ALAXALA compact gigabit multi-layer switch

# AX3640S Series

## 1. Overview

The AX3640S series of ALAXALA compact gigabit multilayer switches are available in the following seven models.

The AX3640S series, excluding the AX3640S-24T model, consists of a redundant power supply (W) model that can be used with AC and DC power, and supports hot-swap power supply redundancy.

The AX3640S-24T model can be used only with AC power.

Figure 1 through Figure 7 show the appearance of each model in the AX3640S series.



**Figure 1: AX3640S-24T**



**Figure 2: AX3640S-24TW**



**Figure 3: AX3640S-24T2XW**



**Figure 4: AX3640S-48TW**



**Figure 5: AX3640S-48T2XW**



**Figure 6: AX3640S-24SW**



**Figure 7: AX3640S-24S2XW**

## 1.1 Product concept

The AX3600S series consists of a compact box-type multilayer switch designed to balance costs with the functionality and switching performance required by enterprise networks while inheriting the carrier-grade switch technologies developed by ALAXALA to implement its goal of a "guaranteed network."

Redundant power supply (W) models for the AX3640S series have been extensively increased and the series now has the enhanced authentication functionality, which is in high demand in the public sector and educational markets.

## 1.2 Usage examples

As core switches for enterprise or small to medium-size networks or user grouping switches for providers, the AX3600S series models are appropriate for a wide range of uses.

As part of the product line, the AX3640S series offers high-grade models for ISPs, the public sector (owned operated networks), and the educational market
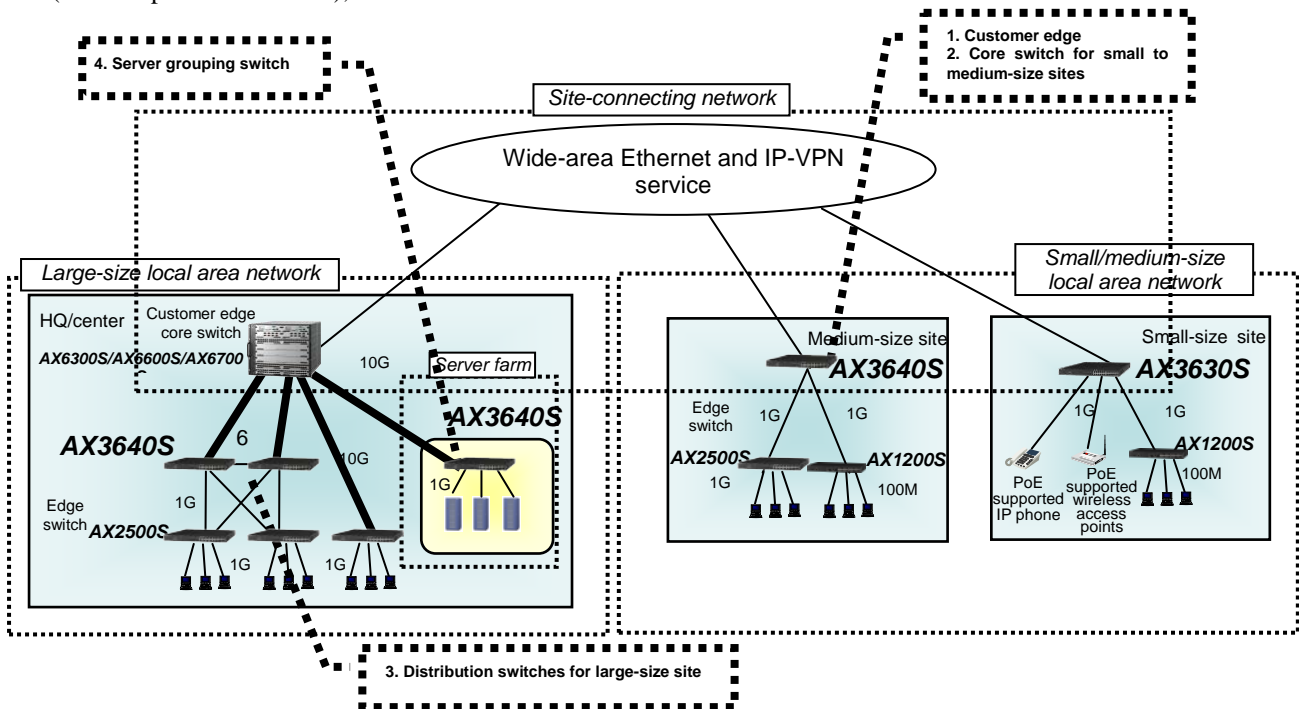


**Figure 8: Example of using the switches as floor switches for a large- or medium-size local area network**

**Table 1: Switch usage example**

| Switch usage example | | Point |
|---|---|---|
| (1) Site-connecting network | Customer edge | - Stable operation of OSPF and other routing protocols<br>- Support for IPv6, multicasts, and other advanced functionality<br>- High reliability (VRRP polling and GSRP)<br>- Compact chassis. 1U size for all models. |
| (2) Large-size local area network | Distribution switch | - 10G system<br>- Security functionality (flow monitoring, authentication, quarantine)<br>- High reliability (GSRP and link aggregation)<br>- TCO reduction (power consumption and operation manageability)<br>- Compact chassis. 1U size for all models. |
| (3) Small/medium-size local area network | Core switch | - Medium-size core switch for housing wireless AP and IP phones<br>- Security functionality (flow monitoring, authentication, quarantine)<br>- High reliability (GSRP and link aggregation)<br>- TCO reduction (power consumption and operation manageability)<br>- Compact chassis. 1U size for all models. |
| (4) Server farm | Server grouping switch | - Multiple 1G ports<br>- 10G uplink<br>- TCO reduction (power consumption and operation manageability)<br>- Compact chassis. 1U size for all models. |

## 2. Features

### 2.1 Features of the AX3640S series

(1) Network authentication
- Eliminating unauthorized users
  - Brought-in PCs and other devices without the capability to be managed via security measures cannot be connected to a network.
  - Preventing outsiders from accessing the network
- Protecting server information
  - Department servers installed without authorization are not properly made inaccessible to unauthorized users (password protected) in many cases; such servers are disabled and cannot be connected to a network (unlimited use of servers that are not properly made inaccessible to unauthorized users may lead to information leaks; information leaks are prevented on the network side.)
  - Access to servers by users without access rights is limited (dynamic VLANs are used).
- Protecting client PCs
  - Client PCs, which are likely to not be properly blocked to unauthorized users, are protected from unauthorized access to prevent information leaks.
- Problem occurrence traceability
  - Based on the unsuccessful authentication history, when and by whom unauthorized access occurs is checked.
  - When improper network use is discovered, when and by whom the network access occurs is checked based on the successful authentication history.
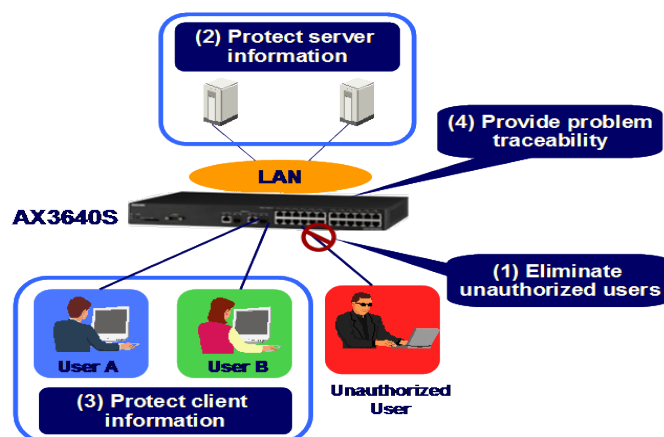
**Figure 9: Network authentication**

- Authentication under an environment where different types of computers coexist
  - Even in a mixed network of different types of computers, the series models can perform network authentication by supporting three different authentic methods: the IEEE 802.1X functionality, Web authentication, and MAC-based authentication.
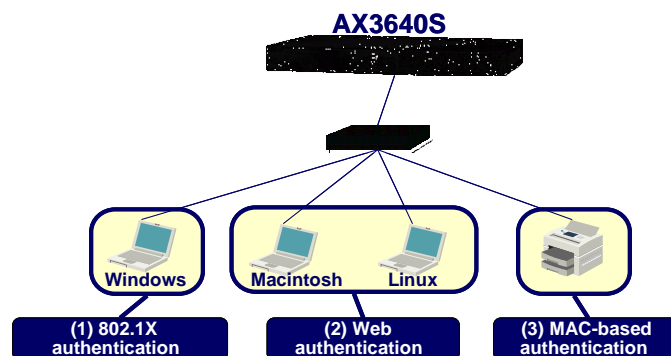
**Figure 10: Mixed environment**

- Significant reduction in total cost
  - It is possible to perform network authentication even when access is made via an island hub in an environment where no terminal is directly housed in the floor switches. It is possible to increase user capacity at a low cost by using island hubs.

(2) Quarantine network
  - Security checks
    - The network prevents information leaks by quarantining PCs that violate the security policy, including PCs with unauthorized software installed or unpatched PCs.
    - The network prohibits access from infected PCs that may compromise information systems on business networks.
    - Quarantine networks reduce the operation cost by letting the quarantine server centrally manage the security policy for terminals.
  - The network can work together with many quarantine systems:
    - Microsoft NAP
    - NOSiDE (NTT Data)
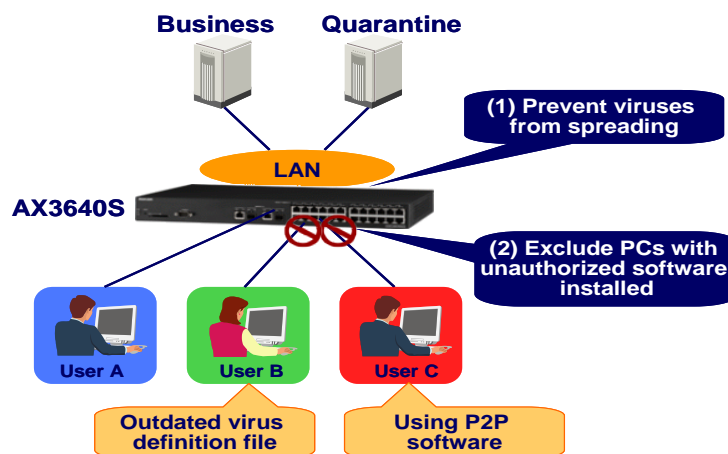    - JP1 (Hitachi, Ltd.)
    - InfoCage (NEC)



**Figure 11: Quarantine network**

(3) Robust security
  - Advanced and fine-grained packet filtering
    - Hardware-based high-performance filtering processes are available.
    - With the outbound filtering functionality, each model can efficiently consolidate security rules on a destination network basis.
    - Partial specification of Layer 2/3/4 headers
    - Scalability with multiple conditions acceptable
      The maximum numbers of filter entries can be defined as 4096 for IN per device and 1024 for OUT per device.
  - Layer 2 VPN based on VLAN tunneling
  - IEEE 802.1X, which provides a high level of operation security, is supported.
  - Various VLANs are supported (Port VLANs, protocol VLANs, MAC VLANs, and VLAN tags).
  - It is possible to use RADIUS or TACACS+ to restrict issuable commands for each log-in password authentication and user.
  - Unauthorized DHCP servers and terminals with fixed IP addresses are excluded from networks.
    - Each model provides robust security by eliminating unauthorized DHCP servers and terminals with fixed IP addresses using DHCP snooping.

(4) High reliability for configuring mission-critical networks
- High product quality
- High reliability assured through exacting component selection and strict design and testing standards
- Adding an additional power supply (for a total of two) to a redundant power model provides power supply redundancy.
- Stable routing through inheritance of software proven through use by carriers and ISPs

- Variety of redundant network configurations
- High-speed path switching
Autonomous Extensible Ring Protocol, Rapid Spanning Tree Protocols (IEEE 802.1w, IEEE 802.1s), Uplink Redundant, GSRP (Note 1), Link Aggregation (IEEE 802.3ad), Hot Standbys (VRRP), Static/VRRP Polling (Note 2), and more
- Load balancing
Equal traffic balancing at the IP level based on OSPF equal-cost multipath routing
- L2 loop avoidance
- The UDLD functionality prevents loops at Spanning Tree Protocols or frame loss at link aggregation.
- The L2 loop detection functionality prevents loops by detecting improperly connected devices on the network.

(Note 1) GSRP (Gigabit Switch Redundancy Protocol)
For more information, see the manual on our website.
(Note 2) A monitoring functionality that uses polling to check access on a specified route for rerouting by dynamically interlocking VRRP and static routing.

(5) Supporting 10G uplinks
- By combining the AX6300S, AX6600S, or AX6700S series in a local area network, the series models provide a high-performance 10G network.
- For 10G Ethernet, XFP (10GBASE-SR/LR/ER/ZR) is used as the optical transceiver.

(6) Proven routing functionality
- Sophisticated and stable routing
- Each model provides a site-to-site connection based on wide-area Ethernet and IP-VPN services with reliable routing based on OSPF and BGP functionality and load distribution based on multipaths.
- Excellent support for IPv4 routing protocols
- Supports a wealth of proven IPv4 routing protocols
(Static, RIP, OSPF, BGP4, PIM-SM/SSM, and IGMP)
- Policy-based routing
- Supports policy-based routing in which optimal routes are selected according to the status of a forwarding destination.

(7) Excellent support for IPv6 functionality
- IPv6 multicast support
- The same peak performance for both IPv4 and IPv6
- IPv6 routing at full-wire speed over 10G Ethernet
- A variety of IPv6 routing protocols (static, RIPng, OSPFv3, BGP4+, PIM-SM, PIM-SSM, and MLD) provide diverse, flexible IPv6 networks.
- Enhanced functionality are supported including IPv4/v6 dual stacks, network management supporting IPv6-only environments (SNMP over IPv6), and authentication management (RADIUS over IPv6).
- Support for IPv6 Ready Logo Ph.2
- In addition to phase 1 functionality, phase 2 functionality is supported to provide practical IPv6 that more strictly conforms to specifications.

(8) Guaranteed communication quality by using powerful hardware-based QoS functionality
- High-performance hardware-based QoS processing
- Precise QoS control by specification of detailed parameters (Layer 2/3/4 headers)
- Variety of QoS control functionality
- L2-QoS (including IEEE 802.1p, bandwidth controls, priority controls, and discard controls) and IP-QoS (including Diff-Serv, bandwidth controls, priority controls, and discard controls)

(9) High-performance, high-density and compact design
- Maximum switch capacity of 136 Gbit/s (AX3640S-48T2XW)
    - Multi ports like gigabit Ethernet can be accommodated.
- Excellent performance
    - Distribution for large networks, core switches for small to medium-size networks, and multilayer switches for customer edge switches
- Compact chassis
    - High port density supporting 48 ports maximum of 10BASE-T / 100BASE-TX / 1000BASE-T
    - 24 ports maximum of 1000BASE-X (SFP) are supported (AX3640S-24SW and AX3640S-24S2XW).
    - Compact sizes with the depth of 38.0cm to 44.0 cm and height of 4.3 cm (1 U)

(10) Easy-to-operate user interface (configuration commands)
- Industry-standard command line interface is supported.
    - Same format is used for the input commands and configuration information for improved ease of operation.
    - Copying and pasting of configuration information is supported.

(11) Advanced network management, maintenance, and operation
- CFM (Connectivity Fault Management) (Ether OAM)
    - Connectivity monitoring and failure management are available at the Layer 2 level by performing continuity checks (CC), loopbacks, and linktraces.
- In addition to the basic MIB-II, many other MIBs including IPv6-MIB and RMON are supported.
- The mirror port functionality can be used to monitor and analyze traffic (at both of the receiving and sending ports).
- Online maintenance
    - It is possible to continue communication through partial reboot at the time of configuration change.
- Support for SD memory cards
    - Users can easily back up the configuration and save error information.
    - Maintenance tasks are simplified.
- Device cooling system fit for stable operation
    - Each model has a front-side air intake and rear-side air exhaust system; when mounted in a rack, it is less likely to be affected by the exhaust heat from the other devices, offering stabler operation.
- sFlow allows detailed flow statistic information to be retrieved.

(12) Excellent cost performance
- Switching capacity sufficient for an enterprise-oriented network is provided with excellent cost performance.
- Low power consumption
    - Low power consumption is considered at the architecture design and part selection phases. This contributes to the reduced TCO after introduction.

(13) Excellent support for Layer 2 functionality
- Variety of VLAN functionality
    - Port VLAN, protocol VLAN, MAC VLAN, and VLAN tag implemented
    - Enables purpose-built VLANs
- Various Spanning Tree Protocols supported
    - STP (IEEE 802.1D), Rapid STP (IEEE 802.1w), PVST+, and MSTP (IEEE 802.1s) implemented
- Ring Protocol
    - Autonomous Extensible Ring Protocol implemented, allowing a variety of ring network configurations. Fast and stable Layer 2 redundancy.

(14) Power saving
- Port power OFF functionality
    - Reduces power consumption by turning off the power supplied to either the ports for which shutdown is set by using the configuration command, or the ports deactivated by using the operation command.
- Scheduling
    - You can use the shutdown setting of the port power OFF functionality described above according to specified schedules for long holidays, Saturdays, Sundays, public holidays, or nighttime.

## 3. Specifications

### 3.1 Switch specifications

The AX3640S series offers the following models, which are based on a unified architecture.

Adding an additional power supply (for a total of two) to a redundant power model provides power supply redundancy.

Table 2 and Table 3 show the specifications of AX3640S series switches.

**Table 2: Switch specifications (1/2)**

| Specifications | | | | | | |
|---|---|---|---|---|---|---|
| Model name | | AX3640S-24T | AX3640S-24TW | | AX3640S-24T2XW | |
| Maximum switching capacity | | 48 Gbit/s | 48 Gbit/s | | 88 Gbit/s | |
| Packet processing performance (M packets/s) (Note 1) | Maximum packet relay performance | 35.7 | 35.7 | | 65.5 | |
| Number of network interfaces | 10GBASE-SR/LR/ER/ZR (XFP) | -- | -- | | 2 | |
| | 1000BASE-SX/SX2/LX/BX/LH(SFP) | 4 (Note 2) | 4 (Note 2) | | 4 (Note 2) | |
| | 10BASE-T/100BASE-TX/1000BASE-T(SFP) | -- | -- | | -- | |
| | 100BASE-FX(SFP) | -- | -- | | -- | |
| | 10BASE-T/100BASE-TX/1000BASE-T | 24 (Note 2) | 24 (Note 2) | | 24 (Note 2) | |
| Standard memory size | | 512 MB | | | | |
| Number of memory card slots | | SD memory card x 1 | | | | |
| Redundancy | | -- | AC or DC power supply | | | |
| Power supply requirements | | AC power | AC power | DC power | AC power | DC power |
| | Voltage — Rated input voltage (V) | 100 to 120 AC/ 200 to 240 AC | 100 to 120 AC/ 200 to 240 AC | -48 DC | 100 to 120 AC/ 200 to 240 AC | -48 DC |
| | Voltage — Variation range (V) (Note 4) | 90 to 127.2 AC/ 180 to 254.4 AC (Note 5) | 90 to 127.2 AC/ 180 to 254.4 AC (Note 5) | -40 to -57 DC | 90 to 127.2 AC/ 180 to 254.4 AC (Note 5) | -40 to -57 DC |
| | Frequency (Hz) | 50/60 | 50/60 | -- | 50/60 | -- |
| | Maximum input current (A) | 0.8 @ 100 V AC 0.4 @ 200 V AC | 0.9 @ 100 V AC 0.5 @ 200 V AC | 1.6 @ -48 V DC | 1.0 @ 100 V AC 0.5 @ 200 V AC | 1.9 @ -48 V DC |
| | Maximum power consumption (W) | 75 | 85 | 75 | 100 | 90 |
| Calorific power (kJ/h) | | 270 | 306 | 270 | 360 | 324 |
| Equipment requirements | External dimensions W x D x H (mm) (height [U]) | 445 x 380 x 43 (1U) | 445 x 440 x 43 (1U) | | | |
| | Weight (kg) (power unit included) | No more than 5.0 | No more than 9.0 | | | |
| Environmental requirements (Note 6) | Temperature — Acceptable operating range | 0°C to 40°C | | | | |
| | Temperature — When not operating (not energized) | -10°C to 43°C | | | | |
| | Temperature — During storage and transportation | -25°C to 65°C | | | | |
| | Relative humidity — Acceptable operating range | 10% to 85% (non-condensing) | | | | |
| | Relative humidity — When not operating (not energized) | 8% to 85% (non-condensing) | | | | |
| | Relative humidity — During storage and transportation | 5% to 85% (non-condensing) | | | | |
| | Suspended particulates | Suspended particulates smaller than approx. 10 microns: 0.15 mg/ m$^3$ | | | | |
| | Vibration (m/s$^2$) | No more than 2.45 | | | | |
| Applicable standards | EMI standard | VCCI Class A | | | | |
| | Harmonic current emission standard | JIS C61000-3-2 | | | | |
| | EMS standard | JEITA IT-3001 | | | | |
| | Safety standard | UL60950-1 compliant | | | | |

## Table 3: Switch specifications (2/2)

| Specifications | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Model name | | AX3640S-48TW | | AX3640S-48T2XW | | AX3640S-24SW | | AX3640S-24S2XW | |
| Maximum switching capacity | | 96 Gbit/s | | 136 Gbit/s | | 48 Gbit/s | | 88 Gbit/s | |
| Packet processing performance (M packets/s) (Note 1) | Maximum packet relay performance | 71.4 | | 101.2 | | 35.7 | | 65.5 | |
| Number of network interfaces | 10GBASE-SR/LR/ER/ZR (XFP) | -- | | 2 | | -- | | 2 | |
| | 1000BASE-SX/SX2/LX/BX/LH (SFP) | 4 (Note 2) | | -- | | 24 (Note 2) | | 24 (Note 2) | |
| | 10BASE-T/100BASE-TX/1000BASE-T(SFP) | -- | | -- | | 20 (Note 3) | | 20 (Note 3) | |
| | 100BASE-FX(SFP) | -- | | -- | | 20 (Note 3) | | 20 (Note 3) | |
| | 10BASE-T/100BASE-TX/1000BASE-T | 48 (Note 2) | | 48 | | 4 (Note 2) | | 4 (Note 2) | |
| Standard memory size | | 512 MB | | | | | | | |
| Number of memory card slots | | SD memory card x 1 | | | | | | | |
| Redundancy | | AC or DC power supply | | | | | | | |
| Power supply requirements | | AC power | DC power | AC power | DC power | AC power | DC power | AC power | DC power |
| | Voltage — Rated input voltage (V) | 100 to 120 AC/ 200 to 240 AC | -48 DC | 100 to 120 AC/ 200 to 240 AC | -48 DC | 100 to 120 AC/ 200 to 240 AC | -48 DC | 100 to 120 AC/ 200 to 240 AC | -48 DC |
| | Variation range (V) (Note 4) | 90 to 127.2 AC/ 180 to 254.4 AC (Note 5) | -40 to -57 DC | 90 to 127.2 AC/ 180 to 254.4 AC (Note 5) | -40 to -57 DC | 90 to 127.2 AC/ 180 to 254.4 AC (Note 5) | -40 to -57 DC | 90 to 127.2 AC/ 180 to 254.4 AC (Note 5) | -40 to -57 DC |
| | Frequency (Hz) | 50/60 | -- | 50/60 | -- | 50/60 | -- | 50/60 | -- |
| | Maximum input current (A) | 1.4 @ 100 V AC 0.7 @ 200 V AC | 2.7 @ -48 V DC | 1.5 @ 100 V AC 0.8 @ 200 V AC | 2.9 @ -48 V DC | 0.9 @ 100 V AC 0.5 @ 200 V AC | 1.6 @ -48 V DC | 1.0 @ 100 V AC 0.5 @ 200 V AC | 1.9 @ -48 V DC |
| | Maximum power consumption (W) | 135 | 125 | 145 | 135 | 85 | 75 | 100 | 90 |
| Calorific power (kJ/h) | | 486 | 450 | 522 | 486 | 306 | 270 | 360 | 324 |
| Equipment requirements | External dimensions W x D x H (mm) (height [U]) | 445 x 440 x 43 (1U) | | | | | | | |
| | Weight (kg) (power unit included) | No more than 9.0 | | | | | | | |
| Environmental requirements (Note 6) | Temperature — Acceptable operating range | 0°C to 40°C | | | | | | | |
| | When not operating (not energized) | -10°C to 43°C | | | | | | | |
| | During storage and transportation | -25°C to 65°C | | | | | | | |
| | Relative humidity — Acceptable operating range | 10% to 85% (non-condensing) | | | | | | | |
| | When not operating (not energized) | 8% to 85% (non-condensing) | | | | | | | |
| | During storage and transportation | 5% to 85% (non-condensing) | | | | | | | |
| | Suspended particulates | Suspended particulates smaller than approx. 10 microns: 0.15 mg/ m$^3$ | | | | | | | |
| | Vibration (m/s$^2$) | No more than 2.45 | | | | | | | |
| Applicable standards | EMI standard | VCCI Class A | | | | | | | |
| | Harmonic current emission standard | JIS C61000-3-2 | | | | | | | |
| | EMS standard | JEITA IT-3001 | | | | | | | |
| | Safety standard | UL60950-1 compliant | | | | | | | |

(Note 1) The measurement conditions are as follows:
- Physical media: 1000BASE-T, 1000BASE-X, 10GBASE-R
- Packet type: Layer 2 forwarding without flooding
- Packet length: 64 bytes
- QoS and filters: not set

(Note 2) The four 10BASE-T/100BASE-TX/1000BASE-T ports and the four 1000BASE-X (SFP) ports are mutually exclusive and cannot be used concurrently.
(Note 3) Only fixed 1000BASE-X (SFP) ports are supported.
(Note 4) This is the range within which normal operation is guaranteed.
(Note 5) Specifications for input voltage of 200 V AC.
(Note 6) Do not install the Switch in the following locations. Failure to observe this caution might shorten the life of the Switch.
- Locations where the Switch is exposed to hydrogen sulfide (as in a hot spring area) or salt (as in a sea shore area).

### 3.2 Functionality

Table 4 shows the functionality supported along with the relevant standards.

It should be noted that the functionality supported vary depending on the software.

L3 advanced software

OSPF, BGP, IS-IS (Note 1), and policy-based routing (Note 9) are supported.

L3 light software

OSPF, BGP, IS-IS, and policy-based routing are not supported.

### Table 4: AX3640S series functionality

| Category | Functionality | | Relevant standards | Remarks |
|---|---|---|---|---|
| LAN | Ethernet | 10BASE-T/100BASE-TX/ 1000BASE-T | IEEE 802.3　　IEEE 802.3u IEEE 802.3ab | |
| | | 10BASE-T/100BASE-TX/ 1000BASE-T(SFP) | IEEE 802.3　　IEEE 802.3u IEEE 802.3ab | |
| | | 100BASE-FX(SFP) | IEEE 802.3 IEEE 802.3u | |
| | | 1000BASE-X(SX/LX) | IEEE 802.3z | |
| | | 1000BASE-X (SX2/BX (40 km supporting version)/LH) | -- | |
| | | 1000BASE-X(BX) | IEEE 802.3ah | |
| | | 10GBASE-R(SR/LR/ER) | IEEE 802.3ae | |
| | | 10GBASE-R(ZR) | -- | |
| | | Flow control | IEEE 802.3x | |
| | IEEE 802.3ad link aggregation | | IEEE 802.3ad | |
| | Jumbo frame | | -- | |
| Layer 2 functionality | Transparent bridge | | -- | |
| | VLAN | Port VLAN | IEEE 802.1Q | |
| | | VLAN tagging | IEEE 802.1Q | |
| | | Protocol VLAN | -- | |
| | | MAC VLAN | -- | |
| | | Tag translation | -- | |
| | | VLAN debounce | -- | |
| | VLAN tunneling | | -- | |
| | Inter-port relay blocking functionality | | -- | |
| | Layer 2 relay blocking functionality | | -- | |
| | Spanning Tree Protocol | STP | IEEE 802.1D　　IEEE 802.1t | |
| | | RSTP | IEEE 802.1w | |
| | | MSTP | IEEE 802.1s | |
| | | PVST+ | -- | |
| | | BPDU filter | -- | |
| | | Loop guard | -- | |
| | | Root guard | -- | |
| | Autonomous Extensible Ring Protocol | | -- | |
| | Uplink redundant functionality | | -- | |
| | DHCP snooping | | RFC 2131 | |
| | IGMP / MLD snooping | IGMPv2 snooping | RFC 4541 | |
| | | IGMPv3 snooping | | |
| | | IGMP snooping instant leave | | |
| | | MLDv1 snooping | | |
| | | MLDv2 snooping | | |
| | Storm control | | -- | |
| | IEEE 802.3ah/UDLD | | IEEE 802.3ah | (Note 2) |
| | L2 loop detection | | -- | |
| | CFM (Connectivity Fault Management) (Ether OAM) | | IEEE 802.1ag | |
| | Flush Request frame (VRRP) receiving functionality | | -- | |
| | Flush control frame (uplink redundancy) receiving functionality | | -- | |
| Layer 3 functionality | IPv4 | IP, ARP, ICMP | RFC 791　　RFC 792 RFC 826　　RFC 922 RFC 950　　RFC 1027 RFC 1122　　RFC 1519 RFC 1812　　RFC 2644 | |
| | | RIP, RIP2 | RFC 1058　　RFC 1519 RFC 2453 | |
| | | RIPv2 authentication | RFC 4822 | |
| | | OSPF | RFC 1519　　RFC 2328 RFC 3101　　RFC 5309 | Advanced software only |
| | | Stub router | RFC 3137 | Advanced software only |

| Category | Functionality | | | Relevant standards | Remarks |
|---|---|---|---|---|---|
| | | Static routing | | -- | |
| | | Null interface | | -- | |
| | | Local Proxy ARP | | -- | |
| | IPv6 | IPv6, NDP, ICMPv6 | | RFC 2373  RFC 2460<br>RFC 2461  RFC 2462<br>RFC 2463  RFC 2710<br>RFC 3587  RFC 5095 | |
| | | RIPng | | RFC 2080 | |
| | | OSPFv3 | | RFC 2740  RFC 5309 | Advanced software only |
| | | | Stub router | RFC 3137 | Advanced software only |
| | | Static routing | | -- | |
| | | Null interface | | -- | |
| | BGP4, BGP4+ | EBGP, IBGP peering | | RFC 1519  RFC 1771<br>RFC 2385  RFC 2842<br>RFC 2858  RFC 2918<br>RFC 3392  RFC 4271<br>RFC 4760  RFC 5492<br>`draft-ietf-idr-avo`<br>`id-transition-04.t`<br>`xt` | Advanced software only |
| | | Community | | RFC 1997 | Advanced software only |
| | | Route reflection | | RFC 2796  RFC 4456 | Advanced software only |
| | | Confederation | | RFC 1965  RFC 3065<br>RFC 5065 | Advanced software only |
| | | Route flap dampening | | RFC 2545 | Advanced software only |
| | | BGP Maximum Prefix | | -- | Advanced software only |
| | IS-IS | | | -- | Advanced software only (Note 1) |
| | IPv4 multicasts | IGMP | | RFC 2236 | |
| | | IGMP ver2 | | | |
| | | IGMP ver3 | | RFC 3376 | |
| | | PIM-SM/-SSM | | RFC 2362 | |
| | | | | RFC 4601<br>`draft-ietf-pim-sm-b`<br>`sr-07.txt` | Only the Generation ID related part of the PIM-Hello option is followed |
| | | | | `draft-ietf-pim-sm-v`<br>`2-new-05.txt` | Only the description about PIM-SSM is followed |
| | | | Extended BSR functionality | -- | [NEW] |
| | IPv6 multicasts | MLD ver1 ver2 | | RFC 2710  RFC 3810 | |
| | | PIM-SM/-SSM | | RFC 2362 | |
| | | | | RFC 4601<br>`draft-ietf-pim-sm-b`<br>`sr-07.txt` | Only the Generation ID related part of the PIM-Hello option is followed |
| | | | | `draft-ietf-pim-sm-v`<br>`2-new-03.txt`<br>`draft-ietf-pim-sm-v`<br>`2-new-05.txt` | Only the descriptions about IPv6 and PIM-SSM is followed |
| | DHCP or BOOTP relay agent functionality | | | RFC 1542  RFC 1812<br>RFC 2131 | |
| | IPv6 DHCP relay | | | RFC 3315 | (Note 8) |
| | IPv4 DHCP server functionality | | | RFC 2131  RFC 2136<br>RFC 3679 | |
| | | | | RFC 2132 | DHCP option |
| | IPv6 DHCP server functionality (Prefix Delegation) | | | RFC 3315  RFC 3319<br>RFC 3633  RFC 3646<br>RFC 3736  RFC 4075 | |
| | Multipath (Load balancing) | IPv4 | | -- | |
| | | IPv6 | | -- | |
| | Policy-based routing | IPv4 | | -- | Advanced software only |
| | | | Tracking functionality | -- | Advanced software only |
| | Layer 3 isolation functionality | | | -- | |

| Category | Functionality | | | Relevant standards | Remarks |
|---|---|---|---|---|---|
| Additional functionality | Filter | | | -- | |
| | Flow detection conditions | Layer 2 conditions | | -- | |
| | | Layer 3 conditions | | -- | |
| | | Layer 4 conditions | | -- | |
| | QoS / Diff-serv | Contract bandwidth monitoring (UPC) | | -- | |
| | | DSCP marking | | RFC 2474   RFC 2475 RFC 2597   RFC 3246 RFC 3260 | |
| | | CoS mapping | | -- | |
| | | Output priority control | | RFC 2597   RFC 3246 RFC 3260 | |
| | | WFQ | | -- | |
| | | Equal assurance | | -- | |
| | | PQ + DRR | | -- | DRR: weighted (number of bytes) round robin |
| | | PQ + WRR | | -- | WRR: weighted (number of frames) round robin |
| | | WRR | | -- | |
| | | Tail drop | | -- | |
| | Layer 2 authentication | IEEE 802.1X | Port-based authentication (static) | IEEE 802.1X RFC 2865   RFC 2866 RFC 2868   RFC 2869 RFC 3162   RFC 3579 RFC 3580   RFC 3748 | |
| | | | VLAN-based authentication (static) | | |
| | | | VLAN-based authentication (dynamic) | | |
| | | Web authentication | Fixed VLAN mode | -- | (Note 3) |
| | | | URL redirection | | |
| | | | Keep Alive functionality | | |
| | | | Dynamic VLAN mode | | |
| | | | URL redirection | | |
| | | | Legacy mode | | |
| | | MAC-based authentication | Fixed VLAN mode | -- | |
| | | | Dynamic VLAN mode | -- | |
| | | Common to authentication | Limited number of authentications | -- | (Note 6) |
| | | | Forced authentication | -- | (Note 7) |
| | Port mirroring | Local | | -- | |
| Reliability | Environmental monitoring | | | -- | |
| | Self diagnosis | | | -- | |
| | Redundant configuration (power supply) | | | -- | |
| | Hot standby (VRRP) | IPv4 | | RFC 3768 | |
| | | IPv6 | | draft-ietf-vrrp-ipv6-spec-07.txt draft-ietf-vrrp-ipv6-spec-02.txt | |
| | Switch redundancy switching functionality (GSRP) | Layer 2 | | -- | (Note 4) |
| | | Layer 3 | | | |
| | | VLAN group-only control functionality | | -- | |
| | | GSRP aware | | -- | |
| | Graceful Restart (Helper functionality/receiving router functionality) | | | | Advanced software only |
| | | | | RFC 3623 | OSPF/OSPFv3 |
| | | | | RFC 2370 | OSPF |
| | | | | RFC 3847 | IS-IS (Note 1) |
| | | | | draft-kompella-ospf-opaquev2-00.txt draft-ietf-ospf-ospfv3-graceful-restart-0.4.txt | OSPFv3 |
| | | | | draft-ietf-idr-restart-13.txt | BGP4/BGP4+ |

| Category | Functionality | | | Relevant standards | Remarks |
|---|---|---|---|---|---|
| Network management | SNMP (v1/v2c/v3) | | | RFC 1155   RFC 1157<br>RFC 1901   RFC 1902<br>RFC 1903   RFC 1904<br>RFC 1905   RFC 1906<br>RFC 1907   RFC 1908<br>RFC 2578   RFC 2579<br>RFC 2580   RFC 3410<br>RFC 3411   RFC 3412<br>RFC 3413   RFC 3414<br>RFC 3415   RFC 3416<br>RFC 3417   RFC 3418<br>RFC 3584 | |
| | MIB-II, RMON, IP Forwarding MIB, Interface MIB | | | RFC 1158   RFC 1213<br>RFC 1354   RFC 1757<br>RFC 2233 | |
| | IPv6 MIB | | | RFC 2452   RFC 2454<br>RFC 2465   RFC 2466 | |
| | Private MIB | Statistics | | -- | |
| | | Related to L2 (VLAN,FDB,GSRP) | | -- | |
| | | Related to neighborhood information (LLDP, OADP) | | -- | |
| | | Related to filters and QoS | | -- | |
| | | Related to various protocols (OSPF, etc.) | | -- | |
| | | System information (Boot information, login) | | -- | |
| | | Switch information | | -- | |
| | | Related to sFlow | | -- | |
| | dot1dBridge MIB | | | RFC 1493   RFC 2674 | |
| | Ethernet MIB | | | RFC 1643   RFC 3621 | |
| | IPv4 PIM MIB | | | RFC 2934 | |
| | MIBs for various protocols (OSPF, BGP, etc.) | | | RFC 1657   RFC 1850<br>draft-ietf-ospf-ospfv3-mib-03.txt | |
| | VRRP MIB | IPv4 | | RFC 2787 | |
| | | IPv6 | | draft-ietf-vrrp-unifid-mib-04 | |
| | CFM-MIB | | | IEEE 802.1ag | |
| | LLDP | | | IEEE 802.1AB/D6.0 | |
| | OADP (Octpower Auto Discovery Protocol) | | | -- | |
| | CDP (Cisco Discovery Protocol) | | | -- | (Note 5) |
| | sFlow | | | RFC 3176 | |
| Operation and maintenance | Operation terminal connection | Serial (console) | | -- | |
| | Configuration | CLI | | -- | |
| | Security | Login authentication (password/host address/RADIUS or TACACS+) | | RFC 2865   RFC 2866<br>RFC 3162 | RADIUS relevant standards |
| | | | | draft-grant-tacacs-02-txt | TACACS+ relevant standards |
| | | SSH(Ver. 2) | | draft-ietf-secsh-architecture-12.txt<br>draft-ietf-secsh-connect-15.txt<br>draft-ietf-secsh-dh-group-exchange-02.txt<br>draft-ietf-secsh-transport-14.txt<br>draft-ietf-secsh-publickeyfile-03.txt<br>draft-ietf-secsh-userauth-15.txt<br>draft-ylonen-ssh-protocol-00.txt | |
| | Collection of management information | Display of switch/interface status | | -- | |
| | | Operation message log | | -- | |
| | | Statistics on a line-by-line basis | | -- | |
| | NTP | | | RFC 1305 | |
| | Command-free maintenance functionality | | | -- | |
| | Power saving functionality | Dynamic power saving | Port power OFF | -- | |

[Legends] --: No relevant standards

(Note 1) IS-IS will be supported in the future.
(Note 2) Only Information OAMPDU is supported.
(Note 3) Encrypted communication based on SSL (Secure Socket Layer) is also available.
(Note 4) For more information, see the instruction manual provided on our website.
(Note 5) Only reception is supported.
(Note 6) IEEE 802.1X, MAC-based authentication, and Web authentication are supported.
(Note 7) MAC-based authentication and Web authentication are supported.
(Note 8) To use IPv6 DHCP relay, the optional license OP-DH6R must be used.
(Note 9) Applicable only to the ports on which 10BASE-T, 100BASE-TX, or 1000BASE-T is running.

## 4. Ordering Information

Table 5 shows the ordering information for the AX3640S series.

**Table 5: Ordering Information for the AX3640S Series**

| No. | Model Name | Abbreviated Name | Basic specifications |
|---|---|---|---|
| | | LAN Switch | |
| 1 | AX-3640-24TE-LX | 3CL-24TE | AX3640S-24T light model<br>- Gigabit Ethernet: 24 ports (20 ports for fixed 10/100/1000BASE-T + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br>- Equipped with L3 light software (without OSPF, BGP, IS-IS, or policy-based routing).<br>- SSH supported.<br>- AC power supported<br>Supported in Ver. 11.1 and later |
| 2 | AX-3640-24TE-YX | 3CY-24TE | AX3640S-24T light model<br>- Gigabit Ethernet: 24 ports (20 ports for fixed 10/100/1000BASE-T + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br>- Equipped with L3 light software (without OSPF, BGP, IS-IS, or policy-based routing).<br>- SSH not supported.<br>- AC power supported<br>Supported in Ver. 11.1 and later |
| 3 | AX-3640-24TE-AX | 3CA-24TE | AX3640S-24T advanced model<br>- Gigabit Ethernet: 24 ports (20 ports for fixed 10/100/1000BASE-T + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br>- Equipped with L3 advanced software (with OSPF, BGP, or policy-based routing (Note 1))<br>- SSH supported.<br>- AC power supported<br>Supported in Ver. 11.1 and later |
| 4 | AX-3640-24TE-ZX | 3CZ-24TE | AX3640S-24T advanced mode<br>- Gigabit Ethernet: 24 ports (20 ports for fixed 10/100/1000BASE-T + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br>- Equipped with L3 advanced software (with OSPF, BGP, or policy-based routing (Note 1))<br>- SSH not supported.<br>- AC power supported<br>Supported in Ver. 11.1 and later |
| 5 | AX-3640-24TW-LX | 3CL-24TW | AX3640S-24TW light model (with no power supply unit or fan)<br>- Gigabit Ethernet: 24 ports (20 ports for fixed 10/100/1000BASE-T + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br>- Equipped with L3 light software (without OSPF, BGP, IS-IS, or policy-based routing).<br>- SSH supported.<br>- Power supply unit slot x 2 (hot-swap supported) |
| 6 | AX-3640-24T2XW-LX | 3CL-24T2XW | AX3640S-24T2XW light model (with no power supply unit or fan)<br>- Gigabit Ethernet: 24 ports (20 ports for fixed 10/100/1000BASE-T + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br>- 10-gigabit Ethernet: 2 ports (10GBASE-R (XFP) x 2)<br>- Equipped with L3 light software (without OSPF, BGP, IS-IS, or policy-based routing).<br>- SSH supported.<br>- Power supply unit slot x 2 (hot-swap supported) |
| 7 | AX-3640-48TWE-LX | 3CL-48TV | AX3640S-48TW light model (with no power supply unit or fan)<br>- Gigabit Ethernet: 48 ports (44 ports for fixed 10/100/1000BASE-T + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br>- Equipped with L3 light software (without OSPF, BGP, IS-IS, or policy-based routing).<br>- SSH supported.<br>- Power supply unit slot x 2 (hot-swap supported)<br>Supported in Ver. 11.1 and later |

| No. | Model Name | Abbreviated Name | Basic specifications |
|---|---|---|---|
| 8 | AX-3640-48T2XWE-LX | 3CL-48T2XV | AX3640S-48T2XW light model (with no power supply unit or fan)<br> - Gigabit Ethernet: 48 ports (48 ports for fixed 10/100/1000BASE-T)<br> - 10-gigabit Ethernet: 2 ports (10GBASE-R (XFP) x 2)<br> - Equipped with L3 light software (without OSPF, BGP, IS-IS, or policy-based routing).<br> - SSH supported.<br> - Power supply unit slot x 2 (hot-swap supported)<br>Supported in Ver. 11.1 and later |
| 9 | AX-3640-24SWE-LX | 3CL-24SV | AX3640S-24SW light model (with no power supply unit or fan)<br> - Gigabit Ethernet: 24 ports (20 ports for fixed 1000BASE-X (SFP) + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br> - Equipped with L3 light software (without OSPF, BGP, IS-IS, or policy-based routing).<br> - SSH supported.<br> - Power supply unit slot x 2 (hot-swap supported)<br>Supported in Ver. 11.1 and later |
| 10 | AX-3640-24S2XWE-LX | 3CL-24S2XV | AX3640S-24S2XW light model (with no power supply unit or fan)<br> - Gigabit Ethernet: 24 ports (20 ports for fixed 1000BASE-X (SFP) + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br> - 10-gigabit Ethernet: 2 ports (10GBASE-R(XFP) x 2)<br> - Equipped with L3 light software (without OSPF, BGP, IS-IS, or policy-based routing).<br> - SSH supported.<br> - Power supply unit slot x 2 (hot-swap supported)<br>Supported in Ver. 11.1 and later |
| 11 | AX-3640-24TW-YX | 3CY-24TW | AX3640S-24TW light model (with no power supply unit or fan)<br> - Gigabit Ethernet: 24 ports (20 ports for fixed 10/100/1000BASE-T + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br> - Equipped with L3 light software (without OSPF, BGP, IS-IS, or policy-based routing).<br> - SSH not supported.<br> - Power supply unit slot x 2 (hot-swap supported) |
| 12 | AX-3640-24T2XW-YX | 3CY-24T2XW | AX3640S-24T2XW light model (with no power supply unit or fan)<br> - Gigabit Ethernet: 24 ports (20 ports for fixed 10/100/1000BASE-T + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br> - 10-gigabit Ethernet: 2 ports (10GBASE-R (XFP) x 2)<br> - Equipped with L3 light software (without OSPF, BGP, IS-IS, or policy-based routing).<br> - SSH not supported.<br> - Power supply unit slot x 2 (hot-swap supported) |
| 13 | AX-3640-48TWE-YX | 3CY-48TV | AX3640S-48TW light model (with no power supply unit or fan)<br> - Gigabit Ethernet: 48 ports (44 ports for fixed 10/100/1000BASE-T + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br> - Equipped with L3 light software (without OSPF, BGP, IS-IS, or policy-based routing).<br> - SSH not supported.<br> - Power supply unit slot x 2 (hot-swap supported)<br>Supported in Ver. 11.1 and later |
| 14 | AX-3640-48T2XWE-YX | 3CY-48T2XV | AX3640S-48T2XW light model (with no power supply unit or fan)<br> - Gigabit Ethernet: 48 ports (48 ports for fixed 10/100/1000BASE-T)<br> - 10-gigabit Ethernet: 2 ports (10GBASE-R (XFP) x 2)<br> - Equipped with L3 light software (without OSPF, BGP, IS-IS, or policy-based routing).<br> - SSH not supported.<br> - Power supply unit slot x 2 (hot-swap supported)<br>Supported in Ver. 11.1 and later |
| 15 | AX-3640-24SWE-YX | 3CY-24SV | AX3640S-24SW light model (with no power supply unit or fan)<br> - Gigabit Ethernet: 24 ports (20 ports for fixed 1000BASE-X (SFP) + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br> - Equipped with L3 light software (without OSPF, BGP, IS-IS, or policy-based routing).<br> - SSH not supported.<br> - Power supply unit slot x 2 (hot-swap supported)<br>Supported in Ver. 11.1 and later |

| No. | Model Name | Abbreviated Name | Basic specifications |
|---|---|---|---|
| 16 | AX-3640-24S2XWE-YX | 3CY-24S2XV | AX3640S-24S2XW light model (with no power supply unit or fan)<br>- Gigabit Ethernet: 24 ports (20 ports for fixed 1000BASE-X (SFP) + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br>- 10-gigabit Ethernet: 2 ports (10GBASE-R(XFP) x 2)<br>- Equipped with L3 light software (without OSPF, BGP, IS-IS, or policy-based routing).<br>- SSH not supported.<br>- Power supply unit slot x 2 (hot-swap supported)<br>Supported in Ver. 11.1 and later |
| 17 | AX-3640-24TW-AX | 3CA-24TW | AX3640S-24TW advanced model (with no power supply unit or fan)<br>- Gigabit Ethernet: 24 ports (20 ports for fixed 10/100/1000BASE-T + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br>- Equipped with L3 advanced software (with OSPF, BGP, or policy-based routing (Note 1))<br>- SSH supported.<br>- Power supply unit slot x 2 (hot-swap supported) |
| 18 | AX-3640-24T2XW-AX | 3CA-24T2XW | AX3640S-24T2XW advanced model (with no power supply unit or fan)<br>- Gigabit Ethernet: 24 ports (20 ports for fixed 10/100/1000BASE-T + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br>- 10-gigabit Ethernet: 2 ports (10GBASE-R (XFP) x 2)<br>- Equipped with L3 advanced software (with OSPF, BGP, or policy-based routing (Note 1))<br>- SSH supported.<br>- Power supply unit slot x 2 (hot-swap supported) |
| 19 | AX-3640-48TWE-AX | 3CA-48TV | AX3640S-48TW advanced model (with no power supply unit or fan)<br>- Gigabit Ethernet: 48 ports (44 ports for fixed 10/100/1000BASE-T + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br>- Equipped with L3 advanced software (with OSPF, BGP, or policy-based routing (Note 1))<br>- SSH supported.<br>- Power supply unit slot x 2 (hot-swap supported)<br>Supported in Ver. 11.1 and later |
| 20 | AX-3640-48T2XWE-AX | 3CA-48T2XV | AX3640S-48T2XW advanced model (with no power supply unit or fan)<br>- Gigabit Ethernet: 48 ports (48 ports for fixed 10/100/1000BASE-T)<br>- 10-gigabit Ethernet: 2 ports (10GBASE-R (XFP) x 2)<br>- Equipped with L3 advanced software (with OSPF, BGP, or policy-based routing (Note 1))<br>- SSH supported.<br>- Power supply unit slot x 2 (hot-swap supported)<br>Supported in Ver. 11.1 and later |
| 21 | AX-3640-24SWE-AX | 3CA-24SV | AX3640S-24SW advanced model (with no power supply unit or fan)<br>- Gigabit Ethernet: 24 ports (20 ports for fixed 1000BASE-X (SFP) + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br>- Equipped with L3 advanced software (with OSPF, BGP, or policy-based routing (Note 1))<br>- SSH supported.<br>- Power supply unit slot x 2 (hot-swap supported)<br>Supported in Ver. 11.1 and later |
| 22 | AX-3640-24S2XWE-AX | 3CA-24S2XV | AX3640S-24S2XW advanced model (with no power supply unit or fan)<br>- Gigabit Ethernet: 24 ports (20 ports for fixed 1000BASE-X (SFP) + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br>- 10-gigabit Ethernet: 2 ports (10GBASE-R (XFP) x 2)<br>- Equipped with L3 advanced software (with OSPF, BGP, or policy-based routing (Note 1))<br>- SSH supported.<br>- Power supply unit slot x 2 (hot-swap supported)<br>Supported in Ver. 11.1 and later |
| 23 | AX-3640-24TW-ZX | 3CZ-24TW | AX3640S-24TW advanced model (with no power supply unit or fan)<br>- Gigabit Ethernet: 24 ports (20 ports for fixed 10/100/1000BASE-T + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br>- Equipped with L3 advanced software (with OSPF, BGP, or policy-based routing (Note 1))<br>- SSH not supported.<br>- Power supply unit slot x 2 (hot-swap supported) |

| No. | Model Name | Abbreviated Name | Basic specifications |
|---|---|---|---|
| 24 | AX-3640-24T2XW-ZX | 3CZ-24T2XW | AX3640S-24T2XW advanced model (with no power supply unit or fan)<br> - Gigabit Ethernet: 24 ports (20 ports for fixed 10/100/1000BASE-T + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br> - 10-gigabit Ethernet: 2 ports (10GBASE-R (XFP) x 2)<br> - Equipped with L3 advanced software (with OSPF, BGP, or policy-based routing (Note 1))<br> - SSH not supported.<br> - Power supply unit slot x 2 (hot-swap supported) |
| 25 | AX-3640-48TWE-ZX | 3CZ-48TV | AX3640S-48TW advanced model (with no power supply unit or fan)<br> - Gigabit Ethernet: 48 ports (44 ports for fixed 10/100/1000BASE-T + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br> - Equipped with L3 advanced software (with OSPF, BGP, or policy-based routing (Note 1))<br> - SSH not supported.<br> - Power supply unit slot x 2 (hot-swap supported)<br>Supported in Ver. 11.1 and later |
| 26 | AX-3640-48T2XWE-ZX | 3CZ-48T2XV | AX3640S-48T2XW advanced model (with no power supply unit or fan)<br> - Gigabit Ethernet: 48 ports (48 ports for fixed 10/100/1000BASE-T)<br> - 10-gigabit Ethernet: 2 ports (10GBASE-R (XFP) x 2)<br> - Equipped with L3 advanced software (with OSPF, BGP, or policy-based routing (Note 1))<br> - SSH not supported.<br> - Power supply unit slot x 2 (hot-swap supported)<br>Supported in Ver. 11.1 and later |
| 27 | AX-3640-24SWE-ZX | 3CZ-24SV | AX3640S-24SW advanced model (with no power supply unit or fan)<br> - Gigabit Ethernet: 24 ports (20 ports for fixed 1000BASE-X (SFP) + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br> - Equipped with L3 advanced software (with OSPF, BGP, or policy-based routing (Note 1))<br> - SSH not supported.<br> - Power supply unit slot x 2 (hot-swap supported)<br>Supported in Ver. 11.1 and later |
| 28 | AX-3640-24S2XWE-ZX | 3CZ-24S2XV | AX3640S-24S2XW advanced model (with no power supply unit or fan)<br> - Gigabit Ethernet: 24 ports (20 ports for fixed 1000BASE-X (SFP) + 4 ports for either 10/100/1000BASE-T or 1000BASE-X (SFP))<br> - 10-gigabit Ethernet: 2 ports (10GBASE-R (XFP) x 2)<br> - Equipped with L3 advanced software (with OSPF, BGP, or policy-based routing (Note 1))<br> - SSH not supported.<br> - Power supply unit slot x 2 (hot-swap supported)<br>Supported in Ver. 11.1 and later |
| Common Option |
| 1 | AX-F0110-SD1GX | SD1G | SD memory card (1GB) (Note 2) |
| 2 | AX-F2430-PSA01X | PS-A01 | 100/200 V AC power supply for the AX3630S/AX3640S with hot-swap support |
| 3 | AX-F2430-PSD01X | PS-D01 | -48 V DC power supply for the AX3630S/AX3640S with hot-swap support |
| 4 | AX-F2430-FAN01X | FAN-01 | Fan unit for the AX3630S/AX3640S with hot-swap support |
| Optical Transceiver |
| 1 | AX-F6244-3S1TX | SFP-T | SFP for 10BASE-T/100BASE-TX/1000BASE-T (UTP: 100 m)<br>Specifically designed for AX3640S-24SW and AX3640S-24S2XW (Note 3). |
| 2 | AX-F6244-3S1SX | SFP-SX | SFP for 1000BASE-SX (MMF: 2 m to 550 m) |
| 3 | AX-F6244-3S1S2X | SFP-SX2 | SFP for 1000BASE-SX2 (MMF: 2 m to 2 km) |
| 4 | AX-F6244-3S1LX | SFP-LX | SFP for 1000BASE-LX (MMF: 2 m to 550 m) (SMF: 2 m to 5 km) |
| 5 | AX-F6244-3SB1UX | SFP-BX1U | SFP for 1000BASE-BX10-U, with single-core, bidirectional, single-mode optical fibers (Upstream) (SMF: 0.5 m to 10 km) |
| 6 | AX-F6244-3SB1DX | SFP-BX1D | SFP for 1000BASE-BX10-D, with single-core, bidirectional, single-mode optical fibers (Downstream) (SMF: 0.5 m to 10 km) |
| 7 | AX-F6244-3SB4UX | SFP-BX4U | SFP for 1000BASE-BX40-U, with single-core, bidirectional, single-mode optical fibers (Upstream) (SMF: 0.5 m to 40 km) |
| 8 | AX-F6244-3SB4DX | SFP-BX4D | SFP for 1000BASE-BX40-D, with single-core, bidirectional, single-mode optical fibers (Downstream) (SMF: 0.5 m to 40 km) |
| 9 | AX-F6244-3S1LHX | SFP-LH | SFP for 1000BASE-LH (SMF: 2 m to 70 km) |
| 10 | AX-F6244-3S1FX | SFP-FX | SFP for 100BASE-FX (MMF: 2 m to 2 km)<br>Specifically designed for AX3640S-24SW and AX3640S-24S2XW (Note 3).<br>Supported in Ver. 11.1.C and later |
| 11 | AX-F6244-3X1SX | XFP-SR | XFP for 10GBASE-SR (MMF: 2 m to 300 m) |
| 12 | AX-F6244-3X1LX | XFP-LR | XFP for 10GBASE-LR (SMF: 2 m to 10 km) |
| 13 | AX-F6244-3X1EX | XFP-ER | XFP for 10GBASE-ER (SMF: 2 m to 40 km) |
| 14 | AX-F6244-3X1ZX | XFP-ZR | XFP for 10GBASE-ZR (SMF: 2 m to 80 km) |

| No. | Model Name | Abbreviated Name | Basic specifications |
|-----|-----------|------------------|---------------------|
| | | | Software |
| 1 | AX-P3640-32AUX | OS-L3A-U | L3 functionality upgrade software for AX3640S (SSH supported)<br> - Software for upgrading the L3 light software to the L3 advanced software |
| 2 | AX-P3640-31AUX | OS-L3A-AU | L3 functionality upgrade software for AX3640S (SSH not supported)<br> - Software for upgrading the L3 light software to the L3 advanced software |
| 3 | AX-P3630-32VX | OS-L3-V | SSH functionality upgrade software for the AX3640S<br> - To upgrade software without SSH to software with SSH |
| 4 | AX-P3630-F9X | OP-DH6R | IPv6 DHCP relay functionality license for AX3630S/AX3640S/AX3650S/AX3800S<br>Supported in Ver. 11.4 and later |

(Note 1) IS-IS will be supported in the future. Policy-based routing is supported in Ver. 11.7 and later.

(Note 2) The memory card does not include software such as switching software or scripts.

(Note 3) Only fixed 1000BASE-X (SFP) ports are supported.

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