corporation representatives at +886 3 563 8888 (HQ) or +1 (949)-336-6801 or authorized resellers.

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