SNX-60x0-486F Series Switch Datasheet

Product Overview

The SNX-60x0-486F Series Data Center, Top-of-Rack (ToR) switches, with a total combined bandwidth of 1,440 Gbps, feature 48 SFP+ ports of 10 Gbps Ethernet wire-speeds and 6 QSFP+ ports of 40 Gbps Ethernet wire-speeds. The Layer 3 capable, bare metal system also provides a console port and an Out-Of-Band (OOB) management port that administrators can use to access the software to configure and manage the switch. The micro-USB storage port provides extended accessibility to backup and load system related files.

Switches, in this series, support up to 2 redundant power supplies (either AC or DC) and up to 4 redundant fan modules that provides excellent system reliability all of which can either support front-to-back airflow or back-to-front airflow.

The SNX-60x0-486F Series features two switches in the series distinguished only by the CPU used. The **SNX-6070-486F** uses the Freescale CPU and the **SNX-60A0-486F** uses the Intel CPU.

Main Benefits

Switches in this series provide the following main benefits:

- 48 SFP+ ports of 10 Gbps Ethernet wire-speeds and 6 QSFP+ ports of 40 Gbps Ethernet wire-speeds.
- Modular CPU board with large flash and memory.
- Temperature warning system.
- Readable software thermal monitor.
- Real-time Clock (RTC) support.
- Two hot-swappable redundant power supply module ports, with one power supply module included.
- Four hot-swappable redundant fan module ports, with three fan modules included.
- One 10/100/1000 Mbps Out-Of-Band (OOB) management port.
- One RS-232 to RJ-45 serial console port. An RS-232 to R-J45 convertor cable is included in the package.
- One micro-USB storage port used as an external FLASH. A micro-USB to USB convertor cable is included in the package.

Hardware Components

Front Panel

The front panel of switches in this series features the following ports:

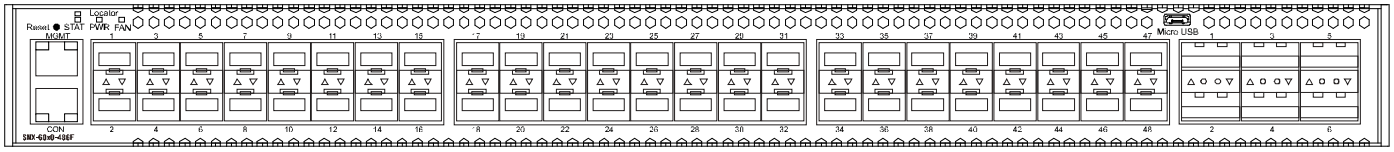

Figure 1 - SNX-60x0-486F Front Panel

Port (Form Factor)	Amount	Speed	Description
Reset Button	1	Not Applicable	A reset button is provided inside the pinhole on the front panel of the switch. Press and hold this button to 3 to 5 seconds to execute a factory reset of the switch.
Management Port (RJ-45)	1	10/100/1000 Mbps	An Out-Of Band management port used to configure the software features available on this switch.
Console Port (RJ-45)	1	115,200 bps (Bauds)	An Out-Of-Band console port used to configure software features available on this switch.
Storage Port (Micro-USB, Type-A)	1	480 Mbit/s	An external storage port used to backup and load system related files.
SPF+ Ports	48	10 Gbps	On the front panel there are 48 SFP+ ports of 10 Gbps wire-speed.
QSPF+ Ports	6	10/40 Gbps	On the front panel there are 6 QSFP+ ports of 10/40 Gbps wire-speed.

Back Panel

The back panel of switches in this series features the following ports:

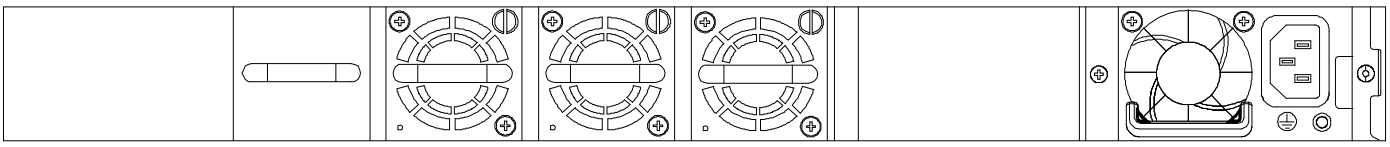

Figure 2 - SNX-60x0-486F Back Panel

Port (Form Factor)	Amount	Airflow	Description
Fan Modules	4	Front-to-Back OR Back-to-Front	There are 4 fan module slots on this switch. 3 fan modules are included. An additional fan module can be bought separately to improve airflow.
Power Supply Modules	2	Front-to-Back OR Back-to-Front	There are 2 power supply module slots on this switch. 1 power supply module is included (either AC or DC). An additional power supply module can be bought separately to improve redundancy.

Transceiver and Cabling Options

Switches in this series have 48 SPF+ ports and 6 QSFP+ ports. QSFP+ technology allows a smooth transition from 10 to 40 Gigabit Ethernet infrastructures in data centers. Each of the switch's QSFP+ ports can operate in either native 40 Gigabit Ethernet mode or 4 x 10 Gigabit Ethernet mode. This switch supports both fiber and copper cabling solutions for these two modes.

For low-cost cabling, copper-based 40-Gbps Twinax cables can be used, and for longer cable reaches, short-reach optical transceivers are excellent. Connectivity can be established from the QSFP+ ports to 10 Gigabit Ethernet switches or hosts using a splitter cable that has a QSFP+ transceiver on one end and four SFP+ transceivers on the other end. Similar capability can be achieved on the fiber solution by using QSFP+ SR4 transceivers on both ends and procuring third-party fiber splitter MPO-to-LC cables.

The following table lists the SFP+ and QSFP+ transceiver types supported.

Brand	Part Number	Transceiver	Speed	Cable	Distance
AVAGO	**AFBR-79EQDZ**	QSFP+	40 Gbps	Multi-mode Fiber (850 nm), SR4	Up to 150 meters
FINISAR	**FTLX8571D3BCL**	SPF+	10 Gbps	Multi-mode Fiber (850 nm)	Up to 300 meters
	FTLX1471D3BCL	SPF+	10 Gbps	Single-mode Fiber (1310 nm)	Up to 10 km
TYCO	**2127932-2**	SPF+	10 Gbps	Direct-Attached-Cable (Passive)	1 meter
	2127932-4	SPF+	10 Gbps	Direct-Attached-Cable (Passive)	3 meters
	2127932-6	SPF+	10 Gbps	Direct-Attached-Cable (Passive)	5 meters
	2053638-1	QSFP+	40 Gbps	Direct-Attached-Cable (Passive)	1 meter
	2053638-3	QSFP+	40 Gbps	Direct-Attached-Cable (Passive)	3 meters
	2053638-5	QSFP+	40 Gbps	Direct-Attached-Cable (Passive)	5 meters
	2053453-4	QSFP+	4 x 10 Gbps	1 QSFP+ to 4 SFP+ (Copper Cables)	3 meters
	2053453-6	QSFP+	4 x 10 Gbps	1 QSFP+ to 4 SFP+ (Copper Cables)	5 meters
FOXCONN	**2GSPS0A-02G-EF**	SFP+	10 Gbps	Direct-Attached-Cable (Passive)	1 meter
	2GSPS0B-02G-EF	SFP+	10 Gbps	Direct-Attached-Cable (Passive)	3 meters
	2GSPS8C-02G-EF	SFP+	10 Gbps	Direct-Attached-Cable (Passive)	5 meters
	2GSPGGA-18G-DF	QSFP+	40 Gbps	Direct-Attached-Cable (Passive)	1 meter
	2GSPGWX-19G-DF	QSFP+	40 Gbps	Direct-Attached-Cable (Passive)	3 meters

Product Specifications

The following tables list the product specifications for switches in this series.

Category	Product Code	Description
CPU	**SNX-6070-486F**	Freescale CPU
	SNX-60A0-486F	Intel CPU

Category	Specification	Description	
Physical	**Form Factor**	1 RU Fixed Form Factor	
	Physical Ports	48 SPF+ ports (10 Gbps each) and 6 QSPF+ ports (40 Gbps each)	
Performance	**Switching Capacity**	1,440 Gbps	
	Forwarding Rate	1,080 Mpps	
	Maximum Transmission Units	12 Kbytes (Jumbo Frames)	
	Forwarding Mode	Store-and-Forward, Cut-and-Through	
Scalability	**Buffer Size**	12 MB Shared	
	Number of MAC Addresses	32,000 (Min), 288,000 (Max)	
	Routing Table	**IPv4**	16,000 (Min), 112,000 (Max)
		IPv6	8,000 (Min), 56,000 (Max)
	Layer 2 Multicast	16,000	
	VLAN Entries	4,000	
	ACL Entries	4,000	

Category	Specification	Description	
	Boot Flash Size	8 MB	
Power	**Number of Power Supplies**	2 (1 Included, 1 Excluded)	
	Types of Power Supplies	AC (Forward or Reversed Airflow) DC (Forward or Reversed Airflow)	
	Operating Power	**SNX-6070-486F**	185 Watts (48 SFP+ ports with Twinax, 6 QSFP+ ports with Twinax at 100% load)
			224 Watts (48 SFP+ ports with SR, 6 QSFP+ ports with SR4 at 100% load)
		SNX-60A0-486F	200 Watts (48 SFP+ ports with Twinax, 6 QSFP+ port with Twinax at 100% load)
			229 Watts (48 SFP+ ports with SR, 6 QSFP+ ports with SR4 at 100% load)
	Maximum Power	456 Watts (from 460 Watt PSU)	
	AC Power Supply	**Input Voltage**	100 VAC to 240 VAC (460 Watt)
		Frequency	50 Hz to 60 Hz
		Efficiency	89% to 91% at 220V
	DC Power Supply	**Input Voltage**	-40.5 VDC to -60 VDC
		Efficiency	85% to 88%
	Typical Heat Dissipation	**SNX-6070-486F**	634 BTU/hr (48 SFP+ ports with Twinax, 6 QSFP+ with Twinax at 100% load)
			764 BTU/hr (48 SFP+ ports with SR, 6 QSFP+ with QSFP+ ports with SR4 at 100% load)
		SNX-60A0-486F	685 BTU/hr (48 SFP+ ports with Twinax, 6 QSFP+ with Twinax at 100% load)
			783 BTU/hr (48 SFP+ ports with SR, 6 QSFP+ with QSFP+ ports with SR4 at 100% load)
	Maximum Heat Dissipation	1,228 BTU/hr	
Cooling	**Number of Fan Modules**	4 (3 Included, 1 Excluded)	
	Types of Fan Modules	Forward or Reversed Airflow	
	Hot Swappable	Yes	
	Fan Speeds	Programmable High and Low Speed	
Noise Factor	**Low Fan Speed**	59.30 dBA	
	High Fan Speed	75.50 dBA	
Environment	**Dimensions**	44mm (H) x 440mm (W) x 487.4mm (D)	
	Weight	9.07 kg (with 2 AC PSUs and 4 Fans installed)	
	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 Relative Humidity	0% to 95% (Non-condensing)	
	Storage Relative Humidity	0% to 95% (Non-condensing)	
	Altitude	0 to 3,000 meters (0 to 9,850 feet)	

Regulatory Standards Compliance

The following table lists the regulatory standards compliance for switches in this series.

Specification	Description
Regulatory Compliance	Comply with CE Markings per directives 2004/108/EC and 2006/95/EC FCC/IC Report Class A BSMI UL/cUL Listed Mark CCC CB
Safety	IEC 60950-1 EN 60950-1 UL/CSA-C22.2 NO. 60950-1-07 CNS 14336-1 GB4943.1
EMC	EN 55022/EN 55024, Class A FCC CFR47, Part 15B, Class A ICES-003, Class A

Specification	Description	
	CNS 13438, Class A GB9254 YDT993	

Ordering Information

The following table provides ordering information for switches in this series.

Category	Part Number	Description	Parts Included
Chassis	**SNX-6070-486F-AF-B**	**CPU:** Freescale CPU. **PSU:** 1 x AC Power Supply (Front-to-Back Airflow) 460 Watt. **Fan:** 3 x Fan Modules (Front-to-Back Airflow).	1 x AC-0460W-12-FB 3 x FAN-17000-FB
	SNX-6070-486F-AB-B	**CPU:** Freescale CPU. **PSU:** 1 x AC Power Supply (Back-to-Front Airflow) 460 Watt. **Fan:** 3 x Fan Modules (Back-to-Front Airflow).	1 x AC-0460W-12-BF 3 x FAN-17000-BF
	SNX-6070-486F-DF-B	**CPU:** Freescale CPU. **PSU:** 1 x DC Power Supply (Front-to-Back Airflow) 800 Watt. **Fan:** 3 x Fan Modules (Front-to-Back Airflow).	1 x DC-0800W-12-FB 3 x FAN-17000-FB
	SNX-6070-486F-DB-B	**CPU:** Freescale CPU. **PSU:** 1 x DC Power Supply (Back-to-Front Airflow) 800 Watt. **Fan:** 3 x Fan Modules (Back-to-Front Airflow).	1 x DC-0800W-12-BF 3 x FAN-17000-BF
	SNX-60A0-486F-AF-B	**CPU:** Intel CPU. **PSU:** 1 x AC Power Supply (Front-to-Back Airflow) 460 Watt. **Fan:** 3 x Fan Modules (Front-to-Back Airflow).	1 x AC-0460W-12-FB 3 x FAN-17000-FB
	SNX-60A0-486F-AB-B	**CPU:** Intel CPU. **PSU:** 1 x AC Power Supply (Back-to-Front Airflow) 460 Watt. **Fan:** 3 x Fan Modules (Back-to-Front Airflow).	1 x AC-0460W-12-BF 3 x FAN-17000-BF
	SNX-60A0-486F-DF-B	**CPU:** Intel CPU. **PSU:** 1 x DC Power Supply (Front-to-Back Airflow) 800 Watt. **Fan:** 3 x Fan Modules (Front-to-Back Airflow).	1 x DC-0800W-12-FB 3 x FAN-17000-FB
	SNX-60A0-486F-DB-B	**CPU:** Intel CPU. **PSU:** 1 x DC Power Supply (Back-to-Front Airflow) 800 Watt. **Fan:** 3 x Fan Modules (Back-to-Front Airflow).	1 x DC-0800W-12-BF 3 x FAN-17000-BF
Power Supply	**AC-0460W-12-FB**	AC Power Supply (Front-to-Back Airflow), 100 VAC to 240 VAC, 460 Watt.	
	AC-0460W-12-BF	AC Power Supply (Back-to-Front Airflow), 100 VAC to 240 VAC, 460 Watt.	
	DC-0800W-12-FB	DC Power Supply (Front-to-Back Airflow), -40.5 VDC to -60 VDC, 800 Watt.	
	DC-0800W-12-FB	DC Power Supply (Back-to-Front Airflow), -40.5 VDC to -60 VDC, 800 Watt.	
Fan Module	**FAN-17000-FB**	Fan Module (Front-to-Back Airflow).	
	FAN-17000-BF	Fan Module (Back-to-Front Airflow).	

Warranty

Switches in this series support a 2 year warranty.

Upgrade the ONIE

The latest ONIE file(s) can be downloaded from ftp://onie_4_client:p03LL8jW@ftp.alphanetworks.com.

For More Information

For more information, please visit http://www.alphanetworks.com.