

Datasheet

ALAXALA compact gigabit layer2 switch

AX2600S Series

1. Outline

ALAXALA Gigabit Layer 2 Switch Series, AX2600S, is available in four models.



Figure 1 AX2630S-24T4XW



Figure 2 AX2630S-48T4XW



Figure 3 AX2630S-24P4XW



Figure 4 AX2630S-48P4XW

The AX2630S Series supports **Zero Trust Security features** such as user authentication and micro-segmentation, **authenticity verification features** that can detect device tampering in supply chain, and **highly reliability features** such as stacking, 10G and power redundancy. These features realize high security and reliability for uninterrupted mission-critical networking.

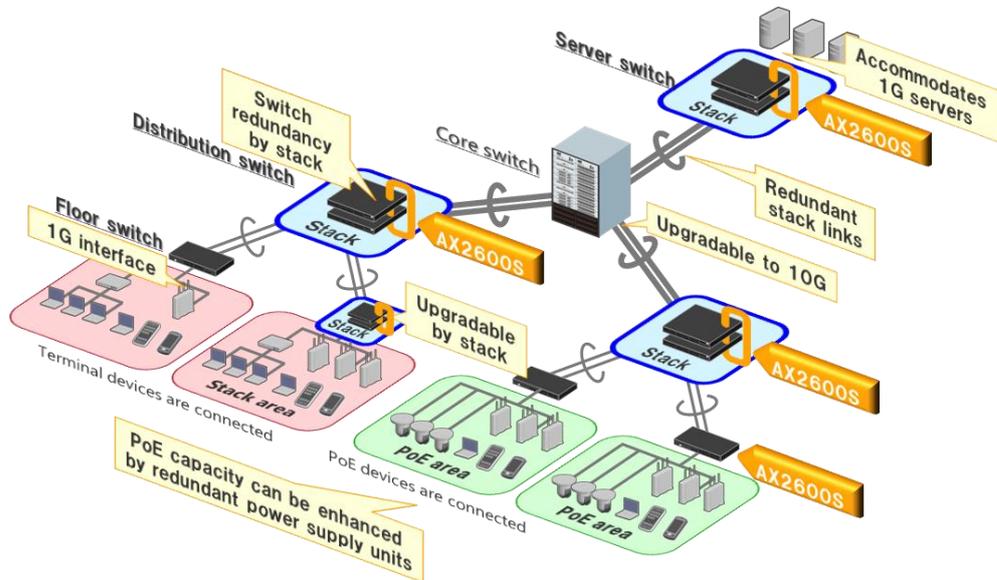


Figure 5 Network using distribution switches and floor switches

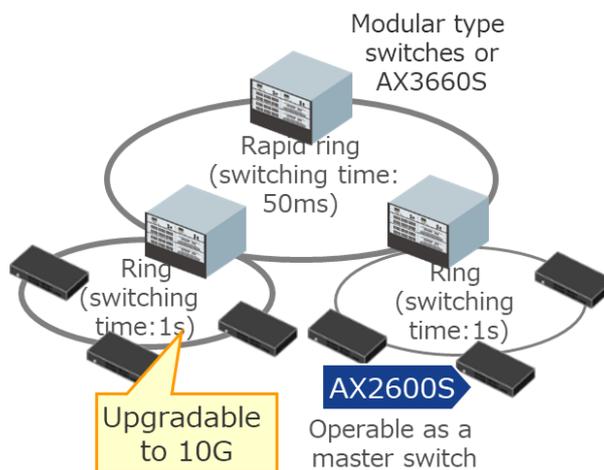


Figure 6 Ring network using a master switch

Table 1 Applicable positions

Applicable position		Points
Campus network	Distribution switch	<ul style="list-style-type: none"> •Multiport accommodation and switch redundancy by stack •Option license to upgrade 1G uplink (4 ports) to 10G uplink (4 ports) •Secure Boot to check and start up the device / OS after verifying that they had not been tampered
	Floor switch	<ul style="list-style-type: none"> •Multiport accommodation and switch redundancy by stack •Authentication (triple authentication, multistep authentication) •Option license to upgrade 1G uplink (4 ports) to 10G uplink (4 ports) •PoE capacity of max.144W capable of connecting many WiFi access points and high-performance network cameras •Telemetry function that enables real-time transmission of mirror data periodically or when an event occur •Settings automated by Python or Ansible •Secure Boot to check and start up the device / OS after verifying that they had not been tampered
Ring network	Master switch Transit switch	<ul style="list-style-type: none"> •Option license to upgrade 1G uplink (4 ports) to 10G uplink (4 ports) •Stable operation and high availability (Autonomous Extensible Ring Protocol) •TCO reduction (power consumption, operation manageability) •Compact 1U size body

2. Features

2.1 Features of AX2600S series

- (1) High reliability with various redundancy features (e.g. stacking, 10G and power supply redundancy)
 - Realizes high reliability with its high performance stack proven by AX2530S series, redundancy features such as 10G rings, and a built-in duplex power supply unit, which was first adopted as a layer-2 switch.

- (2) **Uplink performance of max.40Gbps**

- By applying the uplink 10G option license, you can upgrade 1G uplink (4 port) to 10G (10GBASE-R SFP + 4 ports). 10G link aggregation expands bandwidth up to 40G.
- Operable as a transit switch for 10G rings, and can configure a highly reliable broadband backbone.

- (3) **Industry-leading PoE capacity**

- **PoE/PoE+** is supported, and 15W/30W power can be supplied per port. The power of the entire system is 1440W (the industry's highest level achieved by an edge switch) *1.
- **Peak shift power supply function**
Time-shifting power supply to PoE ports ensures stable power supply to the power-receiving equipment and prevents unstable communication during recovery from a power failure.

*1: Industry's highest level achieved by a 1U box-type switch through its main body only (according to ALAXALA's research).

- (4) **Easy-to-operate function that greatly reduces the workload of network managers**

- **Easy operation/automation**

Supports various tools to automate operations. The advanced script language **Python** monitors logs and timers and executes commands when events occur, and the configuration management tool **Ansible** automatically performs routine processes and settings. In addition, **MC operation mode** reduces the burden of device replacement and restoration by synchronizing the edge switch's software / device data with a switch memory card in advance.

- **Zero Touch Provisioning**

AX-Network Manager (operation control product) eases the replacement of an edge switch for maintenance and failure recovery. If only the name of the device is set on the substitute machine, you can automatically set the preset data and software without inputting commands.

- (5) **Cyberattack-resistant security**

- **Secure Boot**

Confirms that the hardware and software have not been tampered with. Each time the device is started, the system prevents unauthorized access and information theft/leakage, which may be caused through a backdoor in the system.

- **Zero Trust Security**

Realizes zero-trust security of campus networks (e.g., automatically detecting and blocking malware infected terminals, and detecting anomalies such as cyberattacks) with various security solutions: access control by network authentication, automatic cyberattack prevention, network visualization, failure detection solution, etc.

- **Network authentication**

IEEE802.1X, MAC authentication, and Web-based authentication are supported and required to connect to the network. In addition, multi-step authentication, which allows access only when permitted by a combination of terminal authentication and user authentication, is supported. Furthermore, fine-grained access control can be achieved by applying the dynamic VLAN (option for network authentication) according to the system

configuration.

(6) **Superior network management, maintenance and operation**

• **USB memory card**

USB memory card can be used to easily back up the configuration and collect error messages.

• **MC operation mode**

By inserting USB memory card into AX2630S, the software and device information is saved. After that, if configuration settings are changed, the changes are saved automatically. In addition, when a factory-shipped AX2630S is started with USB memory card inserted therein, the device starts with the previously saved software and device information (including the configuration), and the transition time from the active device to the backup device can be shortened.

(7) **Communication quality assurance through QoS**

• High-performance hardware-based QoS

• Variety of QoS control functions

L2-QoS (IEEE802.1p, bandwidth control, priority control, discard control, etc.),
IP-QoS (Diff-Serv, bandwidth control, priority control, discard control, etc.)

(8) **Compactness and reduced environmental impact**

• Compact body

1U-height device capable of accommodating up to 48 ports of 10BASE-T/100BASE-TX/1000BASE-T.

• Reduces environmental impact by complying with RoHS.

(9) **Telemetry function**

• **Monitoring and automation to reduce the burden on network managers**

Supports the PUSH type telemetry function*2, which sends a large amount of data at one time.

*2: To be supported in the future.

(10) **Fanless design and environmental resistance**

• **Fanless (AX2630S-24T4XW)**

In addition to reducing the problems caused by dust sucked into the device, a quiet, noise-free office environment is realized.*3

*3: AC power supply (PS-26AF15) installed in the dual power supply set and DC power supply (PS-26DF15) installed in the AC/DC power supply set are equipped with cooling fans.

3. Specifications

3.1 Main unit specifications

Table 2 Specifications of Main Unit (1/2)

Specifications								
		AX2630S-24T4XW		AX2630S-48T4XW				
Max. switching capacity (Gbit/s)		132		180				
Packet processing performance (Mpacket/s) (Note 1)	Max. packet forwarding rate		98.2		133.9			
	Network interface		4 (Note 2) (Note 3)		4 (Note 2) (Note 3)			
		10GBASE-SR/LR/ER/BR/CU (SFP+)		4 (Note 2) (Note 3)				
		1000BASE-SX/LX/LH/BX (SFP)		2+4 (Note 2) (Note 3)				
		10/100/1000BASE-T (UTP)		24				
		10/100/1000BASE-T (UTP) [PoE/PoE+]		-				
Amount of memory installed (MB)		2048						
Number of memory card slots		USB Type-A storage port x 1						
Redundancy		Power supply (AC or AC/DC mixed)						
Cooling system		Fanless (Note 5)			-			
Power supply conditions	Voltage	Rated voltage (V)		AC100 to 120 / AC200 to 240		DC-48		
		Fluctuation range (V) (Note 6)		AC90 to 132 / AC180 to 264		DC-40 to -57		
	Frequency (Hz)		50 / 60		-		50 / 60	
	Max. input current (A)		0.8@AC100V 0.4@AC200V		1.0@DC-48V		0.9@AC100V 0.5@AC200V	
	Max. apparent power (VA)		80		-		90	
	Max. power consumption (W)		45		-		80	
	PoE capacity (W)		-		-		-	
	AC wall outlet		Grounding type: 2-pole plug (Note 10)		Screw-type cable plug connector		Grounding type: 2-pole plug (Note 10) Screw-type cable plug connector	
	Heating value (kJ/h)		162		288			
Noise		46 to 63 dB or less (Note 12)			53 dB or less			
Equipment conditions	Dimensions: W x D x H (mm) (height: U)		440 x 350 x 44 (1U)					
	Weight (kg) (including power supply units)		4.4		4.9			
Energy saving efficiency measured according to Energy Conservation Act (Note 13)	Energy efficiency (W/(Gbit/s))		Category A 0.5 (reference value: 1.5)		Category A 0.7 (reference value: 1.6)			
	Max. effective transmission rate (Gbit/s)		66		90			
	Transmission rate and port count	10Gbit/s		4		4		
1Gbit/s		26		50				
Environmental conditions	Temperature	Allowable operating range		0°C to 45°C (Note 14)		0°C to 50°C		
		Non-operating (when powered off)		-10°C to 50°C				
		Storage/transportation temperature		-25°C to 65°C				
	Relative humidity	Allowable operating range		10% to 90% (non-condensing)				
		Non-operating (when powered off)		8% to 90% (non-condensing)				
		Storage/transportation temperature		5% to 90% (non-condensing)				
Floating dust		Floating dust of about 10 microns or less: 0.15mg/m ³						
Vibration (m/s ²)		2.45 or less						
Applied standards	EMI		VCCI Class A					
	Harmonic current		IEC 61000-3-2					
	EMS		EN55035					
	Safety standards		IEC62368-1 compliant					
	Related laws and regulations		Electrical Appliance and Material Safety Law (Power Cables)					

Table 3 Switch specifications (2/2)

Specifications			AX2630S-24P4XW	AX2630S-48P4XW
Max. switching capacity (Gbit/s)			132	180
Packet processing performance (Mpacket/s)(Note 1)	Max. packet forwarding rate		98.2	133.9
Network interface	10GBASE-SR/LR/ER/BR/CU (SFP+)		4 (Note 2) (Note 3)	4 (Note 2) (Note 3)
	1000BASE-SX/LX/LH/BX (SFP)		2+4 (Note 2) (Note 3)	2+4 (Note 2) (Note 3)
	10/100/1000BASE-T (UTP)		-	-
	10/100/1000BASE-T (UTP) [PoE/PoE+]		24	48
Amount of memory installed (MB)			2048	
Number of memory cards slots			USB Type-A storage port x 1	
Redundancy			AC power (Note 4)	
Cooling system			-	
Power supply conditions	Voltage	Rated voltage (V)	AC100 to 120 / AC200 to 240	
		Fluctuation range (V) (Note 6)	AC90 to 132 / AC180 to 264	
	Frequency (Hz)		50 / 60	
	Max. input current (A)		8.5@AC100V 4.3@AC200V	12@AC100V 6.5@AC200V
	Max. apparent power (VA)		910	1800
	Max. power consumption (W)		890	1760
	PoE capacity (W)		535 per device (Note 7) 720 per device (Note 9)	785 per device (Note 8) 1440 per device (Note 9)
	AC wall outlet		Grounding type: 2-pole plug (Note 10)	
Heating value (kJ/h)			612 (Note 11)	1152 (Note 11)
Noise			38 to 79 dB or less	49 to 75 dB or less
Equipment conditions	Dimensions: W x D x H (mm) (height: U)		440 x 350 x 44 (1U)	
	Weight (kg) (including power supply units)		5.8	6.4
Energy saving efficiency measured according to Energy Conservation Act (Note 13)	Energy efficiency (W/(Gbit/s))		Category A 0.7 (reference value: 2.0)	Category A 0.9 (reference value: 2.1)
	Max. effective transmission rate (Gbit/s)		66	90
	Transmission rate and port count	10Gbit/s	4	4
		1Gbit/s	26	50
Environmental conditions	Temperature	Allowable operating range	0°C to 50°C	
		Non-operating (when powered off)	-10°C to 50°C	
		Storage/transportation temperature	-25°C to 65°C	
	Relative humidity	Allowable operating range	10% to 90% (non-condensing)	
		Non-operating (when powered off)	8% to 90% (non-condensing)	
		Storage/transportation temperature	5% to 90% (non-condensing)	
	Floating dust		Floating dust of about 10 microns or less: 0.15mg/m ³	
Vibration (m/s ²)		2.45 or less		
Applied standards	EMI		VCCI Class A	
	Harmonic current		IEC 61000-3-2	
	EMS		EN55035	
	Safety standards		IEC62368-1 compliant	
	Related laws and regulations		Electrical Appliance and Material Safety Law (Power Cables)	

[Notes for Table 2 and Table 3]

Note 1: The measurement conditions are as follows.

- Physical Medium: 1000BASE-T,1000BASE-X
- Packet type: Layer 2 relay, no flooding
- Packet Length: 64 bytes
- QoS, filtering: not configured

Note 2: These ports are shared by 10GBASE-R(SFP+) and 1000BASE-X(SFP). You cannot use 10GBASE-R(SFP+) and 1000BASE-X(SFP) simultaneously. An uplink 10G option license is required if you want to use 10GBASE-R or a direct attach cable. Note that direct attach cables can also be used on two ports.

Note 3: Adding a stack option license allows you to use the two ports as stack ports.

Note 4: When used in a power supply redundancy configuration.

Note 5: AC power supply (PS-26AF15) installed in the dual power supply set and DC power supply (PS-26DF15) installed in the AC/DC power supply set are equipped with cooling fans.

Note 6: The range to guarantee normal operation.

Note 7: This value applies when one power supply unit is used. If the power of the power receiving device is Class3 (15.4W), the maximum number of ports that can be simultaneously powered is 24. For Class4 (30.0W), the maximum port count is 17.

Note 8: This value applies when one power supply unit is used. If the power of the power receiving device is Class3 (15.4W), the maximum number of ports that can be simultaneously powered is 48. For Class4 (30.0W), the maximum port count is 26.

Note 9: This value applies when two power supply units are used. If the PoE enhanced mode is set, all ports can be powered with Class3 (15.4W) or Class4 (30.0W) power.

Note 10: For AC100V power cord attached to the equipment. The power cord for AC200V is available as a common option. For the power supply connector form of the AC200V power cord, refer to the Hardware Instruction Manual.

Note 11: Heating value of this device only. This does not include the calorific value of PD (power receiving device).

Note 12: This value applies when AC power supply (PS-26AF15) or DC power supply (PS-26DF15) is installed.

Note 13: Values are based on the measurement method stipulated in the Energy Saving Law.

Note 14: The upper limit is 40°C when using SFPP-ER.

3.2 Function list

Table 4 lists the supported functions and their standards.

Table 4 AX2600S series functions

Category	Function		Compliance standards	Remarks
LAN	Ethernet	10BASE-T/100BASE-TX/ 1000BASE-T	IEEE802.3 IEEE802.3u IEEE802.3a b	
		10BASE-T/100BASE-TX/ 1000BASE-T(PoE/PoE+)	IEEE802.3af IEEE802.3at	
		1000BASE-X(SX/LX)	IEEE802.3z	
		1000BASE-X(BX)	IEEE802.3ah	
		1000BASE-X(LH)	-	
		10GBASE-R(SR/LR/ER)(SFP+)	IEEE802.3ae	Option license OP-ULTG is needed.
		10GBASE-R(BR)(SFP+)	-	Option license OP-ULTG is needed.
		10GBASE-CU(SFP+)	-	Option license OP-ULTG is needed.
		Flow control	IEEE802.3x	
	link debounce/link up debounce	-		
	test interface	-	(Note 1)	
	Auto negotiation extension	10BASE-T/100BASE-TX/ 1000BASE-T downshift	-	
	PoE time-shifting power supply		-	
	Link aggregation		IEEE802.3ad (IEEE802.1AX)	
Jumbo frame		-		
Layer 2 function	Transparent bridge		-	
	VLAN	Port VLAN	IEEE802.1Q	
		VLAN tagging	IEEE802.1Q	
		Protocol VLAN	-	
		MAC VLAN	-	
		Tag translation	-	
		VLAN debounce	-	
	VLAN tunneling		-	
	Inter-port relay blocking		-	
	Spanning tree	STP	IEEE802.1D IEEE802.1t	(Note 2)
		RSTP	IEEE802.1w	
		MSTP	IEEE802.1s	
		PVST+	-	
		BPDU filter	-	
		Loop guard	-	
		Root guard	-	
	Autonomous Extensible Ring Protocol	Master node	-	(Note 3)
		Transit node	-	
		Shared node	-	
		Multiple failure monitoring function	-	
		Ring with STP	-	
	Uplink redundancy		-	
	DHCP snooping		RFC2131	
	IGMP / MLD Snooping	IGMPv1 snooping	RFC4541	(Note 1)
		IGMPv2 snooping	RFC2236	
		IGMPv3 snooping	RFC2710	
		IGMP snooping fast-leave feature	RFC3376	
IGMP snooping multicast router port auto-learning				
MLDv1 snooping				
MLDv2 snooping				
Storm control		-		
IEEE802.3ah/UDLD		IEEE802.3ah	(Note 4)	
L2 loop detection		-		
CFM (Connectivity Fault Management) (Ether OAM)		IEEE802.1ag	(Note 1)	
LLDP		IEEE Std 802.1AB-2009 IEEE802.1AB Draft 6		
Flush Request frame (GSRP) reception		-		
Flush control frame (uplink redundancy) reception		-		

Category	Function		Compliance standards		Remarks
Layer 3 function	IPv4	IP,ARP,ICMP	RFC791 RFC826 RFC950 RFC1122 RFC1812	RFC792 RFC922 RFC1027 RFC1519 RFC2644	
	IPv4 DHCP server		RFC2131 RFC2136 RFC4702	RFC2132 RFC3046	
	IPv6	IPv6, NDP, ICMPv6	RFC2474 RFC4291 RFC4861 RFC8200	RFC2710 RFC4443 RFC4862	
Additional function	Filter	Flow detection	Layer 2 conditions	-	
			Layer 3 conditions (IPv4)		
			Layer 3 conditions (IPv6)		
			Layer 4 conditions		
	QoS / Diff-Serv	Flow detection	Layer 2 conditions	-	
			Layer 3 conditions (IPv4)		
			Layer 3 conditions (IPv6)		
			Layer 4 conditions		
		Bandwidth monitoring		-	
	Marker		User priority rewrite	-	
			DSCP marking	RFC2474 RFC2597 RFC3260	RFC2475 RFC3246
	Prioritization		CoS mapping	RFC2597	RFC3246
			Output priority control	RFC3260	
	Shaper		PQ	-	
			PQ+RR	-	
			PQ+DRR	-	Possible by setting the weights equally
		Tail drop		-	DRR: Weighted (bytes) round robin
	Layer 2 authentication	IEEE 802.1X	Fixed VLAN mode (per-port authentication)	IEEE802.1X RFC2865 RFC2868 RFC3162 RFC3580	RFC2866 RFC2869 RFC3579 RFC3748
			Dynamic VLAN mode		
		Web authentication	Fixed VLAN mode	URL redirection	-
Keep Alive					
Dynamic VLAN mode					
MAC authentication		Dynamic VLAN mode	URL redirection		
Common features			IPv4 access list for authentication	-	
			MAC access list for authentication		
		Multi-step authentication		-	
Port mirroring	Local		-		
		802.1Q Tag assignment	-		
Policy-based mirroring (reception)	Local		-		
Stack	Stack features	Over-switch LA		-	OP-STK option (Note 5)
		Stack port	Ethernet	-	
	Grouping		-		
	Unified management	IP address for stack management		-	
		Device MAC address		-	
		Configuration		-	
		Remote command		-	
Availability	Upgrade	Non-stop upgrade	-		

Category	Function		Compliance standards		Remarks	
Reliability	Environmental monitor		-			
	Self-diagnosis		-			
	Gigabit switch redundancy protocol (GSRP)	GSRP aware	-			
Network management	SNMP(v1/v2c/v3)		RFC1155	RFC1157		
			RFC1901	RFC1902		
			RFC1903	RFC1904		
			RFC1905	RFC1906		
			RFC1907	RFC1908		
			RFC2578	RFC2579		
			RFC2580	RFC3410		
			RFC3411	RFC3412		
			RFC3413	RFC3414		
			RFC3415	RFC3416		
			RFC3417	RFC3418		
			RFC3584			
	MIB-II, RMON, IP Forwarding MIB, Interface MIB		RFC1158	RFC1213	(Note 6)	
			RFC1354	RFC1757		
			RFC2233			
	dot1dBridge MIB		RFC1493		RFC2674	
	Ethernet MIB		RFC1643		RFC3621	
CFM-MIB		IEEE802.1ag		(Note 1)		
LLDP MIB		IEEE Std 802.1AB-2009				
LLDP-EXT-DOT1-V2-MIB		IEEE Std 802.1AB-2009				
sFlow		RFC3176				
Private MIB		Statistical information	-			
		L2 (VLAN, FDB) data	-			
		Neighbor discovery protocol (LLDP) data	-			
		Filter/QoS data	-			
		System data (startup information, login)	-			
		Device data	-			
		sFlow data	-			
SYSLOG		RFC5424				
AX-Security-Controller		-				
Operation & management	Operation terminal device connection	Serial (console)	-			
		TELNET, FTP, TFTP	RFC854	RFC855		
			RFC959			
	Configuration	CLI	-			
	Security	Login authentication (password/host address/RADIUS/TACACS+)		RFC2865	RFC2866	RADIUS compliant standards
				RFC2869	RFC3162	
				RFC3579	RFC3580	
			draft-grant-tacacs-02-txt		TACACS+ compliant standards	
	SSH	Version 1 (Note 7)		draft-ylonen-ssh-protocol-00.txt		
		Version 2		RFC4251	RFC4252	
				RFC4253	RFC4254	
			RFC4344	RFC4419		
			RFC4716	RFC5656		
			RFC6668	RFC8268		
			draft-ietf-secsh-filexfer-13			
Collection of management information	Device/interface status display		-			
	Operation message log		-			
	Statistics for each link		-			
Advanced script (Python)	Basic function		-			
	Command script		-			
	Resident script		-			
	Event monitoring function	System message monitoring		-		
		Timer monitoring		-		
	Applet function	Event startup script	-			

Category	Function		Compliance standards	Remarks	
	MC operation mode		-		
	Zero touch provisioning		-	(Note 1)	
	NTP		RFC5905		
	Commandless maintenance		-		
	Energy saving function	Port power saving	EEE (Energy-Efficient Ethernet)	IEEE 802.3az	
		Power consumption data display			
	Long life solution	Temperature log		-	
		Fan control		-	
	Secure boot		-		

[Legend] - : No compliant standard

Note 1: Does not operate during stacking.

Note 2: Combination with Ring feature is not supported when stacked.

Note 3: Combination with shared node operation, multiple failure monitoring and STP is not supported when stacked.

Note 4: Only Information OAMPDU is supported.

Note 5: Ports configured as stack ports cannot be used for the purpose other than the stack ports.

Note 6: RMON is not available when stacked.

Note 7: For software delivered after 2022, SSH Version 1 may be discontinued.

[Copyright]

All Rights Reserved, Copyright (C), 2022, ALAXALA Networks, Corp.

[Issue]

November 2022 (Ver.2.2 1st edition)

- The company name, product name, and function name specific to each company in this data sheet is a trademark or a registered trademark.
- Product appearance and specifications are subject to change without notice.
- The indicated model name is intended for use in Japan and is intended for use only in Japan. Contact our salesperson in your region for information on overseas model names. When you export this product, please follow the necessary procedures after confirming the regulations of the Foreign Exchange and Foreign Trade Control Law and the export-related laws and regulations of foreign countries such as the U.S. Export Control Regulations. If you are not sure, contact our sales representative.

Alaxala

Alaxala Networks, Inc.
Shin-Kawasaki Mitsui Building West Wing
1-1-2, Kashimada, Saiwai-ku, Kawasaki-shi,
Kanagawa, 212-0058

URL: <https://www.alaxala.com/>

For inquiries, visit here:

<https://www.alaxala.com/jp/contact/>