

8100S Series Copper Switches

LAYER 2-4 FAST ETHERNET STACKABLE/STANDALONE SWITCHES

Allied Telesis 8100S Series copper switches offer high performance managed edge switching. This stackable / standalone Ethernet switch series supports the advanced security features and offers the appropriate management for user connectivity at the edge of network.



The 8100S Series consists of PoE and non-PoE models in the configurations of 24 10/100TX ports and 48 10/100TX ports. This switch series provides two Gigabit combo (10/100/1000T / SFP) uplink ports. Dedicated stacking connectors on selected models deliver a total of 10Gbps stack bandwidth. All PoE ports support the IEEE 802.3at (PoE+) 30W standard.

Redundant Power Options

All variants of the 8100S copper switch family, except the AT-8100S/24C switch, feature two internal power supplies as standard, allowing the switches to be powered from two separate building feeds making the 8100S Series less susceptible to building power failures and ensuring continuous switch operation. All models are designed for front-to-back cooling.

Stacking

The physical stacking capability integrated into 24-port switches is designed to offer simplified management for higher port density applications. Up to three stackable switches of the 8100S copper and fiber series can be mixed and stacked together to a maximum of 78 ports.

Ease of Management

Designed for rapid deployment with the minimum of configuration time, the 8100S Series offers features such as Voice VLAN, LLDP-MED, Enhanced Stacking and Web management GUI that facilitates simple and effective approach to network management. Voice VLAN segregates VoIP traffic from regular Ethernet traffic and applies to it a higher QoS. It takes the complexity out of VoIP deployments, ensures high voice quality and protects time sensitive voice traffic from being flooded by other data. LLDP-MED lets the user auto-configure end stations to send preconditioned traffic that adheres to Voice VLAN configured network policies.

Enhanced Stacking with the 8100S Series enables the user to make software upgrades for multiple switches with a single command, plus update all configurations in a single management session.

The industry standard CLI of AlliedWare Plus™ combined with the simple and intuitive Web management GUI reduces the training needs for those who require granularity of control, by providing a familiar interface for advanced users.

Key Benefits

Reliability

» Built-in dual power supplies offers a cost-effective and highly reliable edge platform solution for your network.

Security

» The 8100S Series offers enhanced access, ideal for deployment at the network edge by offering security features such as Multi Supplicant Authentication, RADIUS, TACACS+ ensuring a secure network.

Manageability

» Voice VLAN and LLDP-MED features ensure voice data priority for networks that handle high traffic and require segregating and prioritizing. The industry standard CLI and Web GUI offered by the 8100S Series adds to the ease of managing a network for new users and experienced professionals.

Monitoring

» sFlow and RMON together give a better visibility on the performance and use of the network, which helps management to take appropriate decisions crucial for an organization to function and manage efficiently.

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Simplifying the Network

AutoQoS with the 8100S Series enables a switch administrator to enter one command to enable all the appropriate features for the recommended QoS settings on edge and uplink port so this minimizes the complexity and speeding up the QoS deployment over the network.

Environmentally Friendly

In keeping with our commitment to environmentally friendly processes and products, the 8100 Series is designed to be green from the ground up, with reduced power consumption and minimal hazardous waste.

The use of highly recyclable metal, combination of green production processes, earth friendly packaging, high efficiency power supplies and effective power management deliver both cost savings and a reduced carbon footprint for the user.

Access Control Lists

Access Control Lists work as filters that can enable inspection and classification of incoming frames. Specific actions can then be performed on these defined frames to more effectively manage the network traffic at Layer 2 through Layer 4. ACLs are typically used as security mechanism, either permitting or denying entry for packets on specific switch ports.

Layer 3 Routing

The switch provides static IPv4 routing at the edge of the network as well as support for RIPv1 and RIPv2.

Effective Traffic Monitoring

In order to fully understand the performance of the network and ensure the ongoing smooth delivery of critical data, users must be able to measure and analyze the traffic in real time.

The 8100S Series facilitates effective traffic monitoring with sFlow, an industry-standard technology for monitoring high-speed switched networks gives complete visibility into the use of the network enabling performance optimization, accounting, billing for usage, and even defense against security threats.

Securing the Network Edge

The 8100S Series guarantees protection and secure management of administrator's network by providing strong security standards and authentication mechanism for access at the edge of a network.

IEEE 802.1x port authentication methods such as PEAP, EAP-TLS and EAP-TTLS supported by the 8100S Series allows network controller to restrict external devices from gaining unauthenticated access in to the network.

The Multiple Supplicant Authentication enables the switch to uniquely authenticate and apply the appropriate policies and VLAN for multiple users or devices on a shared port, allowing port expansion while keeping the network secure.

Power over Ethernet

The 8100S Series comes in configurations of 24- and 48-port PoE. Both support PoE+ (IEEE 802.3at), which delivers up to 30W per port.

Power over Ethernet allows user to network and power a device using single Ethernet cable, thus eliminating the need for additional power outlets and simplifying the network installation. It is also unaffected by local variance in AC power, offering a standardized power infrastructure.

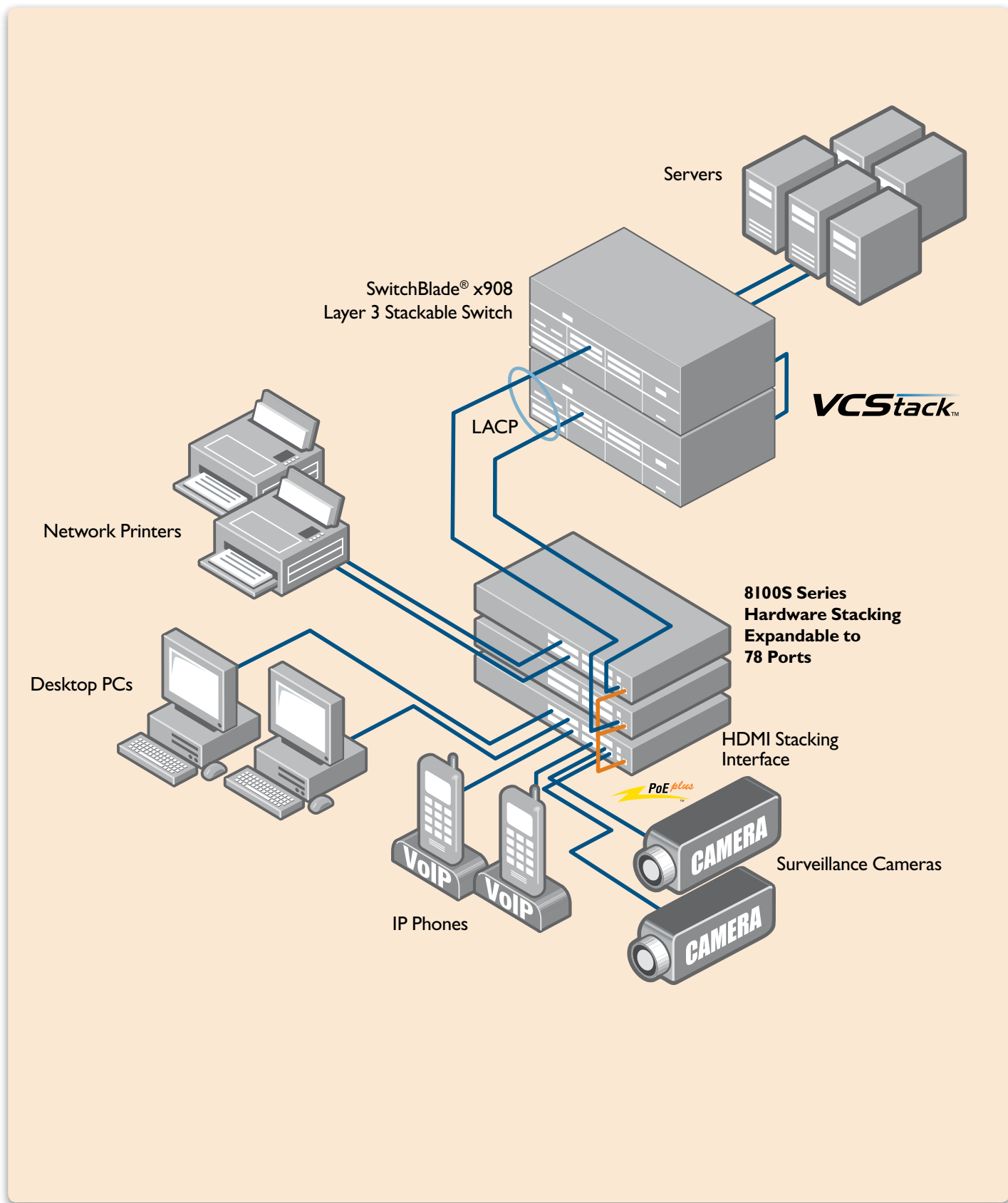
PoE+ with up to double the power provides superior power-management capability, as automatic power allocation can be made based on the exact requirement of the power device at a given time.

Gigabit and Fast Ethernet SFP Support

The 8100S Series supports both Gigabit and Fast Ethernet Small Form-Factor Pluggable (SFP) uplinks. The dual-speed ports make this series ideal for environments where Gigabit fiber switches will be phased in over time.

The 8100S Series allows for connectivity to the legacy 100FX hardware until the uplink device is upgraded to Gigabit.

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Specifications

System Capacity

- » 128MB RAM
- » 16MB flash memory
- » 16K MAC addresses
- » 266MHz CPU

Maximum Bandwidth

- » Non-blocking for all packet sizes

Wirespeed Switching (Layer 2/3) on all Ethernet Ports

- » 14,880pps for 10Mbps Ethernet
- » 148,800pps for 100Mbps Ethernet
- » 1,488,000pps for 1000Mbps Ethernet

Environmental Specifications

- » Operating temperature: 0°C to 40°C
- » Storage temperature: -25°C to 70°C
- » Operating humidity: 5% to 90% non-condensing
- » Storage humidity: 5% to 95% non-condensing
- » Max operating altitude: 3,048 m (10,000 ft)

Port Configuration

- » Auto-negotiation, duplex, MDI/MDI-X, IEEE 802.3x flow control/back pressure
- » Head of Line (HoL) blocking prevention
- » Broadcast storm control
- » Link flap protection
- » Group link control
- » Port mirroring

Ethernet Specifications

- » RFC 894 Ethernet II encapsulation
- » IEEE 802.1D MAC bridges
- » IEEE 802.1Q Virtual LANs
- » IEEE 802.2 Logical link control
- » IEEE 802.3ac VLAN TAG
- » IEEE 802.1ax-2008 (LACP) link aggregation
- » IEEE 802.3u 100TX
- » IEEE 802.3x Full-duplex operation
- » IEEE 802.3z Gigabit Ethernet
- » IEEE 802.3af Power over Ethernet class 3
- » IEEE 802.3at Power over Ethernet class 4
- » Jumbo frames (9198 bytes)

Quality of Service (QoS)

- » Eight egress queues per port
- » Egress rate limiting
- » Voice VLAN
- » Automatic QoS
- » IEEE 802.1p Class of Service with strict and weighted round robin scheduling
- » RFC 2474 DSCP for IP-based QoS
- » RFC 2475 Differentiated services architecture
- » Layer 2, 3 and 4 criteria

Link Aggregation

- » IEEE 802.3ad LACP - eight groups
- » Static link aggregation - 24 groups

Link Discovery

- » IEEE 802.1ab Link Layer Discovery Protocol (LLDP)
- » Link Layer Discovery Protocol-Media Endpoint (LLDP-MED)

Spanning-Tree Protocol

- » IEEE 802.1D Spanning-Tree Protocol
- » IEEE 802.1D-2004 Rapid Spanning-Tree Protocol
- » IEEE 802.1q-2005 Multiple Spanning-Tree Protocol (15 instances)
- » BPDU guard
- » Loop guard
- » Root guard

VLAN

- » 4096 VLANs (IEEE 802.1Q)
- » Port-based VLANs
- » MAC-based VLANs – 256
- » IP subnet-based VLANs – 256
- » Port-based Private VLANs
- » GARP VLAN Registration Protocol (GVRP)

MIB Support

- » RFC 1213 MIB-II
- » RFC 1215 TRAP MIB
- » RFC 1493 Bridge MIB
- » RFC 2863 Interfaces group MIB
- » RFC 1643 Ethernet-like MIB
- » RFC 2618 RMON MIB
- » RFC 2674 IEEE 802.1Q MIB
- » RFC 2096 IP forwarding table MIB
- » Allied Telesis managed switch MIB

Management

- » RFC 854 Telnet server
- » Console management port
- » AlliedWare Plus CLI
- » Web GUI
- » Enhanced Stacking
- » RFC 1866 HTML
- » RFC 2068 HTTP
- » RFC 2616 HTTPS
- » RFC 1350 TFTP
- » zModem
- » RFC 1305 SNMP
- » RFC 1155 MIB
- » RFC 1157 SNMPv1
- » RFC 1901 SNMPv2c
- » RFC 3411 SNMPv3
- » RFC 1757 RMON 4 groups: Stats, History, Alarms and Events
- » RFC 3164 Syslog protocol (client)
- » Event log
- » RFC 3176 sFlow
- » Auto config

General Protocols

- » RFC 768 UDP
- » RFC 791 IP
- » RFC 792 ICMP
- » RFC 793 TCP
- » RFC 826 ARP
- » RFC 950 Subnetting, ICMP
- » RFC 1027 Proxy ARP
- » RFC 1035 DNS
- » RFC 1122 Internet host requirements
- » DHCP client
- » DHCP snooping
- » DHCP option 82
- » RFC 3046 DHCP relay
- » RFC 951 BootP

IP Multicast

- » RFC 1112 IGMPv1 snooping
- » RFC 2236 IGMPv2 snooping
- » IGMPv2 snooping querier
- » Multicast groups – 255

IPv6

- » IPv6 host
- » IPv6 ACL
- » ICMPv6
- » Dual-stack IPv4/IPv6 management
- » IPv6 applications: WEB/SSL, Telnet server/SSH

Security / IEEE 802.1x

- » TACACS+
- » RFC 2865 RADIUS client
- » RFC 2866 RADIUS accounting
- » IEEE 802.1x port-based Network Access Control (NAC)
- » Supplicant
- » Authenticator
- » IEEE 802.1x multiple supplicant mode
- » Piggy-back mode
- » Per port MAC address limiting
- » Per port MAC address filtering
- » MAC address security/lockdown
- » RFC 1321 MD-5
- » EAP, EAP-TLS, LEAP, PEAP, TTLS
- » Dynamic VLANs
- » Guest VLANs
- » Secure VLANs
- » Layer 2/3/4/ Access Control Lists (ACLs)
- » SSLv3 for Web management
- » SSL
- » SSH
- » SSH session time out
- » Microsoft NAP compliant
- » Symantec NAC support

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IP Routing

- » Static IPv4 routing – 4K
- » RIPv1, v2
- » Proxy ARP

Stacking Features

- » 10Gbps stacking bandwidth via dedicated HDMI stacking ports
- » Hardware stack up to three units (78 ports) using HDMI stacking ports or stack up to 24 units using Enhanced Stacking
- » Single system appearance
- » Single IP management
- » Backup master
- » Link aggregation / trunking across hardware stack
- » Port mirroring across stack
- » VLAN across stack
- » Maximum HDMI stacking cable length 1m

Compliance Standards

- » IEEE 802.3 – 10T
- » IEEE 802.3u – 100TX with auto-negotiation
- » IEEE 802.3ab – 1000T Gigabit Ethernet
- » 100FX SFP support
- » 1000X SFP support

Safety and Electromagnetic Emissions Certifications

- » EMI: FCC class A, CISPR class A, EN55022 class A, C-TICK, VCCI Class A, CE, EN601000-3-2, EN601000-3-3
- » Immunity: EN55024
- » Safety: UL 60950-1 (cULus), EN60950-1 (TUV), EN60825

RoHS Standards

- » Compliant with European and China RoHS standards

Package Description

- » AT-8100S/xx switch
- » AC power cord(s)
- » Management cable (RJ-45 to DB-9)
- » Rubber feet for desktop installation and 19" rack-mountable hardware kit accessories
- » Install guide and CLI users guide available at alliedtelesis.com
- » HDMI stacking cable (1 meter)

PRODUCT	SWITCHING CAPACITY	FORWARDING RATE	LATENCY	
			10Mb	100MB
AT-8100S/24C	18.8Gbps	27.9Mpps	82µs	12µs
AT-8100S/24	18.8Gbps	27.9Mpps	82µs	11µs
AT-8100S/24POE	18.8Gbps	27.9Mpps	81µs	12µs
AT-8100S/48	23.6Gbps	35.1Mpps	81µs	12µs
AT-8100S/48POE	23.6Gbps	35.1Mpps	81µs	12µs

Physical Specifications and MTBF Figures

PRODUCT	WIDTH	DEPTH	HEIGHT	WEIGHT	MTBF (HOURS)
AT-8100S/24C	33.0 cm (13.0 in)	20.3 cm (8.1 in)	4.4 cm (1.7 in)	2.20 kg (4.80 lb)	510,000
AT-8100S/24	44.1 cm (17.3 in)	29.1 cm (11.5 in)	4.4 cm (1.7 in)	3.60 kg (8.0 lb)	430,000
AT-8100S/24POE	44.1 cm (17.3 in)	32.2 cm (12.7 in)	4.4 cm (1.7 in)	5.00 kg (11.00 lb)	70,000
AT-8100S/48	44.1 cm (17.3 in)	29.1 cm (11.5 in)	4.4 cm (1.7 in)	4.00 kg (8.9 lb)	300,000
AT-8100S/48POE	44.1 cm (17.3 in)	32.2 cm (12.7 in)	4.4 cm (1.7 in)	5.60 kg (12.30 lb)	61,000

Power and Noise Characteristics

PRODUCT	MAX POWER CONSUMPTION	MAX HEAT DISSIPATION	NOISE	VOLTAGE	FREQUENCY
AT-8100S/24C	18.3W†	62 BTU/hr	Fanless	100-240V AC (10% auto-ranging)	47-63Hz
AT-8100S/24	19.5W	66 BTU/hr	Fanless	100-240V AC (10% auto-ranging)	47-63Hz
AT-8100S/24POE	459W*	303 BTU/hr	57.0 dB	100-240V AC (10% auto-ranging)	47-63Hz
AT-8100S/48	23.2W	77 BTU/hr	Fanless	100-240V AC (10% auto-ranging)	47-63Hz
AT-8100S/48POE	459W*	314 BTU/hr	58.9 dB	100-240V AC (10% auto-ranging)	47-63Hz

† Standard product with single AC power supply

* Standard product with dual AC power supply with maximum PoE+ load

Power over Ethernet Specifications

POWER SUPPLY UNIT	POE POWER AVAILABLE	MAXIMUM POE PORTS SUPPORTED		
		IEEE 802.3af CLASS 2	IEEE 802.3af CLASS 3	IEEE 802.3at CLASS 4
AT-8100S/24POE	370W (using two PSU)	24	24	12
AT-8100S/48POE	370W (using two PSU)	48	24	12

IEEE 803.at PoE+ LLDP-MED classification requires PD to be fully compliant with IEEE 802.3at standard Mode B PoE carries PoE power to powered devices on spare pairs 4/5 and 7/8 of Ethernet interface

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Ordering Information

8100S Series Copper Switches



AT-8100S/24C-xx

24 10/100TX ports
 2 combo ports (10/100/1000T-100/1000 SFP)
 2 HDMI stacking ports
 Standard one AC power supply in a compact form factor

AT-8100S/24-xx

24 10/100TX ports
 2 combo ports (10/100/1000T-100/1000 SFP)
 2 HDMI stacking ports
 Standard two AC power supplies or optional DC power supplies*

AT-8100S/24POE-xx

24 10/100TX PoE+ ports
 2 combo ports (10/100/1000T-100/1000 SFP)
 2 HDMI stacking ports
 Standard two AC power supplies

AT-8100S/48-xx

48 10/100TX ports
 2 combo ports (10/100/1000T-100/1000 SFP)
 2 HDMI ports for future use
 Standard two AC power supplies

AT-8100S/48POE-xx

48 10/100TX PoE+ ports
 2 combo ports (10/100/1000T-100/1000 SFP)
 2 HDMI ports for future use
 Standard two AC power supplies

Where xx =

- 10 for US power cord
- 20 for no power cord
- 30 for UK power cord
- 40 for Australian power cord
- 50 for European power cord
- 80 for DC power supply*
- (AT-8100S/24)

* DC power supply is available in the future.

Small Form Pluggable Optics Modules

AT-SPSX

SFP, MMF, 1000Mbps, 220 / 500 m, 850 nm, LC

AT-SPSX/I

SFP, MMF, 1000Mbps, 220 / 550m, 850 nm, LC
 Extended temperature: -40°C to 85°C

AT-SPEX

SFP, MMF, 1000Mbps, 2 km, 1310 nm, LC

AT-SPLX10

SFP, SMF, 1000Mbps, 10 km, 1310 nm, LC

AT-SPLX10/I

SFP, SMF, 1000Mbps, 10 km, 1310 nm, LC
 Extended temperature: -40°C to 85°C

AT-SPLX40

SFP, SMF, 1000Mbps, 40 km, 1310 nm, LC

AT-SPZX80

SFP, SMF, 1000Mbps, 80 km, 1550 nm, LC

AT-SPBD10-I3

SFP, SMF, 1000Mbps, 10 km, 1310/1490 nm, LC-BiDi

AT-SPBD10-I4

SFP, SMF, 1000Mbps, 10 km, 1490/1310 nm, LC-BiDi

AT-SPFX/2

SFP, MMF, 100Mbps, 2 km, 1310 nm, LC

AT-SPFXBD-LC-I3

SFP, SMF, 100Mbps, 10 km, 1310/1510 nm, LC-BiDi

AT-SPFXBD-LC-I5

SFP, SMF, 100Mbps, 10 km, 1510/1310 nm, LC-BiDi

AT-SPFX/I5

SFP, SMF, 100Mbps, 15 km, 1310 nm, LC

*For the non-stackable models refer to 8100L Series datasheet and for fiber models refer to the 8100S Series fiber switches product datasheet.

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the solution : the network

North America Headquarters | 19800 North Creek Parkway | Suite 100 | Bothell | WA 98011 | USA | T: +1 800 424 4284 | F: +1 425 481 3895

Asia-Pacific Headquarters | 11 Tai Seng Link | Singapore | 534182 | T: +65 6383 3832 | F: +65 6383 3830

EMEA & CSA Operations | Incheonweg 7 | I437 EK Rozenburg | The Netherlands | T: +31 20 7950020 | F: +31 20 7950021

alliedtelesis.com