ALAXALA AX8600R
Quick Start Guide

AX86R-Q001-10X

Reading and storing this guide

- Before you use the equipment, carefully read the guide and make sure that you understand all safety precautions.

- After reading this guide, keep it in a convenient place for easy reference.
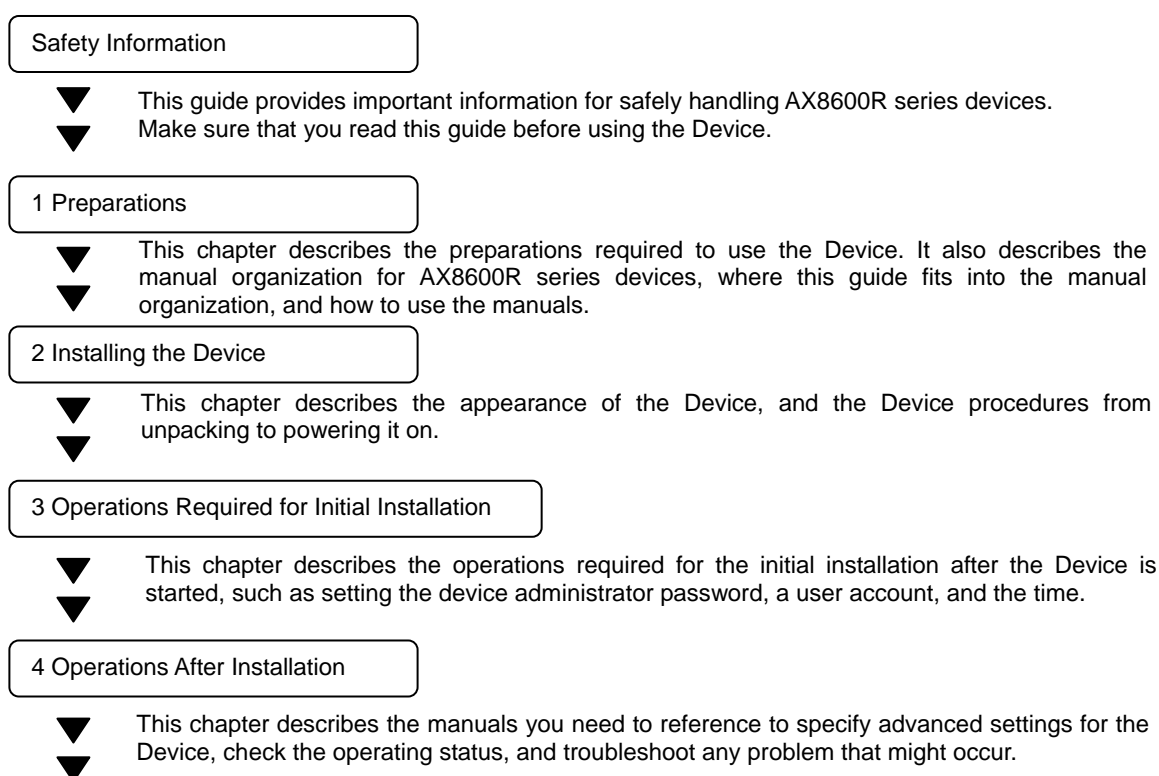
AlaxalA

Preface

Thank you for choosing this AX8600R series device (ALAXALA terabit router).

This guide describes the procedures for the AX8600R series device, from unpacking to the basic configurations.

In addition, this guide also explains how to use the AX8600R series manuals to ensure stable operation of the Device.

■ Guide overview

Set up your device by referring to the following flow of operations.

> **Safety Information**
>
> ▼ This guide provides important information for safely handling AX8600R series devices.
> ▼ Make sure that you read this guide before using the Device.
>
> **1 Preparations**
>
> ▼ This chapter describes the preparations required to use the Device. It also describes the
> ▼ manual organization for AX8600R series devices, where this guide fits into the manual
> organization, and how to use the manuals.
>
> **2 Installing the Device**
>
> ▼ This chapter describes the appearance of the Device, and the Device procedures from
> ▼ unpacking to powering it on.
>
> **3 Operations Required for Initial Installation**
>
> ▼ This chapter describes the operations required for the initial installation after the Device is
> ▼ started, such as setting the device administrator password, a user account, and the time.
>
> **4 Operations After Installation**
>
> ▼ This chapter describes the manuals you need to reference to specify advanced settings for the
> ▼ Device, check the operating status, and troubleshoot any problem that might occur.

■ Intended readers

This manual is intended for the technical personnel responsible for setting up and handling AX8600R series devices. Readers are therefore required to have knowledge of electric circuits, wire connections, and network systems.

■ Conventions: The terms "Device" and "device"

The term Device (upper-case "D") is an abbreviation for the following:
● AX8600R series device

The term device (lower-case "d") might refer to a Device, another type of device from the current vendor, or a device from another vendor. The context decides the meaning.

Safety Information

The following indications are used as headings for the notes regarding safety. Phrases such as WARNING, CAUTION, and NOTICE are used in combination with the safety precaution symbol to indicate different levels of precautions.

⚠	This symbol is the safety precaution symbol. It is used to call attention to potential dangers to the user. Follow the instructions preceded by this indication to avoid possible death or injury.
⚠ **WARNING**	This indication is used to provide information on potential dangers that might cause death or serious injury.
⚠ **CAUTION**	This indication is used to provide information on potential dangers that might cause minor to moderate injury
NOTICE	This indication is used to provide information on dangers that might cause damage to the Device or nearby property.
NOTE	This indication is used to provide supplementary information that, if ignored, will not result in physical injury or serious damage to the Device.

Indication example 1: Caution for electric shock

The graphic symbol of a triangle (△) indicates the need of caution, and the image in the symbol indicates the actual content of danger such electric shock.

Indication example 2: Disassembly prohibited

The graphic symbol of a circle with slash (⊘) indicates prohibition, and the image in the symbol indicates the prohibited action (for example, disassembly).
This symbol indicates a general prohibition if there is no image inside it.

Indication example 3: Unplugging the power cable

The black circle symbol (●) indicates a mandatory instruction, and the image indicating the action (for example, unplugging the power cable) is inside the symbol.
This symbol indicates general instructions if there is an exclamation mark (❗) inside it.

General notes about safety

Carefully read the following safety precautions and make sure that you fully understand them.

● Keep this guide handy after reading it, so that it is available for later reference.

● Operate the Device according to the instructions and procedures provided in this guide.

● Heed all the warnings and cautions in this product and in the manuals.
   Failure to do so might result in injury or damage to your property including this product.

Unauthorized operations
Do not attempt to perform any operations that are not described in these manuals.
If there is a problem with this product, turn off the power, unplug the power cable, and contact maintenance personnel.

Using common sense
The warnings and cautions provided on this product and in the manuals have been selected after careful consideration. Nevertheless, there is always the possibility of the unexpected occurring. Therefore, while using the Device, stay alert and use common sense in addition to all following instructions.

⚠ WARNING

■ If anything seems wrong, immediately turn off the power.

If smoke or an unusual smell is coming from the Device, or if liquid is spilled into the Device or a foreign object falls into the Device, immediately turn off power to the Device as described below. Continuing operation might result in a fire or electric shock.

● If the Device has an AC power supply unit, turn off the Device, and then unplug the power cable.

● If the Device has a DC power supply unit, turn off the Device, and then turn off the power facility circuit breaker. This is required for terminal connections.

■ Do not remove the Device cover.

Do not remove the Device cover. Doing so might result in electric shock.

■ Do not allow any foreign objects to get into the Device

Do not insert or drop any foreign objects, such as anything metallic or flammable, through the Device's ventilation slots. Doing so might result in a fire or electric shock.

■Do not repair, modify, or disassemble the Device.

Do not repair, modify, or disassemble the Device. Doing so might result in electric shock, a fire, or burns. Touching anything inside the power unit is especially dangerous because the unit includes a large amount of high-voltage parts.

■ Do not subject the Device to shocks.

Do not subject the Device to excessive shocks, such as dropping it or hitting it with something. In the event that the Device is dropped or any of its components damaged, turn off the power, unplug the power cable, and contact maintenance personnel. Continuing operation might result in a fire or electric shock.

■ Do not place anything on the Device.

Do not place any metallic object such as a small pin or a paper clip or any container with a liquid, such as a vase or a flower pot, on the Device. Liquid or metallic objects falling into the Device might result in a fire or electric shock.
Also, do not place any objects, including optional modules, on the Device. The optional module or similar part might fall off, resulting in injury. Also, the load of an object placed on the Device might result in a malfunction in the Device.

■ Use the Device only with the indicated power supply setting.

Do not use the Device at any voltage other than the indicated voltage. Inappropriate voltage might cause damage, overheating, and degradation inside the Device, resulting in a fire or electric shock. Use an outlet with the appropriate power voltage and socket shape. Using an inappropriate outlet might result in electric shock.

⚠ WARNING

■ **Ensure that the capacity for incoming current to the distribution board is greater than the operating current of the power facility circuit breaker.**

Ensure that the capacity for incoming current to the distribution board is greater than the operating current of the power facility circuit breaker. If it is not, the power facility circuit breaker might not operate properly in the event of a failure, which might result in a fire.

■ **Ground the Device.**

When the Device is connected to a DC power supply unit, always connect the ground terminal for proper grounding. Failure to do so might not only result in electric shock, but it might also introduce unwanted electrical noise that might cause a Device failure.

■ **Connecting and disconnecting a DC power cable must be performed by a trained technician or maintenance personnel.**

Connecting and disconnecting a DC power cable must be performed by a trained technician or maintenance personnel. Terminal connections are required for connection of the DC power cable. Incorrect handling of the DC power cable might result in a fire or electric shock.

■ **Turn off the circuit breaker on the power facility before connecting or disconnecting the DC power cable.**

Turn off the circuit breaker on the power facility before connecting or disconnecting the DC power cable. If you perform an operation with the circuit breaker turned on, it might result in electric shock.

■ **Place a terminal cover over the 0 V and −48 V terminals of DC power cables**

When using a DC power cable, place a terminal cover over the 0 V and −48 V terminals. Using the terminals without a terminal cover might result in electric shock.

■ **When using a DC power supply unit, do not use the terminal board with its cover removed.**

When using a DC power supply unit, place a cover over the terminal board after connecting the power cable. Using the terminal board without a cover might result in electric shock.

⚠ WARNING

■ Installing and carrying the main unit must be performed by trained personnel or a professional carrier.

The maximum weight of the main units is as shown in the table below. Installing and carrying the main unit must be performed by trained personnel or a professional carrier. If anyone other than those mentioned above performs these tasks, the main unit might fall, resulting in serious injury.
Use a handling device such as a hand lifter when installing or carrying the main unit. Carrying the main unit without using a handling device might cause the main unit to fall, resulting in serious injury.

Maximum weight of the main units

Model	Weight
AX8616R	135kg
AX8632R	220kg

■ Handle power cables carefully.

• Use a designated power cable, and keep the notes below in mind while using it. Incorrect usage of the power cable might cause the copper wire to be exposed, a short circuit, or the wire to partially break, resulting in electric shock or a fire.

- Do not place any objects on the cable.
- Do not pull on the cable.
- Do not apply excessive pressure to the cable.
- Do not bend the cable.
- Do not twist the cable.
- Do not modify the cable.
- Do not place the cable near a heat-generating apparatus.
- Do not heat the cable.
- Do not bundle the cables.
- Do not fix the cable by using staples or in any other similar manner.
- Do not use a damaged cable.
- Do not continuously expose the cable to ultraviolet rays or strong visible rays of light.
- Do not expose the cable to alkali, acids, oils, or humidity.
- Do not use the cable in a high-temperature environment.
- Use the cable within the rated range.
- Do not use the cable for other devices.
- Hold the plug when unplugging the power cable.
- Do not touch the power plug with a wet hand.

• Do not cover the power cable. If the power cable is covered by a carpet, it is easy to forget that the cable is there and to place something heavy on it.

• Do not place anything near the outlet so that you can easily unplug the power cable when necessary.

■ Be aware of connection failures or arc tracking in the power plug.

Follow the instructions described below. If you do not follow these instructions, the power plug might cause overheating because of arc tracking or a connection failure, resulting in a fire.

• Insert the power plug completely so that the prongs are not exposed.

• Make sure that the power plug is free of dust or water drops before inserting it. If there is any dust or water on the plug, wipe it off before you insert the plug in the outlet.

• Make sure that the outlet is not loose when you insert the power plug.

• Construction on the outlet must be performed by a technician with the appropriate knowledge.

⚠ WARNING

■ **Do not overload the power outlet.**

Do not overload the power outlet by connecting multiple power plugs to the same outlet. Overloading the outlet causes the codes and outlet to overheat, and might result in a fire or in the power facility circuit breaker tripping due to excessive power used. This might affect other equipment.

■ **To turn off the power, turn off all circuit breakers of the Device.**

The Device has multiple input power supplies. To turn off the power, turn off all circuit breakers of the Device.

■ **Adding or replacing a module must be performed by a trained technician or maintenance personnel.**

Adding or replacing optional modules must be performed by a trained technician or maintenance personnel.
Replacing a power input unit requires the power cables to be connected and disconnected. If anyone other than those mentioned above performs these tasks incorrectly, a fire, electric shock, or a device failure might occur.
In addition, using optional modules incorrectly might result in injury or a device failure.

■ **When pressing the button of the basic control unit, do not use anything with a fragile tip, or anything that might become caught in the Device, such as a pin or paper clip.**

When pressing the button located behind the front panel of the basic control unit, do not use anything with a fragile tip, or anything that might become caught in the Device, such as a pin or paper clip. Doing so might result in a fire or electric shock.

■ **Disconnect the power cable before replacing power input units.**

When replacing a power input unit, disconnect the power cable from the power input unit to be replaced. If the power cable is connected and the circuit breaker on the power input unit is turned off, power is still supplied to some circuits. Because of this, if you replace a power input unit with the power cable connected, a fire or electric shock might occur. Make sure that you unplug the power cable from the power input unit to be replaced.

■ **Do not use an air duster near a flame.**

When cleaning the optical connectors, do not use an air duster that contains flammable gas near a flame. Doing so might result in a fire.

■ **Storing the packaging bags**

Keep the packaging bags for the Device away from children. If a child puts the packaging bag over his or her head, he or she might suffocate.

⚠ CAUTION

■ **Do not install the Device in a dusty or humid location.**

Do not install the Device in a dusty or humid location. Doing so might result in a fire or electric shock.

■ **If you move the Device to a location that has a significant temperature difference from the previous location, do not use the Device immediately after you move it.**

A significant difference in temperature might cause condensation on the surface or inside the Device. Using the Device while condensation is on the surface or inside the Device might result in a fire or electric shock. After moving the Device between two locations that have a significant temperature difference, let the Device stand a few hours before using it. Do not turn on the power immediately. Leave the Device for a few hours in the place where you will use it so that the temperature inside and outside the Device can equalize.

■ **Do not stack Devices on top of one another.**

Do not stack Devices on top of one another. Doing so might damage the Device. Furthermore, the Device might fall or lose its balance, resulting in injury.

■ **Do not step on the Device, lean against it, or place anything on it.**

Do not step on the Device, lean against it, or place anything on it. Doing so might damage the Device. Furthermore, the Device might fall or lose its balance, resulting in injury.

■ **When mounting the Device in a rack, use guide rails.**

The rack mounting brackets for the Device are for securing the main unit to the rack, not for supporting the weight of the main unit. Use guide rails. Note that you need to use the guide rails that are supplied with the rack and that can support the weight of the main unit (when all optional modules are installed).

■ **Do not block the ventilation slots.**

The ventilation slots of the Device prevent temperature increases inside the Device. Do not block the ventilation slots by placing anything on or against them. Doing so might cause the temperature inside the Device to increase, resulting in smoke or a failure. Leave at least 100 mm around the ventilation slots free from obstruction.
Periodically check and clean the ventilation slots so that the slots are always free of dust.

■ **Do not allow hair or objects near the ventilation slots.**

Cooling fan units are mounted in the Device. Do not allow anything near the ventilation slots. Doing so causes heat to accumulate inside the Device and might cause a failure. Do not allow hair or other objects near the ventilation slots. They might be sucked into the Device, resulting in injury.

⚠ CAUTION

■ **When moving the Device, do not hold the handle of an optional module.**

When moving the Device, do not hold the handle of the fan unit or power input unit, or the lever of the power supply unit. The handle or lever might come off, resulting in the Device falling and possibly causing injury. Additionally, the fan unit, power input unit, or power supply unit might become damaged, resulting in a fire or electric shock.

■ **When moving the Device, unplug all cables.**

Before moving the Device, make sure that you turn it off and unplug all cables. Failure to do so might cause the Device or cable to become damaged, resulting in a fire or electric shock.

■ **Do not drop optional modules.**

- Handle the optional modules with care to avoid dropping them. Dropping them might cause injury.
- The table below lists the weight of each optional module. When removing an optional module from the Device, hold the module tightly. Pulling it carelessly from a Device might cause it to fall, resulting in injury.

Weight of optional modules

Type	Weight
Power supply unit	6.1 kg
Basic control unit	3.0 kg
Packet routing unit (when a network interface board is mounted)	9.2 kg
Fan unit	1.7 kg

■ **Do not touch the inside of the Device with your hands.**

Do not carelessly put your hands inside the Device. The frame and components might cause injury.

■ **Be careful of heat when removing a power supply unit.**

The rear side of the power supply unit might be hot. Do not touch areas that are heated when you replace the power supply unit. Doing so might result in burns.

■ **Be careful of heat when removing a network interface board.**

Some components mounted on a network interface board might be hot. Do not touch the mounted components. Doing so might result in burns.

⚠ CAUTION

■ **Do not touch the SFP-T transceiver during operation or just after operation has stopped.**

During operation and when a link is being established, the temperature of the SFP-T transceiver can rise to 65°C. Do not touch the SFP-T transceiver while it is operating and just after it has stopped. Doing so could result in burns.

Caution: Hot
(During operation, all sides are very hot.)
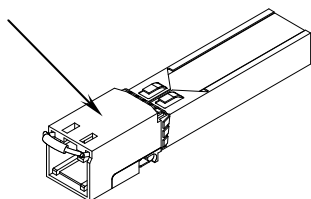
When you remove the SFP-T transceiver, use the procedure below. Failure to do so could result in burns.
- To remove the SFP-T transceiver while the Switch is on, execute the `inactive` command, and then wait 5 minutes before removing the SFP-T transceiver.
- To remove the SFP-T transceiver while the Switch is off, turn off the Switch, and then wait 5 minutes before removing the SFP-T transceiver.

■ **Do not touch the Device directly if you have a metal allergy.**

The Device is coated with zinc, nickel, gold, and other elements. Do not touch the Device directly if you have an allergic reaction to these metals. Doing so might cause eczema or skin irritation.

■ **Avoid looking directly at laser beams.**

Laser devices such as the SFP or SFP+ modules and CFP module contain the parts to generate the laser beams. Do not disassemble or modify the laser device. Also, do not look inside the laser device. You might damage or lose your eyesight.
(Some laser beams are invisible.)
The following indications are for network interface boards that use laser beams.

CLASS 1 LASER
PRODUCT

LASER RADIATION
DO NOT VIEW
WITH OPTICAL INSTRUMENTS
CLASS 1M LASER PRODUCT

■ **Never use the Device or optional modules for purposes other than the intended use.**

Use the Device and the optional module as a router only. Do not use them for other purposes such as a step-ladder or bookends. The Device or optional module might break or fall over, resulting in injury or damage to the Device or optional module.

⚠ CAUTION

■ Lithium battery

The Device has a lithium battery for the real-time clock. Do not replace the lithium battery of the Device. Keep the points below in mind. Incorrect handling of the lithium battery might cause heat generation, rupture, or ignition, resulting in injury.

- Do not charge the battery.
- Do not short circuit the battery.
- Do not disassemble the battery.
- Do not heat the battery.
- Do not modify the battery.
- Do not throw the battery into the fire.
- Do not allow the battery to become wet.

■ Cleaning

Remove dust on and around the Device regularly. In addition to possibly causing the Device to stop, accumulated dust might result in a fire or electric shock.

NOTICE

■ **When the ACC LED is lit, do not remove the memory card or turn off the power.**

When the ACC LED on the basic control unit is lit, the memory card is being accessed. When a memory card is being accessed, do not remove the memory card or turn off the power. Doing so might damage the memory card.

In addition, some commands require a certain amount of time after being entered to finish accessing the card. Make sure that the memory card is no longer being accessed before removing the card or turning off the power.

■ **Handle memory cards carefully.**

• When inserting a memory card, do not push the card too strongly or flick it with your finger. When removing a memory card, do not forcibly pull out the card if it is locked. Doing so might damage the memory card slot connector.

• When moving the main unit, remove any memory cards. If a memory card is subjected to excessive force when the Device is moved, the connector of the memory card slot might be damaged.

■ **Do not attach any labels to a transceiver.**

The transceivers have labels to certify that they are standard products of the manufacturer or ALAXALA Networks Corporation. However, such labels are attached where they do not interfere with heat dissipation from the transceiver or with the mechanism that prevents the transceiver from coming loose from the cage.

Attaching a label to a location that interferes with these functions might cause a malfunction in the transceiver or damage to the network interface boards.

■ **Do not touch the connection terminals.**

Do not touch the connecting terminals by hand or with metal, or insert objects such as a wire to short circuit the terminal. Doing so might result in smoke or a connection failure.

■ **Ensure that voltage drop does not occur in the power facility due to an inrush current.**

Turning on the Device causes an inrush current. Ensure that voltage drop does not occur in the power facility due to the inrush current. Voltage drops affect not only the Device, but also the devices connected to the same power facility.

■ **Turn off the circuit breaker on the power input unit before connecting or disconnecting the power cable.**

Before connecting or disconnecting a power cable, turn off the circuit breaker of the target power input unit.

■ **When carrying or packing the Device and an optional module, wear a wrist strap to protect against static electricity.**

Be sure to wear an antistatic wrist strap. If you handle the Device and an optional module without wearing an antistatic wrist strap, you might damage them with static electricity.

NOTICE

■ **When removing optional modules, attach blank panels.**

Attach a blank panel to a slot where an optional module is not mounted. If you use the Device without attaching a blank panel, airflow through the Device cannot be maintained. If airflow is not maintained, the temperature inside the Device rises, resulting in failures. In addition, radio interference generated by the Device might affect other devices, or radio interference generated by other devices might affect the Device and cause a malfunction.

■ **Before removing an optional module, loosen the screws completely.**

The levers are used to remove basic control units, switch fabric units, packet routing units, or network interface boards.
If the screws are not loosened completely, the optional module might be damaged when the levers are opened.

■ **Attach dust covers to the unused interface ports.**

If dust covers are provided with the network interface board, use them to cover the unused interface ports. Dust in the interface port might result in a failure.

■ **Install the power input units to all the power input unit slots.**

When using the Device, install the power input units to all the power input unit slots. If you use the Device without connecting power input units, radio interference generated by the Device might affect other devices, or radio interference generated by other devices might affect the Device and cause a malfunction.

■ **When carrying or packing an optional module, handle it carefully.**

Do not touch the mounted components, the soldered surface, or the connection terminals when carrying or packing an optional module such as fan unit, power input unit, power supply unit, basic control unit, switch fabric unit, packet routing unit, network interface board, memory card, or transceiver. Also, when storing a module, use an antistatic bag.

■ **Handle the interface cables carefully.**

- Arrange the cables carefully so that no one will pull on or trip over the cables. Pulling on or tripping over the cables might result in injury or malfunction of the connected devices.

- Do not place anything heavy on the cables. Also, do not place the cables near a heat-generating apparatus. The heat might damage the cable coating, resulting in a malfunction of the connected devices.

■ **Check the Device usage environment.**

Use the Device in an environment that satisfies the installation requirements. For example, if you place the Device in direct sunlight or near a heater or other heat-generating device, the temperature inside the Device will rise, resulting in a malfunction of the Device.

NOTICE

◯ ■ **Keep the Device away from magnetism.**

Keep the Device away from anything that generates magnetism such as magnets or audio speakers.
Keeping the Device near magnetism might result in a malfunction of the Device.

◯ ■ **Do not use a TV or a radio near the Device.**

Placing the Device near a TV or a radio might affect both devices. If you hear noise on the TV or radio, do the following:
- Place the Device as far away as possible from the TV or radio.
- Adjust the orientation of the TV or radio antenna.
- Use separate outlets.

◯ ■ **Do not place the Device where it will be exposed to hydrogen sulfide or salt.**

Placing the Device in an area where sulfides are present, such as a hot-springs area, or in an area with salty air, such as along a coast, might shorten the life of the Device.

❗ ■ **Protect the Device when using liquids that generate mist.**

Completely cover the Device with plastic bags or other protective materials when using liquids that generate mist, such as pesticides. If liquids enter inside the Device, it might result in a failure.
In addition, turn off the Device beforehand.

❗ ■ **Use care when handling an air duster.**
- Use an air duster specially designed for cleaning optical connectors. Using another type of air duster might cause the ferrule tip to become dirty.
- Keep the nozzle or container of the air duster from coming into contact with the ferrule tip. Contact might result in a failure.

❗ ■ **Use care when handling an optical connector cleaner.**
- Always use a dedicated optical connector cleaner. If you use another type of cleaner, the ferrule tip might become dirty.
- Do not apply excessive pressure when cleaning. Doing so might damage the ferrule tip.

❗ ■ **Transporting the Device**

Always pack the Device thoroughly when transporting. Pay attention to the up and down direction of the Device when packing it.
Failure to pack the Device or transporting the Device upside down might result in a malfunction of the Device.

NOTICE

■ **Maintenance**

Clean any dirty areas on the exterior of the device with a clean, dry cloth, or a cloth damp with (but not soaked with) water or a neutral detergent. Do not use volatile organic solutions (such as benzene or paint thinner), chemicals, chemically treated cloths, or pesticides because these substances might deform, discolor, or damage the device.

■ **If the Device will not be used for a long time**

For safety reasons, unplug the power cable from the outlet if the Device will not be used for a long time.

■ **Disposing of the Device**

When disposing of the Device, you should either follow local ordinances or regulations, or contact your local waste disposal and treatment facility.
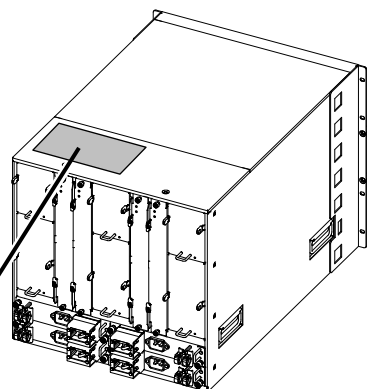
Warning Labels

The warning labels that are attached to parts of the devices as shown in the figures below.

Read through the contents of the labels before handling the Device.
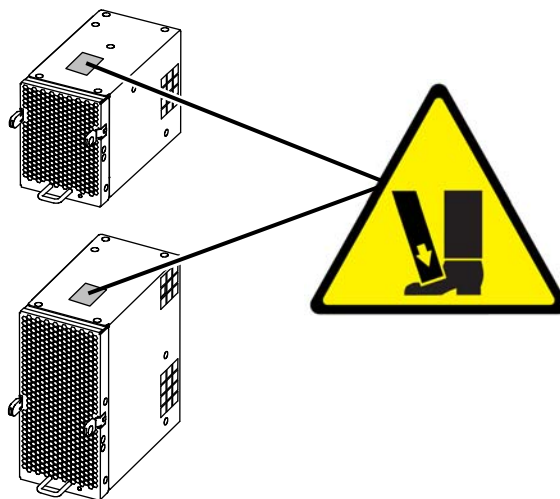Do not remove the labels or allow them to become soiled.
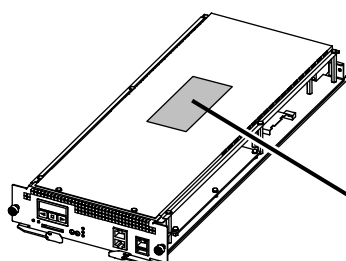

The Device (rear side)

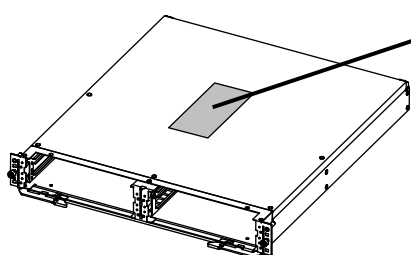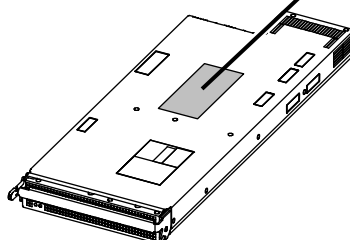| ⚠ 警告	⚠ WARNING	⚠ WARNUNG	⚠ AVERTISSEMENT	⚠ 警告	⚠ 경고
重量物注意 質量：最大 135 kg けがをする恐れがあります。 装置を持ち上げるときは訓練を受けた人が作業を行ってください。 リフター等のハンドリング装置を使用してください。 詳細はサービスマニュアルを見てください。	Heavy object. Mass:135kg (298lbs) at maximum. Risk of injury. When lifting this equipment, perform work by trained personnel only. Use lift or similar handling device. See instruction manual for details.	Schweres Objekt. Masse:135kg (298lbs) maximal. Verletzungsgefahr. Beim Heben dieser Ausrüstung die Arbeit nur mit qualifiziertem Personal durchführen. Aufzug oder ähnliche Fördereinrichtung benutzen. Zwecks Einzelheiten siehe Bedienungsanleitung.	Objets lourds. Poids: 135kg (298lbs) maximum. Risque de blessures. Soulever cet équipement uniquement du personnel formé. Utiliser un élévateur ou un dispositif de manutention similaire. Voir le mode d'emploi pour les détails.	重物。 质量：最大135 公斤。 有受伤的危险。 要抬起此设备时，请仅由经过训练的人员抬。 请使用起重机等装置。 详细说明请参见维修说明书。	중량물 주의. 질량: 최대 135 kg. 다칠 염려가 있습니다. 장치를 들어 올일 때는 훈련을 받은 사람이 작업해 주시기 바랍니다. 리프트 등의 핸들링 장치를 사용해 주시기 바랍니다. 자세한 것은 서비스 안내서를 보시기 바랍니다.
⚠ 警告	⚠ WARNING	⚠ WARNUNG	⚠ AVERTISSEMENT	⚠ 警告	⚠ 경고
感電注意 複数の入力電源が供給されているため、感電又は火傷による死亡・けがの危険があります。 装置の電源を切断する場合は、本装置の全ての電源スイッチまたはブレーカをOFFにして下さい。	Risk of electric shock. This equipment has multiple power sources, and failure to disconnect all of them can cause death or serious injury due to electric shock or burns. When disconnecting power to the equipment, turn off all power switches or breakers on the equipment.	Elektroschockgefahr. Da diese Ausrüstung mehrfache Stromquellen hat, kann es, wenn nicht alle abgeschaltet werden, infolge von elektrischem Schlag oder Verbrennungen zu Tod oder schwerer Verletzung kommen. Beim Abschalten der Netzversorgung dieses Gerätes, schalten Sie alle Netzschalter oder Unterbrecher an diesem Gerät aus.	Risque de décharge électrique. Cet appareil a plusieurs sources d'alimentation, et la non-déconnexion de toutes peut entraîner des blessures graves ou mortelles dues à une décharge électrique ou des brûlures. A la déconnexion de l'équipement de la source d'alimentation, mettre sur OFF tous ses interrupteurs ou disjoncteurs d'alimentation.	有触电危险。 此装置有多处电源，若不全部切断则会因触电或起火而造成死亡或严重伤害。 要切断设备电源时，请关闭该设备所有的电源开关或者断开该设备所有的断路器。	감전 주의. 복수의 입력 전원이 공급되고 있어 감전 및 화상으로 인한 사망 또는 상처를 입을 위험이 있습니다. 장치의 전원을 절단할 경우에는 본 장치의 모든 전원스위치 또는 브레이커를 OFF로 해주세요.
⚠ 注意	⚠ CAUTION	⚠ ACHTUNG	⚠ ATTENTION	⚠ 注意	⚠ 주의
落下注意 落とすとけがをする恐れがあります。 ファンユニットを取り外すときは、本体をしっかり持って取り扱ってください。	Be careful of getting injured. If this unit falls down, someone might get injured. When you take out the fan unit, please hold the main unit firmly.	Nicht fallen lassen. Verletzungsgefahr durch Fallenlassen. Haupteinheit gut festhalten, wenn der Lüfter entfernt wird.	Attention aux chutes Une chute peut entraîner une blessure. Maintenir fermement l'unité lors du retrait du ventilateur.	注意有物品掉下来 有可能被落下物品碰到而受伤。 在取下机体的时候，请用手把机体抓紧后进行操作。	낙하주의 떨어 뜨리면 부상을 입을 수 있습니다. 팬 유니트를 분리 할 때는 본체를 단단히 잡고 취급하십시오.

Warning Labels

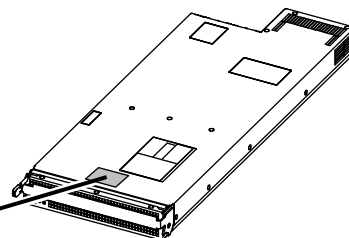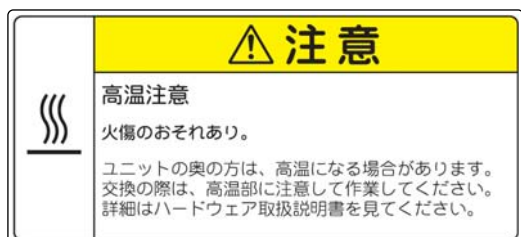Fan unit

Basic control unit

Packet routing unit

Power supply unit

このラインで引き出しを止め、ユニットの底面を支えて筐体から取り出すこと。

Do not pull unit beyond the line. Support the bottom of the unit prior to sliding it out.

Ziehen Sie das Gerät nicht über die Linie hinaus. Unterstützen Sie die Unterseite des Gerätes, bevor Sie es herausschieben.

Ne pas tirer l'appareil au-delà de la ligne. Soutenir le bas de l'appareil avant de le faire coulisser pour le retirer.

请不要将部件拉出线路外。在抽出前需要支撑部件底部。

이 라인(줄)부터 유닛의 밑면을 떠받치면서 장비에서 빼낼 것.

⚠ 注意	⚠ CAUTION
落下注意	Drop potential
ユニット落下により、怪我の危険があります。	There is a risk of injury if the unit is dropped.
上記の手順に従い、一連の動作を行ってください。	Follow the procedure above.
⚠ 注意	⚠ ACHTUNG
掉落注意	Gefahr bei Herunterfallen des Gerätes
部件掉落会有人员损伤危险。	Wenn das Gerät fallen gelassen wird, besteht Verletzungsgefahr.
遵循上述流程。	Befolgen Sie das obenstehende Verfahren.
⚠ 주의	⚠ ATTENTION
낙하주의	Danger lié à une chute
유닛의 낙하로 인해 다칠 위험이 있습니다.	La chute de l'appareil peut entraîner un risque de blessures.
상기의 수순에 따라, 일련의 동작을 수행해 주십시오.	Suivre la procédure décrite ci-dessus.

Warning Labels

⚠ 注意

高温注意

火傷のおそれあり。

ユニットの奥の方は、高温になる場合があります。
交換の際は、高温部に注意して作業してください。
詳細はハードウェア取扱説明書を見てください。
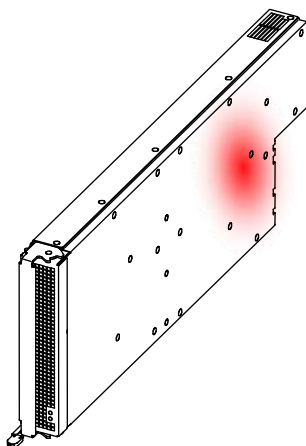
Power supply unit

The bottom rear side of the power supply unit might be hot.

SFP-T

Contents

1 Preparations

This chapter describes the preparations required to use the Device. It also describes the manual organization for AX8600R series devices, where this guide fits into the manual organization, and how to use the manuals.

1.1 Reading sequence for the AX8600R series manuals

1.2 Verifying supplied components

1.3 Preparing the necessary items

1.1 Reading sequence of the AX8600R series manuals

The figure below shows the reading sequence for the AX8600R series manuals.

This guide explains only the operations from unpacking the Device to setting it up for basic operation.

Note that this guide provides only a minimum amount of information. To take advantage of the wealth of functions provided by AX8600R series devices, see the following manuals.

• Reading sequence of the AX8600R series manuals

Figure1-1 Reading sequence of the AX8600R series manuals

Unpacking the Device and understanding the basic settings for initial installation	▶ AX8600R Quick Start Guide (AX86R-Q001X)
Determining the hardware setup requirements	▶ ALAXALA AX8600R Hardware Instruction Manual (AX86R-H001X)
Understanding how to handle the hardware	▶
Understanding the software functions, configuration settings, and how to use operation commands for checking	▶ Software Manual Configuration Guide Vol. 1 (AX86R-S001X) Software Manual Configuration Guide Vol. 2 (AX86R-S002X) Software Manual Configuration Guide Vol. 3 (AX86R-S003X)
Learning the syntax of configuration commands and the details of command parameters	▶ Software Manual Configuration Command Reference Vol. 1 (AX86R-S004X) Software Manual Configuration Command Reference Vol. 2 (AX86R-S005X) Software Manual Configuration Command Reference Vol. 3 (AX86R-S006X)
Learning the syntax of operation commands and the details of command parameters	▶ Software Manual Operation Command Reference Vol. 1 (AX86R-S007X) Software Manual Operation Command Reference Vol. 2 (AX86R-S008X) Software Manual Operation Command Reference Vol. 3 (AX86R-S009X)
Learning the details of system messages and logs	▶ Software Manual Message and Log Reference Vol. 1 (AX86R-S010X)
Learning the details of supported MIBs	▶ Software Manual MIB Reference Vol. 1 (AX86R-S011X)
How to troubleshoot when a problem occurs	▶ Troubleshooting Guide (AX86R-T001X)

1.2 Verifying supplied components

Use the packing list included in the shipping package to make sure that all of the components and accessories were received.

1.3 Preparing the necessary items

To set up the Device, prepare the following in addition to the main unit, components, and accessories.

•Operation terminal

Prepare a personal computer or a workstation that supports the specifications in the following table.

Table 1-1 Operation terminal (for connecting to the console port)

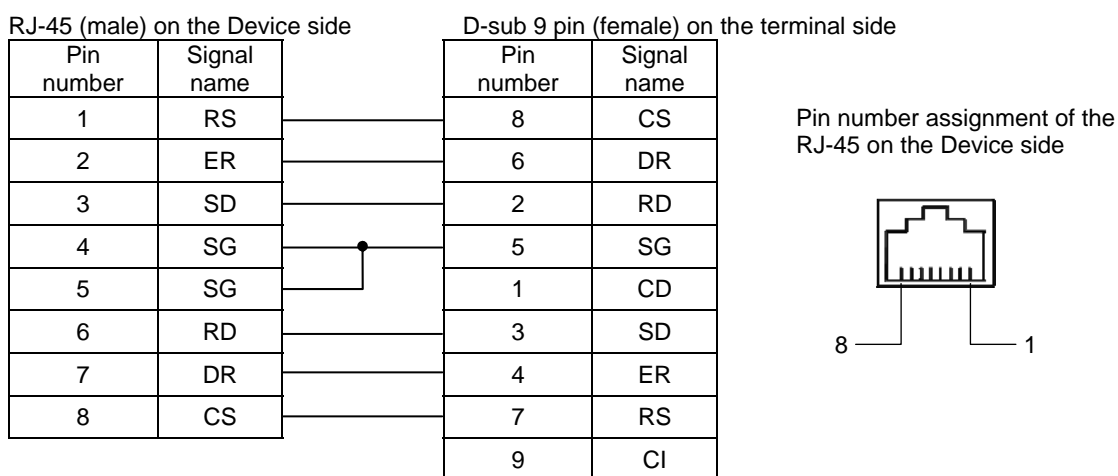| Item		Specifications
Communication port		RS232C port
Communication software		Communication software that supports the following communication settings
Communication settings	Communication parameters	8 bits, 1 stop bit, no parity
	Communication speed[#1]	19200 bit/s, 9600 bit/s, 4800 bit/s, 2400 bit/s, 1200 bit/s

#1: The communication speed of the Device is set to 9600 bit/s when shipped from the factory.

•RS232C crossover cable

To connect an operation terminal to the CONSOLE port of the Device, an RS232C crossover cable (RJ-45 (male) to D-Sub 9 pin (female)) is used.
The following figure shows the pin number assignment of an RS232C crossover cable.

Figure 1-2 Operation terminal connection cable

RJ-45 (male) on the Device side

Pin number	Signal name
1	RS
2	ER
3	SD
4	SG
5	SG
6	RD
7	DR
8	CS

D-sub 9 pin (female) on the terminal side

Pin number	Signal name
8	CS
6	DR
2	RD
5	SG
1	CD
3	SD
4	ER
7	RS
9	CI

Pin number assignment of the RJ-45 on the Device side

8 —— 1

NOTE You can use the RS232C cables that are compliant with the specifications suggested by Cisco Systems, Inc. However, check the signal line specifications of the RS232C cable and that of the operation terminal in advance.

•Interface cable

An interface cable is necessary to connect to other devices. For details about interface cables, see the *AX8600R Hardware Instruction Manual*.

•-48 V DC power cable

When you use the Device at -48 V DC, use a -48 V DC power cable that meets the given specifications. For details about the specifications of -48 V DC power cables, see the *AX8600R Hardware Instruction Manual*.

2 Installing the Device

This chapter describes the procedure for connecting the power and interface cables to the main unit, and then turning on the power.

2.1 Installing the Device

This section describes how to install the Device.

2.1.1 Overview of the installation steps

• AX8616R (when an AC power supply unit is mounted)

Figure 2-1 Schematic view of AX8616R (front side)

Step 6.
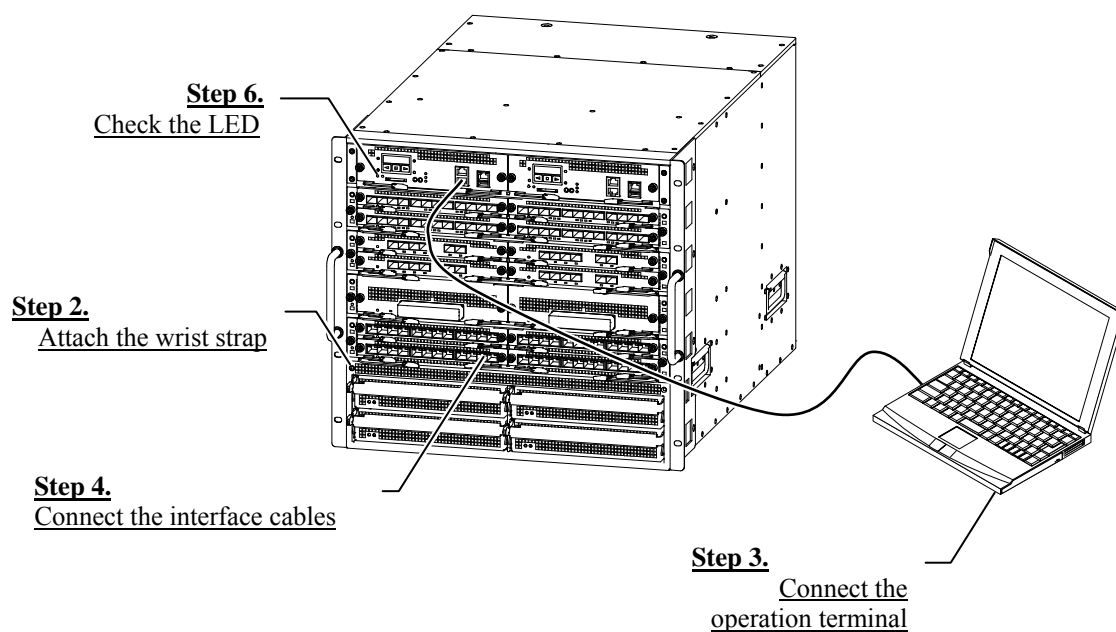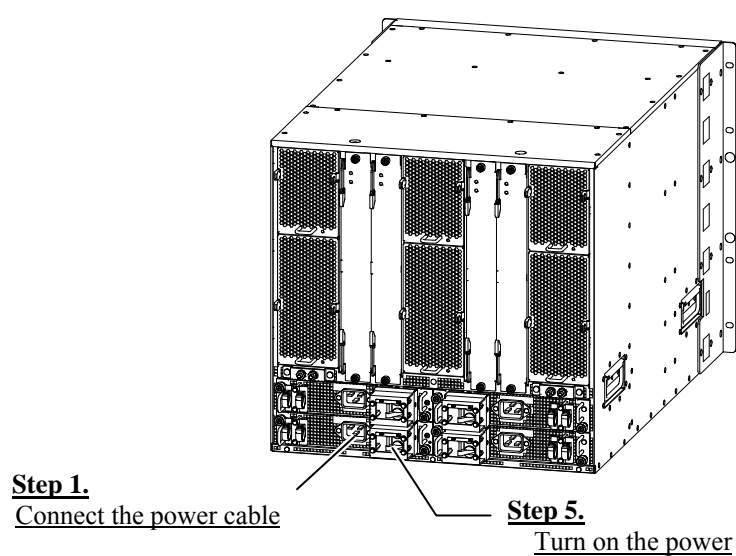Check the LED

Step 2.
Attach the wrist strap

Step 4.
Connect the interface cables

Step 3.
Connect the
operation terminal

Figure 2-2 Schematic view of AX8616R (rear side)

Step 1.
Connect the power cable

Step 5.
Turn on the power

•AX8616R (when a DC power supply unit is mounted)

Figure 2-3 Schematic view of AX8616R (front side)

Step 6.
Check the LED

Step 2.
Attach the wrist strap

Step 4.
Connect the interface cables

Step 3.
Connect the
operation terminal
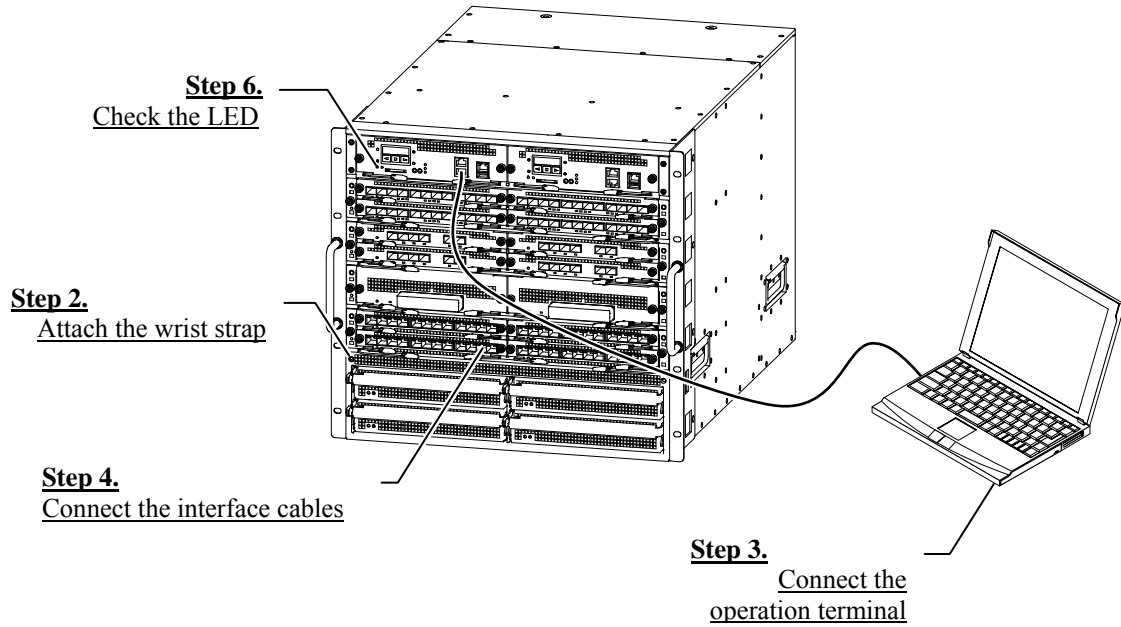
Figure 2-4 Schematic view of AX8616R (rear side)

Step 1.
Connect the power cable

Step 5.
Turn on the power
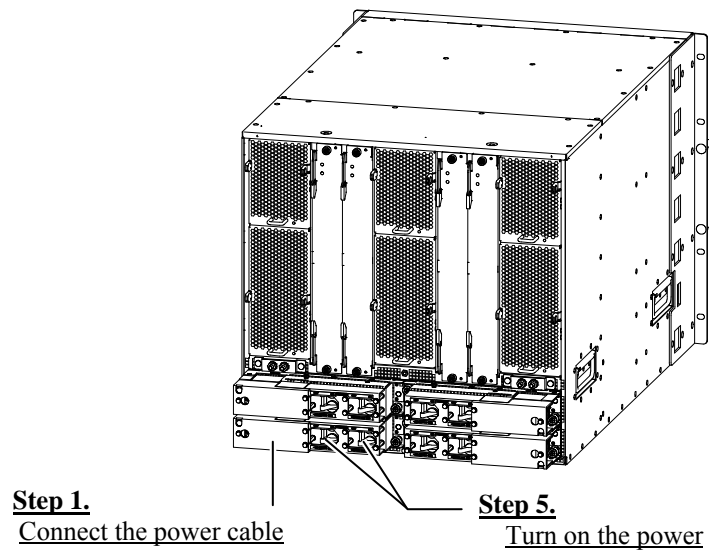
•AX8632R (when an AC power supply unit is mounted)

Figure 2-5 Schematic view of AX8632R (front side)

Step 6.
Check the LED

Step 4.
Connect the interface cables

Step 2.
Attach the wrist strap

Step 3.
Connect the operation terminal
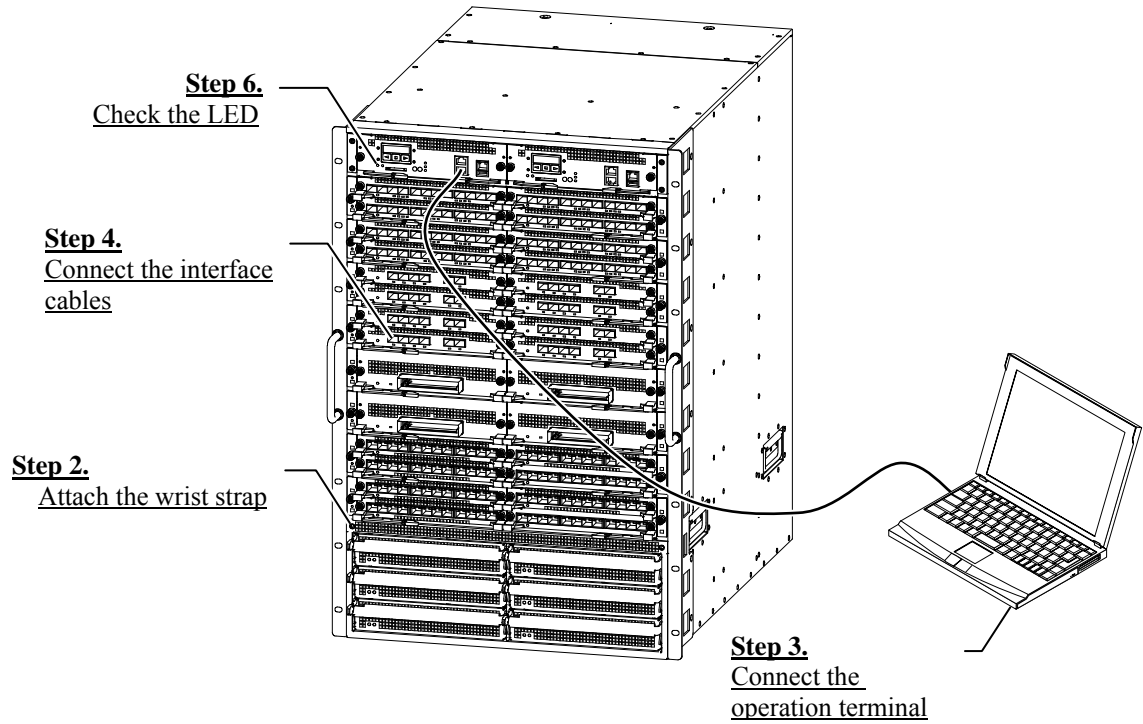
Figure 2-6 Schematic view of AX8632R (rear side)

Step 1.
Connect the power cable

Step 5.
Turn on the power
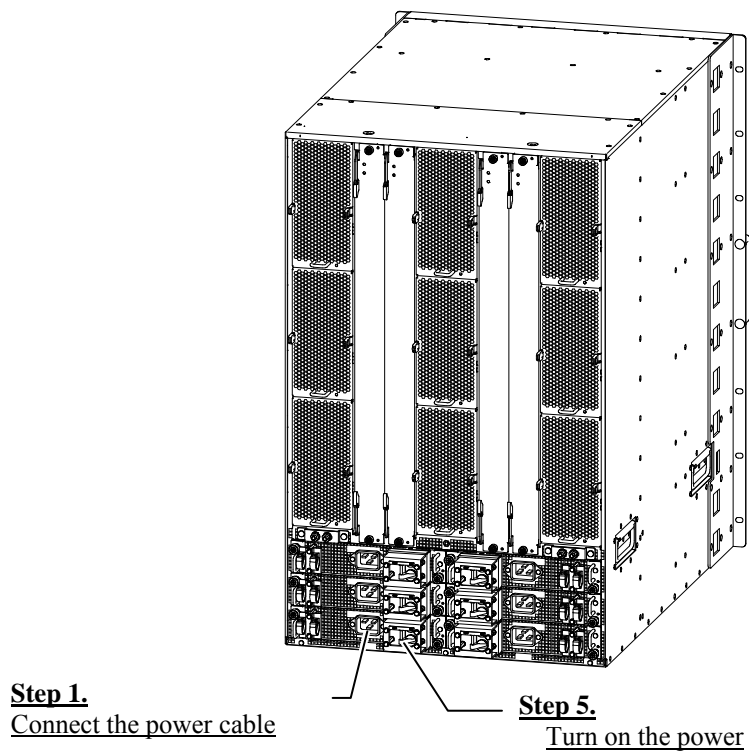
•AX8632R (when a DC power supply unit is mounted)

Figure 2-7 Schematic view of AX8632R (front side)

Step 6.
Check the LED

Step 4.
Connect the interface cables

Step 2.
Attach the wrist strap

Step 3.
Connect the operation terminal
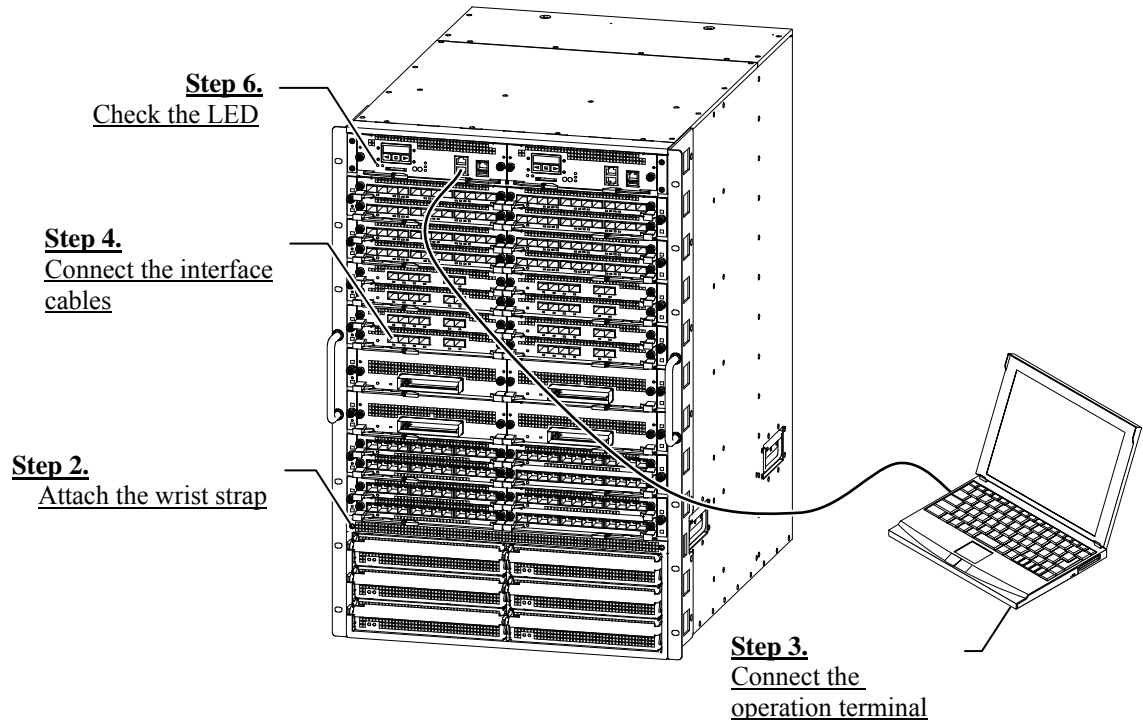
Figure 2-8 Schematic view of AX8632R (rear side)

Step 1.
Connect the power cable

Step 5.
Turn on the power
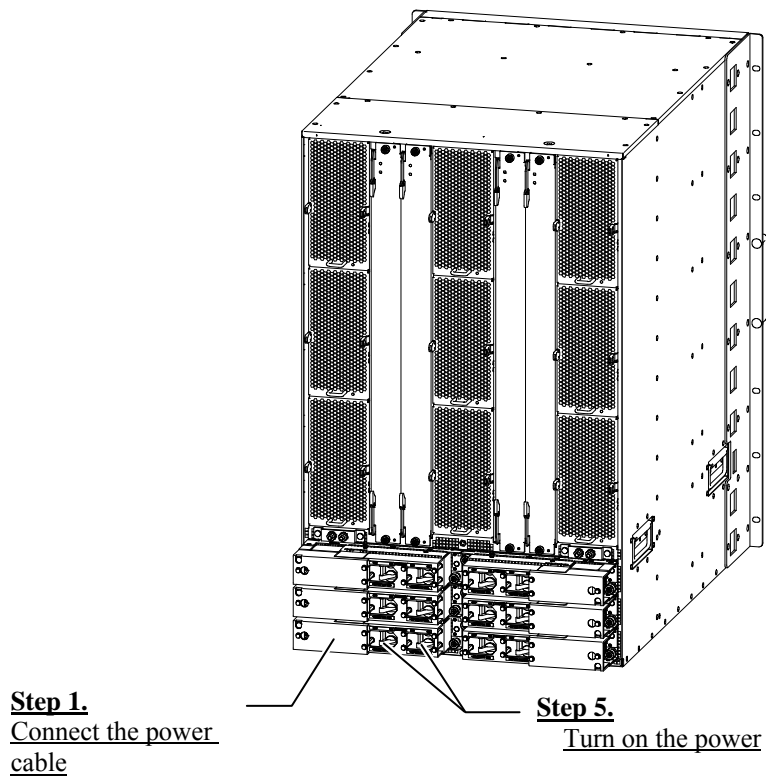
2.1.2　Details of the installation steps

[Step 1] Connecting a power cable

•When using the Device with AC power

Connect the 100 V AC or 200 V AC power cable to the power connector of the power input unit that corresponds to the mounted power supply unit.

For details about the installation location of the power input units corresponding to the power supply units, see the following table.

Table 2-1　Correspondence between power supply units and power input units

Power supply unit	Power input unit
PS1	PSINPUT1
PS2	PSINPUT2
PS3	PSINPUT3
PS4	PSINPUT4
PS5	PSINPUT5
PS6	PSINPUT6

⚠ WARNING	When you connect the Device to the AC power supply, use a grounded power outlet. Using the Device without grounding might result in electric shock, as well as a failure due to electrical noise.

⚠ WARNING	Use a designated power cable. Using a power cable other than the designated one might result in a fire or electric shock. In addition, do not use a designated power cable with another device. Doing so might result in a fire or electric shock.

NOTICE	Before connecting or disconnecting a power cable, turn off the circuit breaker on the power input unit of the target power input unit.

•When using the Device with DC power

Connect the −48 V DC power cable to the power input unit that corresponds to the mounted power supply unit.

For details about connecting a -48 V DC power cable, see the *AX8600R Hardware Instruction Manual*.

For details about the installation location of the power input units corresponding to the power supply units, see *Table 2-1*.

[Step 2] Attaching the wrist strap

Attach the anti-static wrist strap to the wrist strap terminal.

NOTE	The wrist strap terminal on the Device is designed to use a 4-mm banana plug. Use a wrist strap with a 4-mm banana plug terminal.

[Step 3] Connecting the operation terminal

1. Connect the operation terminal to the console port. Use an RS232C crossover cable to connect the operation terminal.
2. Start the operation terminal.
3. Start the communication software.

NOTE	For details about how to configure the communication software, see the documentation for the communication software.

[Step 4] Connecting the interface cables

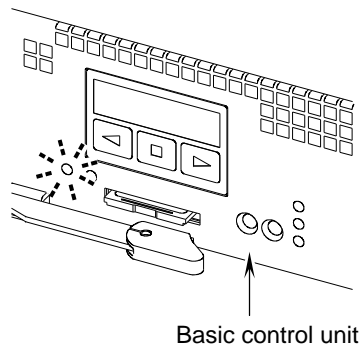Connect the interface cables to the interface ports.

[Step 5] Turning on the power

Turn on the circuit breaker on the power input unit that corresponds to the mounted power supply unit.
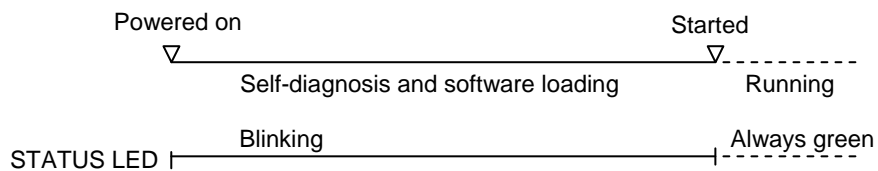
For details about the installation location of the power input units corresponding to the power supply units, see *Table 2-1*.

[Step 6] Checking the LED

If the STATUS LED of the basic control unit turns green, the Device is running.

Basic control unit

The following describes the process up until the Device starts.

Powered on   Started

Self-diagnosis and software loading   Running

Blinking   Always green

STATUS LED

1. After the power is turned on, the STATUS LED starts blinking green, and the system starts self-diagnosis and loading software.

2. When the Device starts, the STATUS LED turns green.

NOTE

If the STATUS LED turns red or failure information is displayed on the LCD, there is failure in the Device.
For details about device failures and corrective actions, see the *Troubleshooting Guide*.

2.2 Other preparations

●Installing and removing optional modules

For details about how to install or remove an optional module such as a fan unit, power input unit, power supply unit, basic control unit, switch fabric unit, packet routing unit, network interface board, memory card, or transceiver, see the *AX8600R Hardware Instruction Manual*.

●Detailed information about the main unit and optional modules

For details about the part names and their descriptions on the main unit and optional modules, see the *AX8600R Hardware Instruction Manual*.

3 Operations Required for Initial Installation

This chapter describes the operations required when you first install the Device, such as setting the administrator mode password, adding and deleting user accounts, and setting the time.

3.1 Overview of the command input modes

The command line interface (CLI) for the Device has the following command input modes: user mode, administrator mode, and configuration command mode.

To set up or change the Device configuration or view the Device status, you need to switch to the appropriate command input mode and enter a configuration or operation command.

The following table describes the features of each command input mode. For details about how to access and exit the command input modes, see *Table 3-1 Command input modes*.

Table 3-1 Command input modes

Command input mode	Mode transition command	Prompt	Exit command	Description
User mode	`login: <user name>`	`>`	`> logout`	Operation commands, except for commands such as the `configure` command, can be used.
Administrator mode	`> enable`	`#`	`# disable`	All operation commands can be used.
Configuration command mode	`# configure`	`(config)#`	`(config)# exit`	All configuration commands can be used.

● User mode

When you log in to the Device, the mode is user mode.

In user mode, most operation commands can be executed.

The `configure` command, which is used to register a new user account, delete a user account, and switch to configuration command mode, cannot be executed in user mode. The command must be executed in administrator mode.

● Administrator mode

When you enter the `enable` command while in user mode, the mode changes to administrator mode.

In administrator mode, you can use all operation commands.

When the Device is initially installed, no password is specified for the `enable` command. To ensure security, set a password for the `enable` command and limit the users who can use administrator mode.

● Configuration command mode

In administrator mode, entering the `configure` command puts you in configuration command mode.

In this mode, you can use configuration commands to set and change the configuration of the Device.

NOTE
For details about the command input modes where operation commands can be executed, see the *Software Manual Operation Command Reference*.
For details about the command input modes where configuration commands can be executed, see the *Software Manual Configuration Command Reference*.

3.2 Overview of initial setup operations

This section provides an overview of the operations required when you first install the Device.

For detailed operations, see the subsequent sections.

NOTE The operations below are the minimum requirements for initial installation. For details about the operations after the initial operations, see the manuals listed in *4.1 operation management and configuration settings*.

(1) Login

Log in to the Device. Use the user name `operator`, which was set at the initial installation (you can log in without authentication because a password is not set for `operator`).

(2) Setting the administrator mode password

Use the `enable` command to specify a password for entering administrator mode. At the initial installation, this password has not been set. To ensure security, set a password for administrator mode.

(3) Adding a user account and deleting the user account `operator`

Create a new user account.

If you do not intend to use the login user `operator`, which was set at the initial installation, we recommend that you delete it by using the `no username` command after creating a new login user. Doing so strengthens security.

(4) Setting the time

Set the time zone and the time. At the initial installation, the exact time has not been set. Because the time is important information that is used to collect failure information, set the exact time.

3.3 Login

When the Device is started, the `login` prompt appears. Enter the user name at the prompt to log in to the Device.

```
login:   operator                                    ... Enter the user name operator.
Copyright (c) 2013 ALAXALA Networks Corporation. All rights reserved.


>
```

NOTE   Although the screen shots provided in the following explanations might differ depending on the software version, the basic operations are the same.

3.4 Setting the administrator mode password

Specify the password for administrator mode.

```
> enable                              ... Switch to administrator mode.

# configure                           ... Switch to configuration command mode.

(config)# enable password input      ... Enable the administrator mode password setting.

New password:   ********              ... Enter the administrator mode password.
                                          (The actual input characters are not shown.)

Retype new password:   ********       ... Re-enter the password for confirmation.
                                          (The actual input characters are not shown.)

(config)#
```

NOTE

We recommend that you use six or more characters for the password. If fewer than six characters are entered, an error is displayed. Note, however, that if you re-enter the same password, it will be accepted. Also, the maximum number of characters that can be used for a password is 128. If you enter 129 or more characters, only the first 128 characters are registered for the password. We recommend that you use upper-case alphabetic characters, numbers, and symbols in addition to lower-case alphabetic characters. If a password consists of only lower-case alphabetic characters, an error is displayed. Note, however, that if you re-enter the same password, it will be accepted.

3.5 Adding a user account and deleting the user account "operator"

[Step 1] Creating a user account and setting the login password

Create a new user account and set the login password.

The following example shows how to create the user name newuser and set a password for it.

```
(config)# username newuser password input        ... Register the new user name newuser.

New password:    ********                          ... Specify the login password for the user name newuser.
                                                       (The actual input characters are not shown.)
Retype new password:  ********                      ... Re-enter the password for confirmation.
                                                       (The actual input characters are not shown.)
(config)#
```

NOTE

We recommend that you use six or more characters for the password. If fewer than six characters are entered, an error is displayed. Note, however, that if you re-enter the same password, it will be accepted. Also, the maximum number of characters that can be used for a password is 128. If you enter 129 or more characters, only the first 128 characters are registered for the password. We recommend that you use upper-case alphabetic characters, numbers, and symbols in addition to lower-case alphabetic characters. If a password consists of only lower-case alphabetic characters, an error is displayed. Note, however, that if you re-enter the same password, it will be accepted.

[Step 2] Deleting the user account operator

Delete the user account operator, which was set at the initial installation.

```
login:   newuser                  ... Log in with the user name newuser that you registered.
Password:   ********              ... Enter the login password (the password you set in step 1).
Copyright (c) 2013 ALAXALA Networks Corporation. All rights reserved.
> enable                          ... Switch to administrator mode.
Password:   ********              ... Enter the administrator mode password.
# configure                       ... Switch to configuration command mode.
(config)# no username operator    ... Delete the user name operator, which was set at the initial
                                      installation.
Do you want to delete the user account operator? (y/n): y
(config)#
```

3.6 Setting the time

Set the time zone.

The following example shows the procedure for setting the time zone to Japan and the time to March 22nd, 2013, at 15:30.

```
# configure                    ... Switch to configuration command mode.
(config)# clock timezone JST +9    ... Set JST as the time zone and +9 as the UTC offset value.
!(config)# save                ... Save the time zone setting.
(config)# exit                 ... Return to administrator mode.
# set clock 1303221530         ... Enter the date and time (year, month, day, hour, and minutes)
                               in 2-digit sets.
Fri Mar 22 15:30:00 JST 2013   ... The specified date and time is displayed.
# disable                      ... Return to user mode.
> logout                       …Log out.
```

NOTE If the configuration is changed, an exclamation mark (!) appears in front of the prompt. This exclamation mark (!) disappears when the configuration is saved.

This completes the operations required for initial installation, which included setting the time, setting the administrator mode, and adding and deleting user accounts.

NOTE For details about operation management and configuration settings that are performed after the operations above, see the manuals listed in *4.1 Operation management and configuration settings*.

4 Operations After Installation

This chapter describes the manuals you need to reference to specify advanced settings for the Device, check the operating status, and troubleshoot any problem that might occur.

4.1	Operation management and configuration settings
4.2	Troubleshooting

4.1 Operation management and configuration settings

For details about operation management and configuration settings, see the manuals below. (Numbers in parentheses indicate the manual number.)

● Manuals for operation management and configuration settings:
  - Software Manual Configuration Guide Vol. 1 (AX86R-S001X)
  - Software Manual Configuration Guide Vol. 2 (AX86R-S002X)
  - Software Manual Configuration Guide Vol. 3 (AX86R-S003X)

● Manuals for detailed configuration commands:
  - Software Manual Configuration Command Reference Vol. 1 (AX86R-S004X)
  - Software Manual Configuration Command Reference Vol. 2 (AX86R-S005X)
  - Software Manual Configuration Command Reference Vol. 3 (AX86R-S006X)

● Manuals for detailed operation commands:
  - Software Manual Operation Command Reference Vol. 1 (AX86R-S007X)
  - Software Manual Operation Command Reference Vol. 2 (AX86R-S008X)
  - Software Manual Operation Command Reference Vol. 3 (AX86R-S009X)

NOTE

After setting up a configuration, make sure that you back up the operation information.
This enables the operation information to be restored easily after the basic control unit is replaced in the event of a failure.
For details about the backup procedure, see *11 Device Management* in the *Software Manual Configuration Guide Vol. 1*.

4.2 Troubleshooting

For details about how to troubleshoot when a problem occurs, see the corresponding manual shown below. (Numbers in parentheses indicate the manual number.)

- Troubleshooting Guide (AX86R-T001X)