

# AS5710-54X

## 10GbE Data Center Switch

### Bare-Metal Hardware

Switch Design Contributed to Open Compute Project



#### Product Overview

The Edge-Core AS5710-54X switch meets the high-performance, availability, and network-scaling requirements of enterprise and cloud data centers. The AS5710-54X 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 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 independent SwitchOS software.
- Compatible with Cumulus® Linux® r2.2.1 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
  - AS5710-54X SKUs with Freescale P2041 processor
  - 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  
 AS5710-54X SKUs have CPU Module with  
 Freescale P2041 quad-core 1.5GHz CPU  
 Memory: 2GB DDR3 SDRAM with ECC  
 Flash: 128MB NOR, 2GB NAND, 8GB SD Card  
 AS5712-54X SKUs have CPU Module with:  
 Intel Atom C2538 quad-core 2.4GHz x86 processor  
 Memory: 8GB SODIMM DDR3 RAM with ECC  
 Flash: 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

Switch is loaded with Open Network Install Environment (ONIE)  
 software installer  
 Compatible with the following switchOS software:  
 AS5710-54X is compatible with Switch Light OS from Big  
 Switch Networks, and their Big Tap and Big Cloud  
 applications  
 AS5712-54X is compatible with Cumulus Linux r2.2.1 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

### Warranty

Please check [www.edge-core.com](http://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.au](http://www.edge-core.com.au).

### 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.au](http://www.edge-core.com.au).

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  
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## Ordering Information

5710-54X-O-AC-F-US	AS5710-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Freescale P2041 processor, ONIE software installer, dual AC PSUs, port-to-power airflow, N. America
5710-54X-O-AC-B-US	AS5710-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Freescale P2041 processor, ONIE software installer, dual AC PSUs, power-to-port airflow, N. America
5710-54X-O-AC-F-EU	AS5710-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Freescale P2041 processor, ONIE software installer, dual AC PSUs, port-to-power airflow, Europe
5710-54X-O-AC-B-EU	AS5710-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Freescale P2041 processor, ONIE software installer, dual AC PSUs, power-to-port airflow, Europe
5710-54X-O-AC-F-UK	AS5710-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Freescale P2041 processor, ONIE software installer, dual AC PSUs, port-to-power airflow, UK
5710-54X-O-AC-B-UK	AS5710-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Freescale P2041 processor, ONIE software installer, dual AC PSUs, power-to-port airflow, UK
5710-54X-O-AC-F-JP	AS5710-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Freescale P2041 processor, ONIE software installer, dual AC PSUs, port-to-power airflow, Japan
5710-54X-O-AC-B-JP	AS5710-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Freescale P2041 processor, ONIE software installer, dual AC PSUs, power-to-port airflow, Japan
5710-54X-O-48V-F	AS5710-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Freescale P2041 processor, ONIE software installer, dual 48VDC PSUs, port-to-power airflow
5710-54X-O-48V-B	AS5710-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Freescale P2041 processor, ONIE software installer, dual 48VDC PSUs, power-to-port airflow
5710-54X-O-12V-F	AS5710-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Freescale P2041 processor, ONIE software installer, one 12VDC power input, port-to-power airflow
5710-54X-O-12V-B	AS5710-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Freescale P2041 processor, ONIE software installer, one 12VDC power input, power-to-port airflow
5712-54X-O-AC-F-US	AS5712-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Intel Atom C2538 processor, ONIE software installer, dual AC PSUs, port-to-power airflow, N. America
5712-54X-O-AC-B-US	AS5712-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Intel Atom C2538 processor, ONIE software installer, dual AC PSUs, power-to-port airflow, N. America
5712-54X-O-AC-F-EU	AS5712-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Intel Atom C2538 processor, ONIE software installer, dual AC PSUs, port-to-power airflow, Europe
5712-54X-O-AC-B-EU	AS5712-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Intel Atom C2538 processor, ONIE software installer, dual AC PSUs, power-to-port airflow, Europe
5712-54X-O-AC-F-UK	AS5712-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Intel Atom C2538 processor, ONIE software installer, dual AC PSUs, port-to-power airflow, UK

## Ordering Information

5712-54X-O-AC-B-UK	AS5712-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Intel Atom C2538 processor, ONIE software installer, dual AC PSUs, power-to-port airflow, UK
5712-54X-O-AC-F-JP	AS5712-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Intel Atom C2538 processor, ONIE software installer, dual AC PSUs, port-to-power airflow, Japan
5712-54X-O-AC-B-JP	AS5712-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Intel Atom C2538 processor, ONIE software installer, dual AC PSUs, power-to-port airflow, Japan
5712-54X-O-48V-F	AS5712-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Intel Atom C2538 processor, ONIE software installer, dual 48VDC PSUs, port-to-power airflow
5712-54X-O-48V-B	AS5712-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Intel Atom C2538 processor, ONIE software installer, dual 48VDC PSUs, power-to-port airflow
5712-54X-O-12V-F	AS5712-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Intel Atom C2538 processor, ONIE software installer, one 12VDC power input, port-to-power airflow
5712-54X-O-12V-B	AS5712-54X 48-Port 10G SFP+ with 6x40G QSFP uplinks, CPU Module with Intel Atom C2538 processor, ONIE software installer, one 12VDC power input, power-to-port airflow
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, power-to-port airflow, no power cord
PSU-48V-400-B	400W -48V DC Power Supply FRU, port-to-power 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
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
5710-54X-SVC-RTF	AS5710-54X 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