SEIKO

Installation Manual

SmartCS

Console server
NS-2250

Before using this console server, carefully read this installation manual so you can use the console server correctly.

After reading this manual, store it in a safe place so can be accessed easily when necessary.

SEIKO SOLUTIONS INC.

When you dispose of the NS-2250, observe the regulations of local government. For details, contact your local government.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Introduction

Thank you for purchasing the NS-2250 console server (hereinafter referred to as the NS-2250).

This document is the installation manual for the NS-2250. This manual describes the specifications, installation methods, cable connection method, and other information of the NS-2250, for IT professionals who must remotely configure/manage the network equipment with serial port.

You must set up the system software to use the NS-2250. For details about setting up and using the system software, see the *NS-2250 Console Server Instruction Manual* (hereinafter referred to as the *Instruction Manual*) and the *NS-2250 Console Server Command Reference* (hereinafter referred to as the *Command Reference*).

Before installing the NS-2250, read the following Safety precautions and Handling precautions.

Safety precautions

Before using the NS-2250, carefully read these safety precautions so you can use the console server safely.

In this manual, the following symbols are used to call your attention to precautions so that you can use the NS-2250 safely and prevent damage to equipment.

The following table shows the meaning of these symbols. Understand the content of the chart fully before reading this manual.

⚠ Warning	Ignoring the displayed contents and handling the console server incorrectly may result in death or serious injury.
⚠ Caution	Ignoring the displayed contents and handling the console server incorrectly may result in injury or physical damage.

Examples of symbols

⚠ This symbol indicates content that requires attention (including danger and warnings).
The display example on the left indicates a warning or precaution.

🚫 This symbol indicates a prohibited action.
The display example on the left indicates that disassembly is prohibited.

● This symbol indicates a required action or an instruction.
The display example on the left indicates removal of the power plug from the outlet.

⚠Warning

Do not disassemble or modify the NS-2250.
Doing so can result in heat generation, fire, electric shock, or malfunction.

Do not remove the metal cover of the NS-2250.
There are no user-serviceable parts inside.
Doing so can result in heat generation, fire, electric shock, or malfunction.

Never use this console server in a location of extremely high humidity or a location in which it may be exposed to water or other liquids.
Doing so can result in heat generation, fire, electric shock, or malfunction.

Never drop metal pieces or drip water or other liquids into the interior or gaps of the NS-2250.
Doing so can result in heat generation, fire, electric shock, or malfunction.

Do not connect or disconnect the power cable or other cables with wet hands.
Doing so can result in electric shock.

Do not block the heat vents of the NS-2250.
Heat generation may cause fire, electric shock, or malfunction.

In the following situations, remove the power plug from the outlet.
Continuing to use the NS-2250 under such abnormal conditions may cause an accident or fire.

♦ *When you are servicing the NS-2250 or dealing with errors*
♦ *When you notice unusual odors, smoke, or unusual noises*
♦ *If metal pieces or water or other liquids enter the interior or gaps of the NS-2250*
♦ *If the NS-2250 has been dropped or the exterior surface of the NS-2250 has been damaged*

Mechanical loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading. Personal injury or equipment damage might result if mishandled.

⚠Caution

🚫 Never perform the following actions.
These actions can cause fire, electric shock, accident, or malfunction.

- ♦ *Do not place objects on the NS-2250.*
- ♦ *Do not apply impact to the NS-2250 with blows or other similar actions.*
- ♦ *Do not place the NS-2250 in an unstable location.*
- ♦ *Do not place objects on cables, twist cables, or pull cables strongly.*

🚫 Do not install the NS-2250 in the following locations or conditions.
Doing so can result in malfunction.

- ♦ *Direct sunlight*
- ♦ *Severe changes in temperature or humidity*
- ♦ *Very dusty locations*
- ♦ *Locations subject to vibrations*
- ♦ *Near a heating-cooling combination appliance*

❗ *Always perform the following actions.*
Neglecting these actions can cause fire, electric shock, accident, or malfunction.

- ♦ *Always use the NS-2250 at the specified power voltage.*
  The power voltage of the NS-2250 is displayed on the nameplate on its bottom surface and near the AC inlet.
- ♦ *Potential difference may be generated between the NS-2250 and target equipment to be connected depending on the installation environment. When connecting a cable, do not touch the terminal of the connector section. Doing so can result in electric shock.*
- ♦ *Use an outlet that is near the NS-2250 and can be easily accessed.*

⏚ *Always ground the power cable.*
Neglecting to ground the power cable can result in fire or electric shock.

In addition, follow the warnings and precautions indicated in each section.

Handling precautions

- Never perform the following actions.
  They can result in malfunction of the NS-2250 or USB memory or corrupt the contents of the USB memory.
  - ・ While the STATUS 4 light is on, do not remove the USB memory. If the USB memory is removed during operation, the operation of the NS-2250 is not guaranteed.
  - ・ While the NS-2250 is running normally, do not cut the power of the NS-2250 by switching off the power switch or pulling out the power cable, or press the RESET switch.
    Before you switch off the power, carry out the "shutdown" command to exit the system software. Next, either confirm that the "MON>" prompt is displayed on the console or wait for the STATUS 2 light on the front of the NS-2250 to switch on. Finally, switch off the power.
  - ・ Do not touch the connector of the USB memory with your hand or metal directly.

- To press the RESET switch, use an item with a narrow tip, such as the tip of a ballpoint pen.
  Do not use a mechanical pencil. If the lead of a mechanical pencil breaks and falls inside this console server, a malfunction may result.

- When you cut the power by switching off the POWER switch or removing the power cable of the NS-2250, wait 10 seconds or more before supplying power by switching on the POWER switch or inserting the power cable of the NS-2250.
  If power is supplied too quickly, the NS-2250 may not reset normally.
  When a redundant power is used, turn off both power.

- Clean the heat vents with a vacuum cleaner or similar device about once every two months.

- If the exterior of the NS-2250 becomes soiled, soak a soft cloth in a neutral detergent diluted with water, wring it well, and then wipe the exterior. Next, wipe with a dry cloth.

- This equipment is for indoor use and all the communication wirings are limited to inside of the building.

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Chapter 1
Installation procedures

Chapter 1 describes the information necessary to install the NS-2250. Read this chapter before starting the installation.

Chapter content

1.1 Installation procedures

This section provides an overview of the installation procedures of the NS-2250.
Table 1-1 shows an overview of the procedures. Note that this manual covers up to Step 2. For Step 3 and later, see the *Instruction Manual* and *Command Reference*.

Table 1-1 Installation procedures

Step	Item	Work content	Reference
1	Install the NS-2250	Install the NS-2250 in the installation location.	Chapter 2
2	Connect the cables	Connect the various cables (console, serial, LAN, and power).	Chapter 3
3	Setup	Configure the connection settings and the items to use the functions of the NS-2250 effectively.	*Instruction Manual* and *Command Reference*

1.2 Part names and functions

This section describes the part names and functions of the NS-2250.

1.2.1 Front of NS-2250-16/32/48

The front of the NS-2250-16/32/48 has an AC inlet of a redundant power supply, a RESET switch, USB port, and lights to indicate various statuses.

POWER Switches

AC inlets

Heat vents

STATUS 1-4 lights

USB port

RESET switch

POWER light

Heat vents
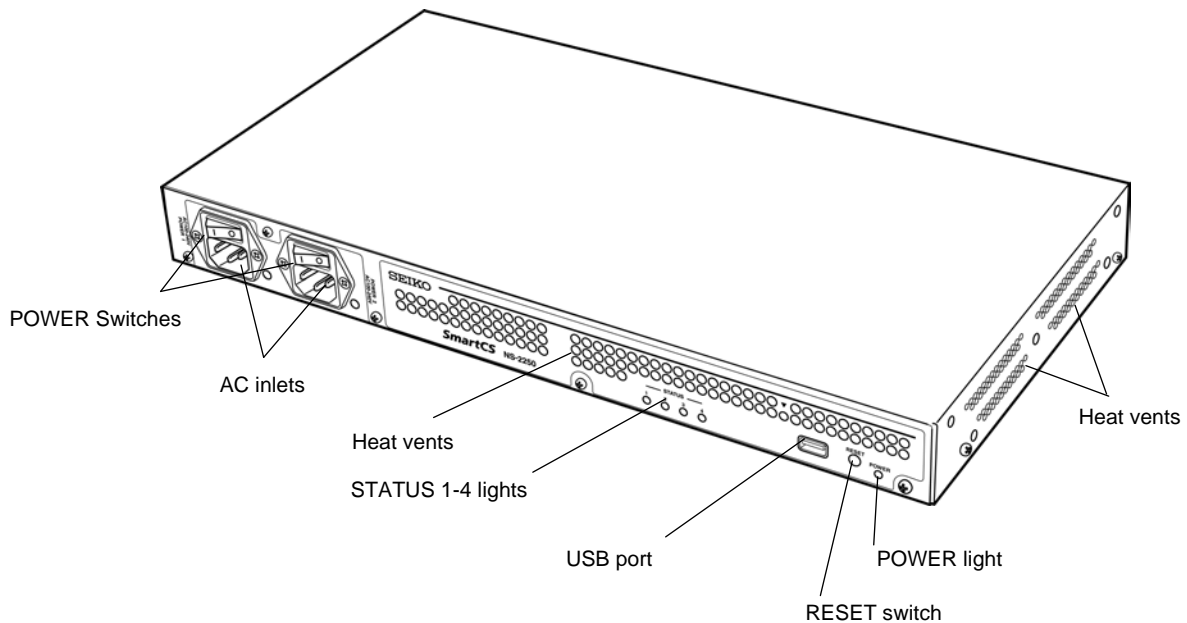
Figure 1-1 Part names of the NS-2250-16/32/48 (front)

Lights (POWER/ STATUS）

Name	Color	Function
POWER light	Green	On when power is on.
STATUS 1 light	Green	Indicates the boot status.
STATUS 2 light	Green	For details, see the *Instruction Manual*.
STATUS 3 light	Green	
STATUS 4 light	Green	

USB port
　Insert the USB memory into the USB port.

RESET switch
　Press this switch to reset the NS-2250.

POWER switches

Switch the power of the NS-2250 on or off.

When the switch is switched to the (|) side or (O) side, the power is switched on or off, respectively.

Before you switch off the power, carry out the "shutdown" command to exit the system software. Next, either confirm that the "MON>" prompt is displayed on the console or wait for the STATUS 2 light on the front of the NS-2250 to switch on. Finally, switch off the power.

Each switch controls each AC power input separately. If you use both AC power supplies for redundancy, turn the both switches on/off to power on/off, respectively.

AC inlets

Connect the AC power cable. If you use both AC power supplies for redundancy, connect the both AC power cable.

1.2.2 Rear of NS-2250-16/32/48

The rear of the NS-2250-16 has a CONSOLE port, serial ports, and a LAN port.

LINK/ACT light
Speed light
LAN1 port
LAN2 port
CONSOLE port
Serial ports 1-16
RX light
TX light
Heat vents
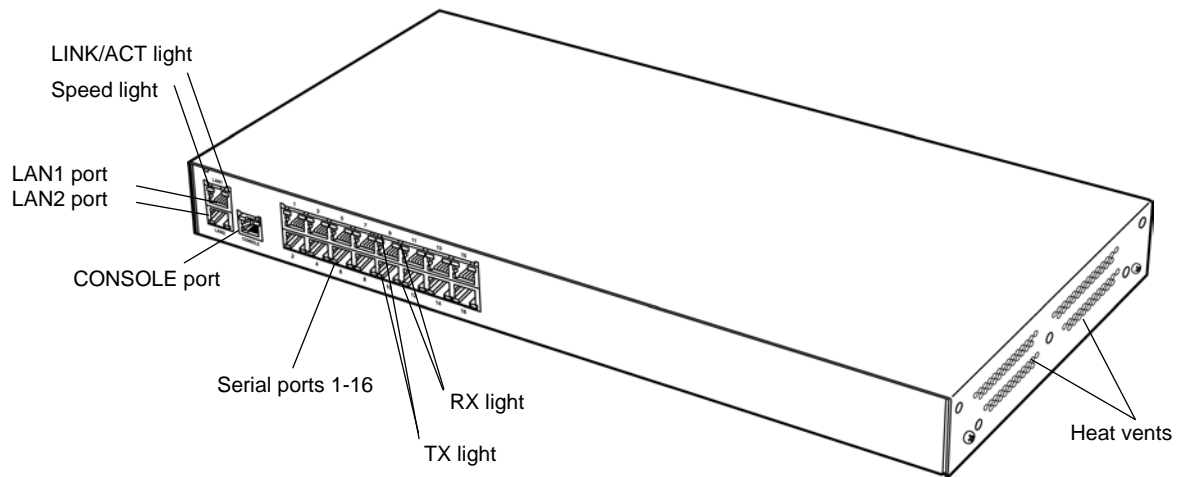
Figure 1-3 Part names of the NS-2250-16 (rear)

The rear of the NS-2250-32 has a CONSOLE port, serial ports, and a LAN port.

Link/ACT light
Speed light
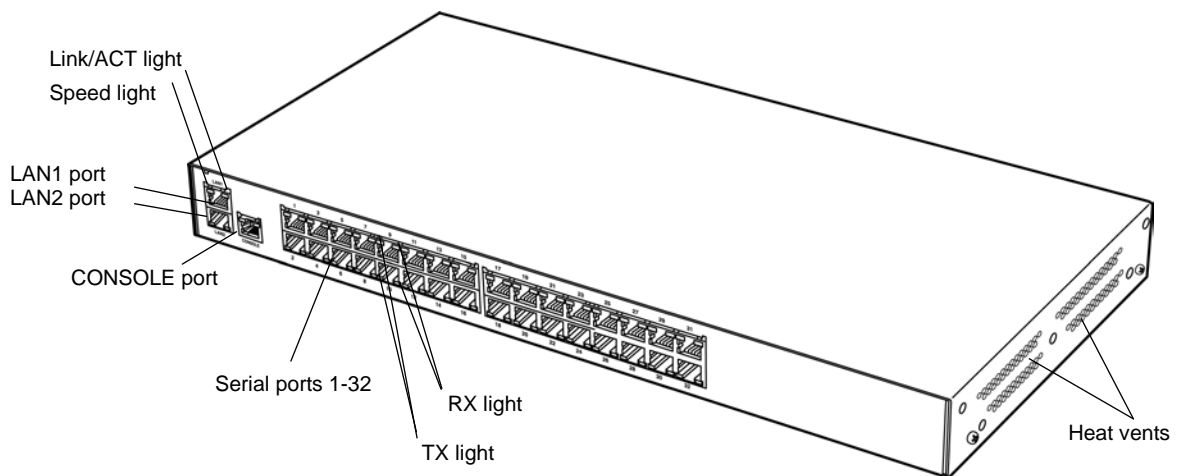LAN1 port
LAN2 port
CONSOLE port
Serial ports 1-32
RX light
TX light
Heat vents

Figure 1-4 Part names of the NS-2250-32 (rear)

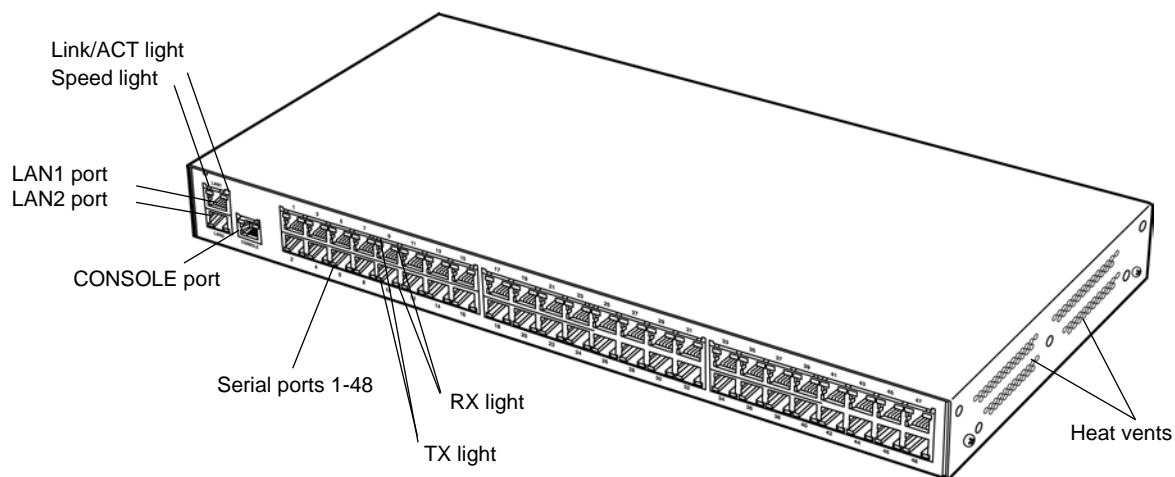The rear of the NS-2250-48 has a CONSOLE port, serial ports, and a LAN port.

Link/ACT light
Speed light

LAN1 port
LAN2 port

CONSOLE port

Serial ports 1-48

RX light

TX light

Heat vents

Figure 1-5 Part names of the NS-2250-48 (rear)

Interface ports

Name	Function
CONSOLE port	Port to connect with the system console.
Serial ports	Ports to connect with monitored equipment. The numbers of the port are 16/32/48 ports.
LAN1 port	Connect to Ethernet.
LAN2 port	Connect to Ethernet.

Lights (serial port)

Name	Color	Function
TX light	Green	On when sending data.
RX light	Green	On when receiving data.

Lights (LAN port)

Name	Color	Function
Speed light	Green	On when link speed is 1000M Off when link speed is 10/100M
LINK/ACT light	Green	On when a link is established. Flashes when sending or receiving data.

Chapter 2

Install the NS-2250

Chapter 2 describes the inspection before installing the NS-2250 and the installation procedure for the NS-2250.

2.1 Inspect the installation environment

This section shows the installation environment conditions of the NS-2250. Make sure that the installation environment is appropriate.

2.1.1 Installation space

Figure 2-1 show the installation space.

Caution   Blocking heat vents can result in malfunction.
Ensure the space shown in Figure 2-1.

(Unit: mm)
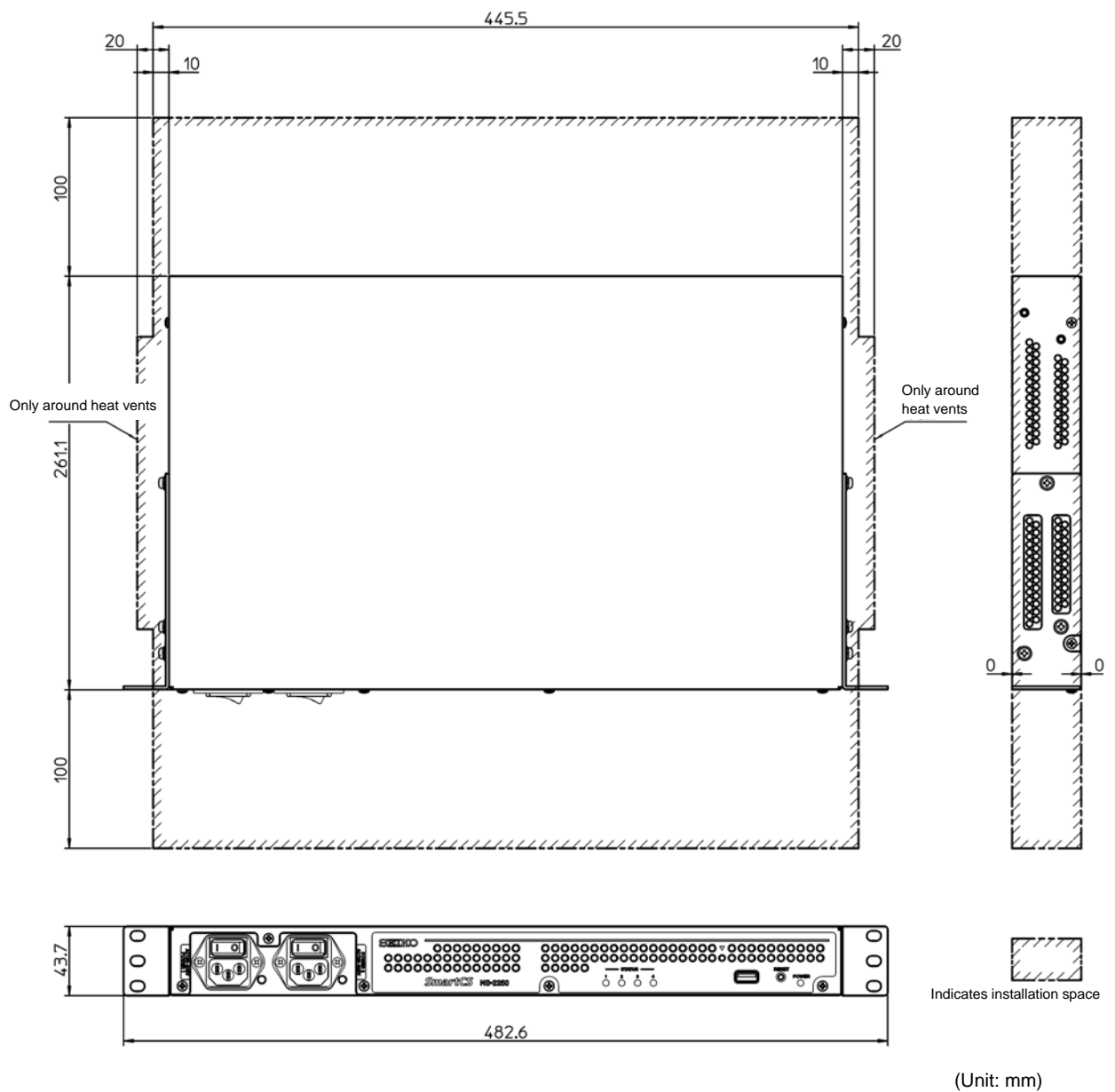
Figure 2-1 Installation space (NS-2250-16/32/48

2.1.2 Environmental conditions

Use the NS-2250 under the environmental conditions shown in Appendix A, "Specifications of the NS-2250".

⚠ Warning

Never use this console server in a location of extremely high humidity or a location in which it may be exposed to water or other liquids. Doing so can result in fire, electric shock, or malfunction.

2.1.3 Power conditions

Use the NS-2250 under the power conditions shown in Appendix A, "Specifications of the NS-2250".

2.2 Install the NS-2250

This section describes the installation procedure when the NS-2250 is installed on a 19-inch rack.

⑴ Attach the brackets to the left and right sides of the NS-2250.

M4 × 10
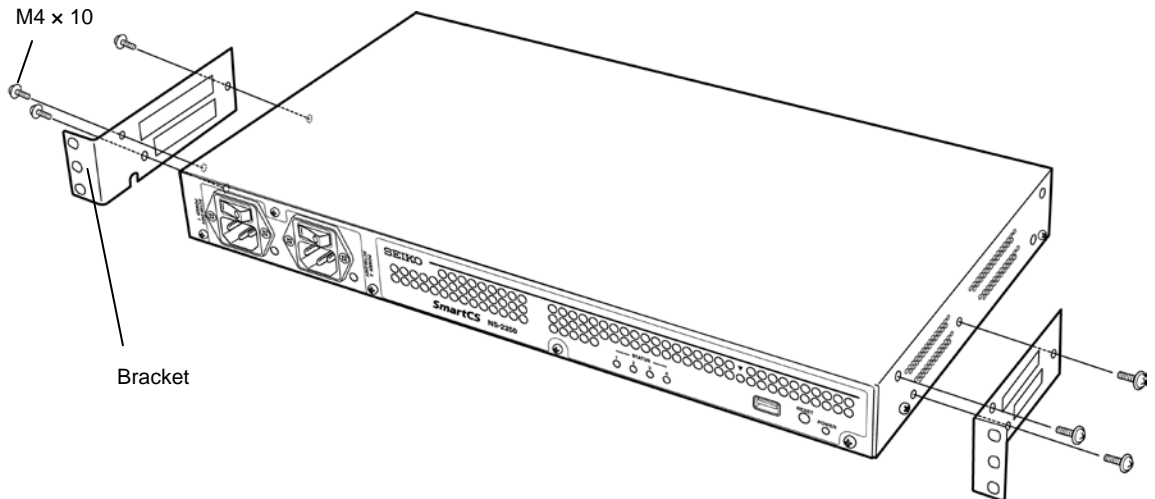
Bracket

Figure 2-2 Attach the brackets

⑵ Attach the NS-2250 to the rack.

Rack

M5×10
(M6 screws can also be used.)

In the case of two screw fixation

In the case of one screw fixation

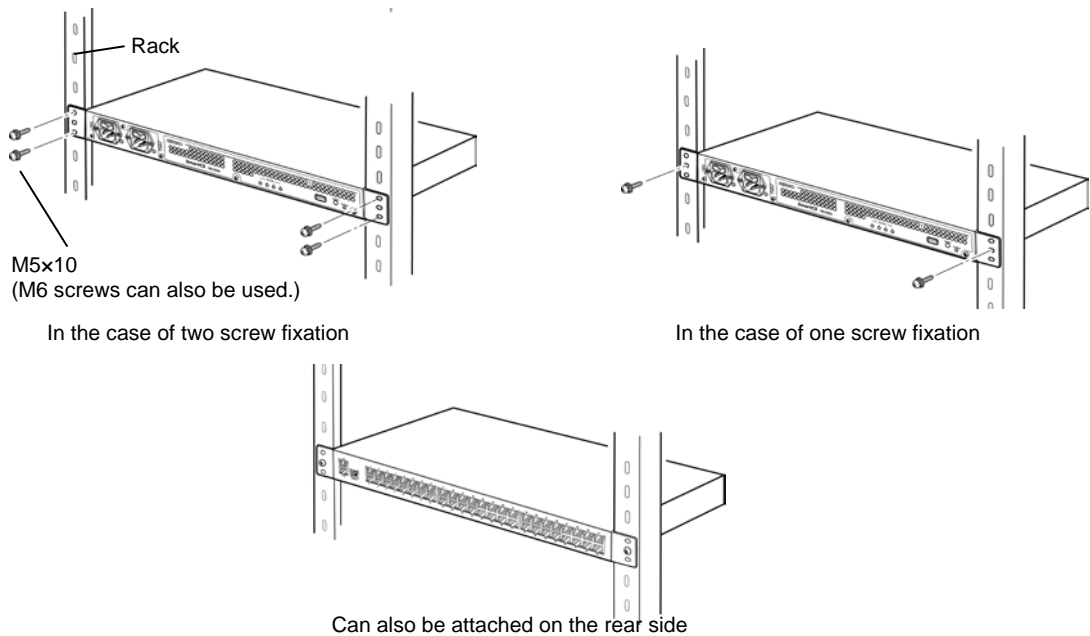Can also be attached on the rear side

Figure 2-3 Attach to the rack

⚠ Caution

Tighten the screws firmly.

If the NS-2250 falls, an accident or malfunction may occur.

Chapter 3
Connect the cables

Chapter 3 describes the procedures to connect cables.

Chapter content

3.1 Precautions when connecting cables

Refer to the explanations in the next and following sections and Appendix B, "DB9-RJ45 adapter", check the specifications of the ports of the NS-2250 and the specifications of the target equipment to be connected, and then determine the interface cable and DB9-RJ45 adapter to be used.

Note that this manual focuses on connections to the NS-2250. For details of connections of target equipment to be connected, see the manual of equipment in question.

Connect the power cable last.

⚠ Caution

Potential difference may be generated between the NS-2250 and target equipment to be connected depending on the installation environment. When connecting a cable, do not touch the terminal of the connector section. Doing so can result in electric shock.

If the connecting equipment is far from the NS-2250, we recommend removing the power cable of connecting equipment before connecting cables to serial ports.

3.2 Connect to the CONSOLE port

Use the CONSOLE port to set up the NS-2250 and output log information of the NS-2250 and other console messages.

The CONSOLE port is a DTE port. Its specifications are different from the serial ports of the NS-2250. For details, see Appendix A, "Specifications of the NS-2250".

Table 3-1 shows the specifications of the CONSOLE port.

Configure the settings of the target terminal to be connected to match these specifications.

Table 3-1 Specifications of the CONSOLE port

Item	Specifications
Interface	RS-232-compliant RJ45
Transfer speed	9600 bps
Data length	8 bit
Parity	None
Stop bit	1 bit
Flow control	XON/XOFF

Connect the CONSOLE port of the NS-2250 and the COM port of a PC/AT personal computer as shown in Figure 3-1.

(1) Insert the D-sub 9-pin connector of the included NS-354 DB9-RJ45 adapter into the COM port of the personal computer, and then secure it by tightening the fixing screws.

(2) Connect an Ethernet cable (straight-through Category 5 UTP cable) to the RJ45 connector of the adapter and the CONSOLE port of the NS-2250.

Insert the cable until you hear it click and lock. When removing the cable, pull it out while pressing the connector lever.

CONSOLE port

Ethernet cable

Attach to the COM port of the personal computer

Fixing screws
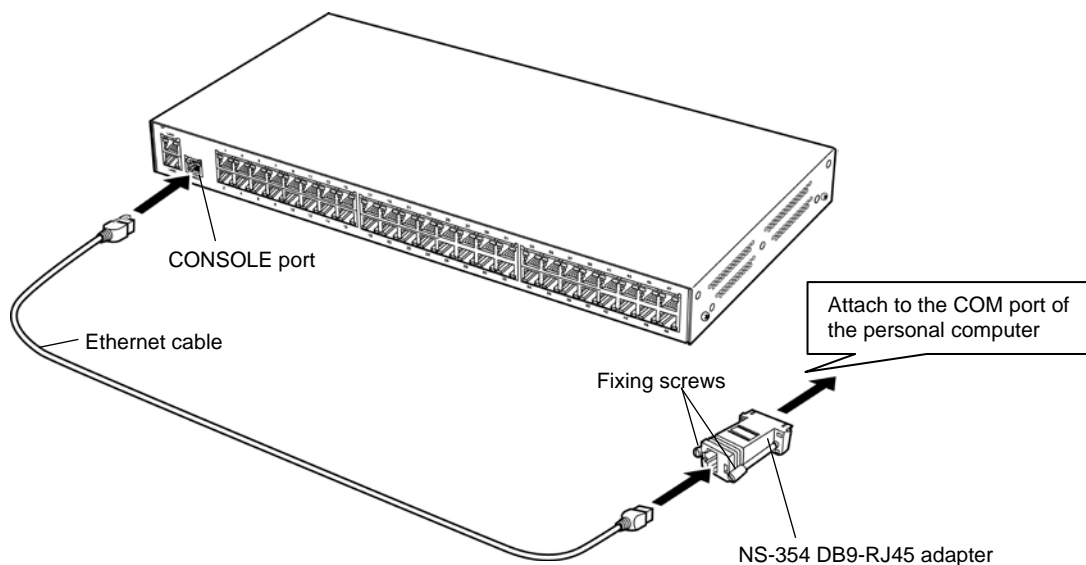
NS-354 DB9-RJ45 adapter

Figure 3-1 Connect the CONSOLE port and terminal

Caution   The CONSOLE port has the same RJ45 connector as the LAN port.

Make sure you connect to the CONSOLE port, not the LAN port.

3.3 Connect to serial ports

The serial ports are DCE ports. Their specifications are different from the CONSOLE port of the NS-2250. For details, see Appendix A, "Specifications of the NS-2250".

3.3.1 Connect to a DTE device with an RJ45 connector

Connect the NS-2250 and a DTE device with an RJ45 connector as shown in Figure 3-2.

(1) Connect an Ethernet cable (straight-through Category 5 UTP cable) to the RJ45 connector of a DTE device and a serial port of the NS-2250.

(2) Insert the cable until you hear it click and lock.
When removing the cable, pull it out while pressing the connector lever.

Serial ports

Ethernet cable

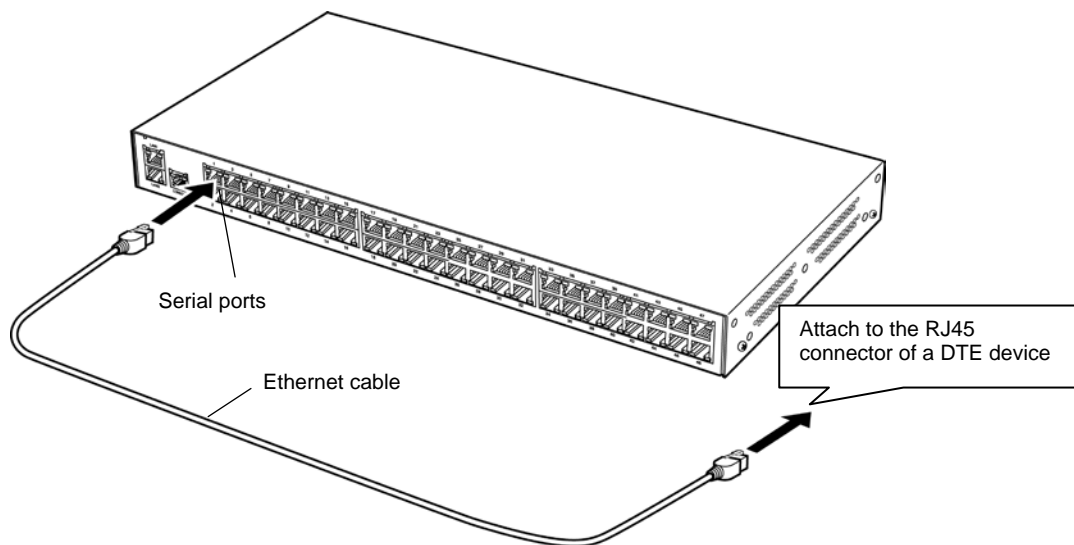Attach to the RJ45 connector of a DTE device

Figure 3-2 Connect to a DTE device with an RJ45 connector

Caution   You must change the wiring of the Ethernet cable in accordance with the pin assignment of the RJ45 connector of the target equipment to be connected. Always check the connector specifications before use.

3.3.2 Connect to a DTE device with a D-sub 9-pin connector

Connect the NS-2250 and a DTE device with a D-sub 9-pin connector as shown in Figure 3-3.

（1）Insert the NS-490 DB9-RJ45 adapter (crossover) (sold separately) into the D-sub 9-pin connector of a DTE device, and then secure it by tightening the fixing screws.

（2）Connect an Ethernet cable (straight-through Category 5 UTP cable) to the RJ45 connector of the adapter and a serial port of the NS-2250.
Insert the cable until you hear it click and lock. When removing the cable, pull it out while pressing the connector lever.

Serial ports

Attach to the D-sub 9-pin connector of a DTE device

Ethernet cable

Fixing screws

NS-490 DB9-RJ45 adapter (crossover)

Figure 3-3 Connect to a DTE device with a D-sub 9-pin connector

3.3.3 Connect to a DCE device with a D-sub 9-pin connector

Connect the NS-2250 and a DCE device with a D-sub 9-pin connector as shown in Figure 3-4.

(1) Insert the NS-354 DB9-RJ45 adapter (sold separately; same specifications as the included adapter) into the D-sub 9-pin connector of a DCE device, and then secure it by tightening the fixing screws.

(2) Connect an Ethernet cable (straight-through Category 5 UTP cable) to the RJ45 connector of the adapter and a serial port of the NS-2250.

Insert the cable until you hear it click and lock. When removing the cable, pull it out while pressing the connector lever.
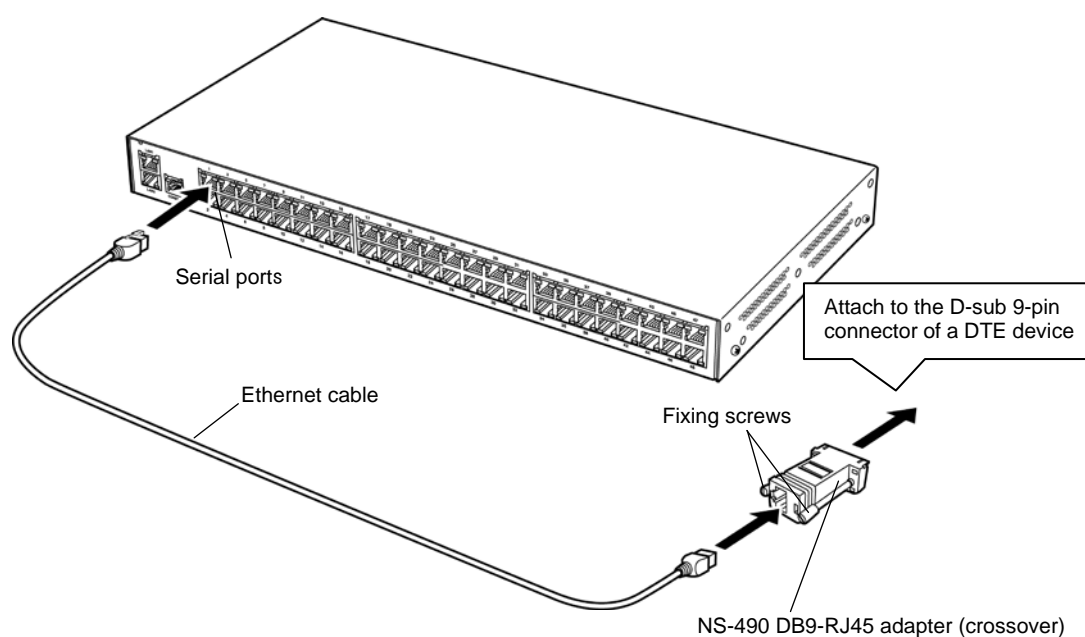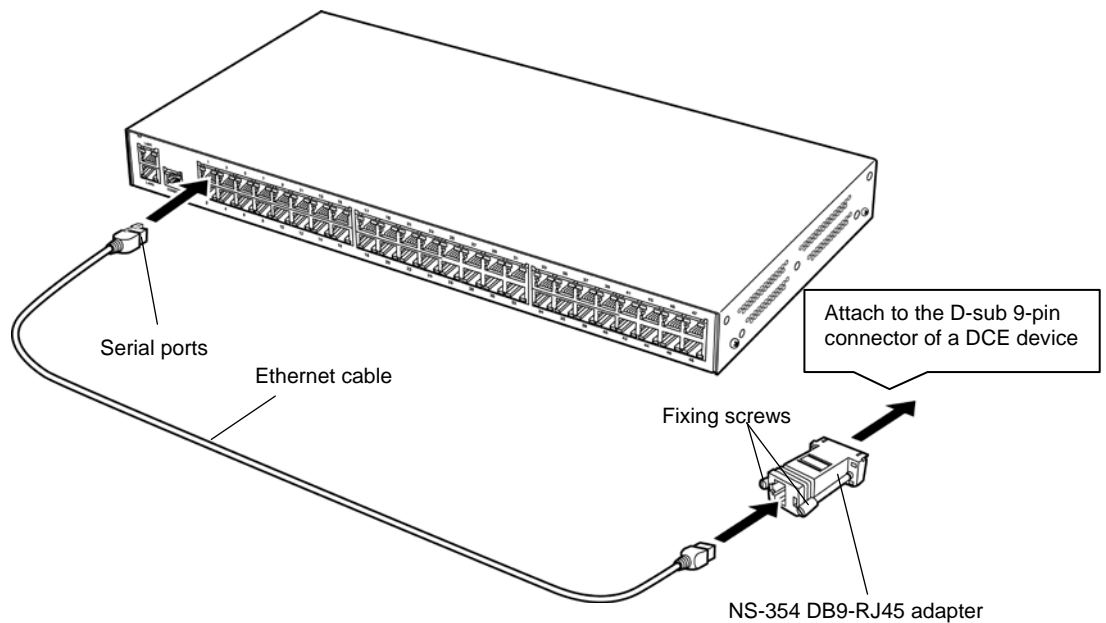

Figure 3-4 Connect to a DCE device with a D-sub 9-pin connector

3.4 Connect to the LAN port

The LAN port can be used as a 10BASE-T/100BASE-TX/1000BASE-T port, and it supports auto-negotiation.

For the Ethernet cable to connect the LAN port and a hub, use a (straight-through) Category 5e UTP cable.
Insert the cable until you hear it click and lock. When removing the cable, pull it out while pressing the connector lever.

When the NS-2250 is started, a 10Mbps/100Mbps/1000Mbps connection is automatically detected, and when a link is established, the LINK/ACT light switches on.
When a link established it in 1000Mbit/s, a SPEED lamp also lights up at the same time.
Furthermore, when data is transmitted, the LINK/ACT light flashes.
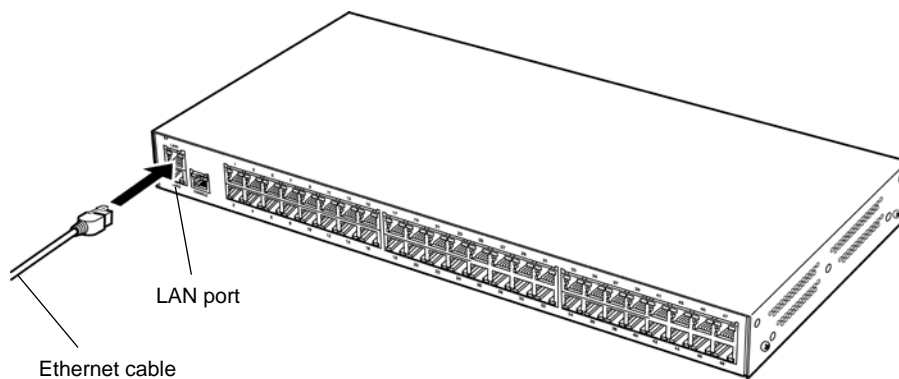A SPEED lamp is while turning off the lights at 10Mbit/s or 100Mbit/s.

LAN port

Ethernet cable

Figure 3-5 Connect to the LAN port

3.5 Connect the AC power cable (NS-2250-16/32/48)

3.5.1 Connect the AC power cable

If you are using the NS-2250 with AC power, prepare the AC power cable specified in Table 3-2. Connect the prepared AC power cable to the AC inlet of the NS-2250.

Table 3-2 AC power cable specifications

Item	Connector (NS-2250)	Cable	Plug (Outlet)
Rating	10 A 250 V Certified item under the Electrical Appliances and Material Safety Act	10 A 250 V Certified item under the Electrical Appliances and Material Safety Act	10 A 250 V Certified item under the Electrical Appliances and Material Safety Act
Shape	IEC60320 C-13	Use a 3-core cable that satisfies the rating above.	Use a plug that matches the shape of outlet of the installation environment.

⚠ Warning

🚫 Do not connect or disconnect the power cable with wet hands.
Doing so can result in electric shock.

⚠ Caution

❗ Always perform the following actions.
Neglecting these actions can cause fire, electric shock, accident, or malfunction.

◆ Use an AC power cable with the specifications indicated in Table 3-2.
◆ Use a power outlet that has a ground.Always connect the ground wire of AC power cable and ground it.
◆ Use an outlet that is near the NS-2250 and can be easily accessed.

（1）Insert the AC power cable clamp.

Release the clamp, and move ahead of the band. Then insert the clamp into a hole near the AC inlet.

clamp

Band

clamp hole
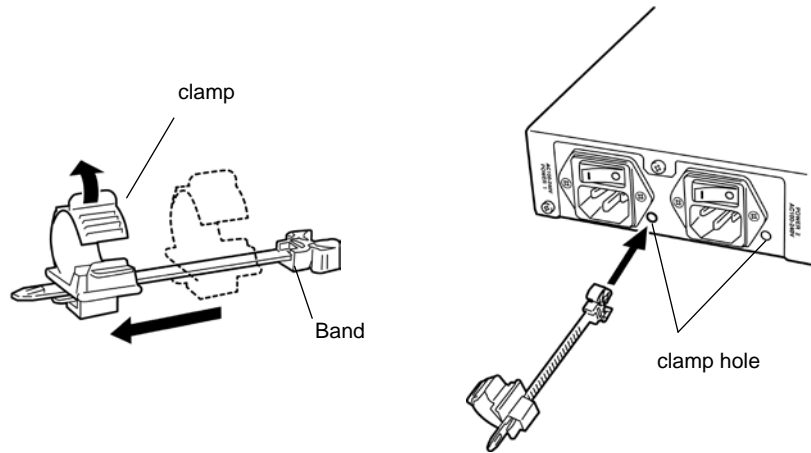
Figure 3-6 Installation the clamp of AC power cable clamp

（2）Switch the power switch of the NS-2250 off.

When the power switch has been switched to the (O) side, the power is off.

（3）Insert the AC power cable into the AC inlet.

（4）Move a clamp to a connector of power cable. Fasten the clamp to fix power cable.

（5）Insert the AC power cable plug into a AC outlet that has a ground.

Always connect the ground wire and ground it.

Power off

AC inlet

clamp
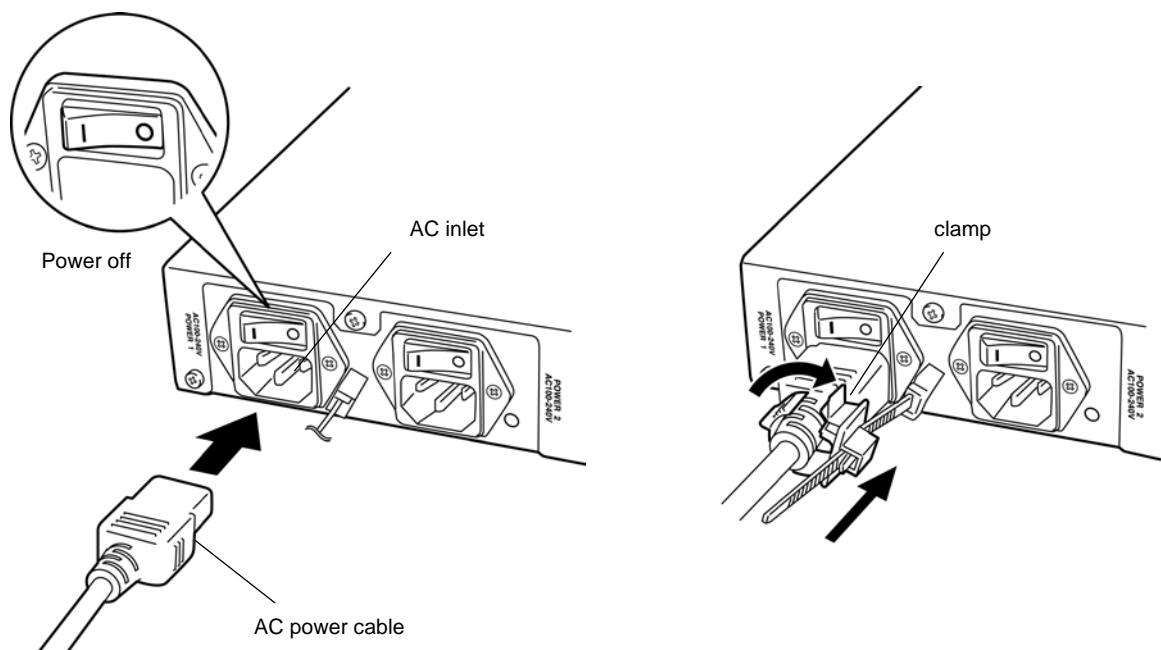
AC power cable

Figure 3-7 Connect the AC power cable (NS-2250-16/32/48)

Chapter 4
Operate the USB port

Chapter 4 describes how to operate the USB port.

Chapter content

4.1 Insert the USB memory

The setup information of the NS-2250 can be stored on a flash memory of the NS-2250 or the included USB memory. When the USB memory is set, setup information is read from the USB memory when the NS-2250 is started.
For details about using the USB memory, see the *Instruction Manual*.

(1) insert the clamp into a hole near the USB port.
(2) firmly insert the USB memory all the way into the USB port.
(3) set the cable in a clamp

USB strap clamp
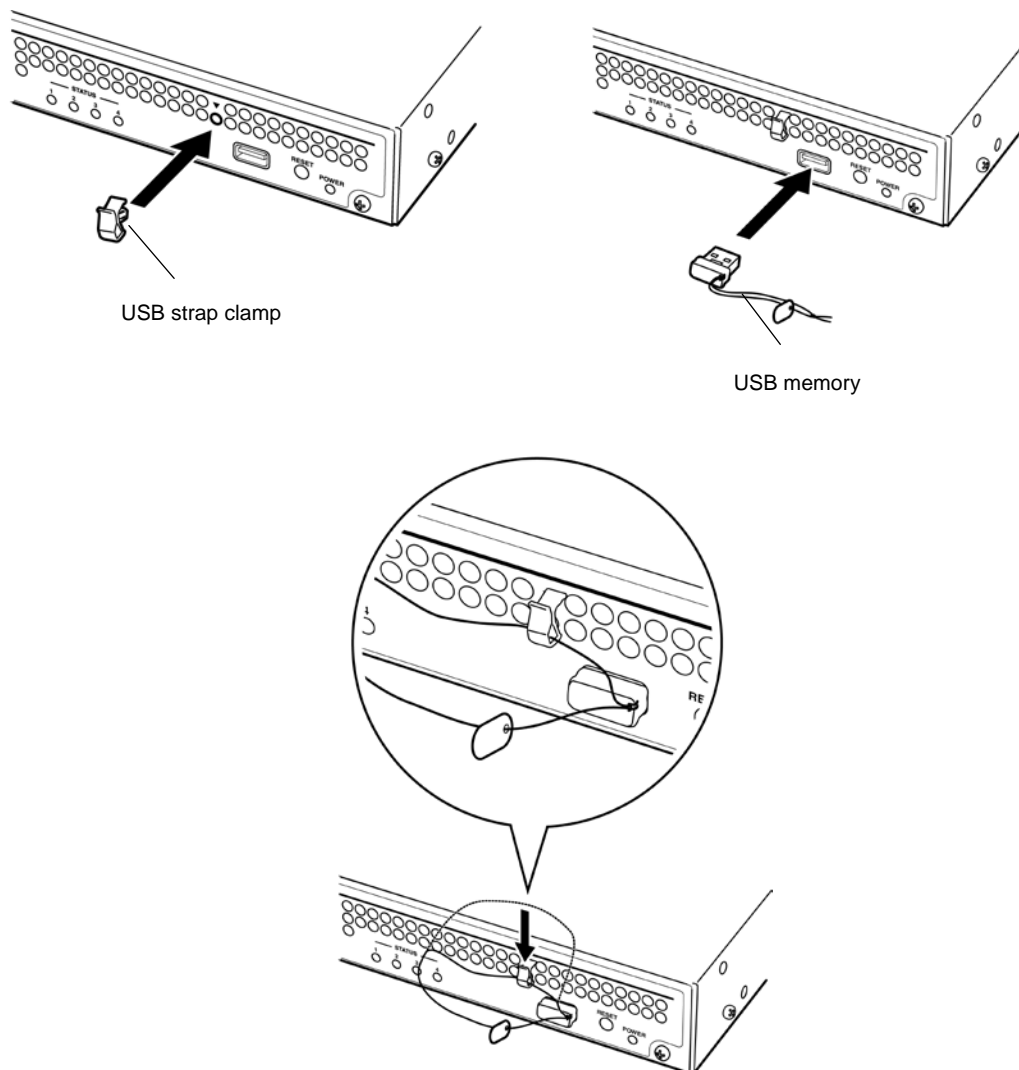
USB memory

Figure 4-1 Insert the USB memory

4.2 Remove the USB memory

Before removing the USB memory, refer to the *Instruction Manual*, and then make sure that the NS-2250 is in a state in which the USB memory can be removed or that the power is off.

(1) remove the USB memory from USB port.
(2) remove the strap of USB memory from USB strap clamp

Caution　　　　While the STATUS 4 light is on, do not remove the USB memory. If the USB memory is removed during operation, the operation of the NS-2250 is not guaranteed.

Appendix A
Specifications of the NS-2250

Appendix A describes the hardware specifications of the NS-2250.

A.1 Specifications of the NS-2250

Table A-1 shows the specifications of the NS-2250.

Table A-1 Specifications of the NS-2250 (NS-2250-16/32/48)

Item		Specifications
		NS-2250-16/32/48
Power voltage*		AC100V-240V±10%
Power frequency*		50/60Hz±3Hz
Current consumption*		AC 100 V: 0.32 A (maximum) AC 240 V: 0.18 A (maximum)
Power consumption*		AC 100 V: 17 W (maximum) AC 240 V: 17 W (maximum)
External dimensions (See Figure A-1)	Width	425.5mm
	Depth	261.1mm
	Height	43.7mm
Weight		About 3.4 kg
Environmental conditions	Operation	5 to 40 °C, 15 to 85% RH (no condensation)
	Storage	-10 to 60 °C, 90% RH or less (no condensation)

425.5

261.1

43.7

482.6
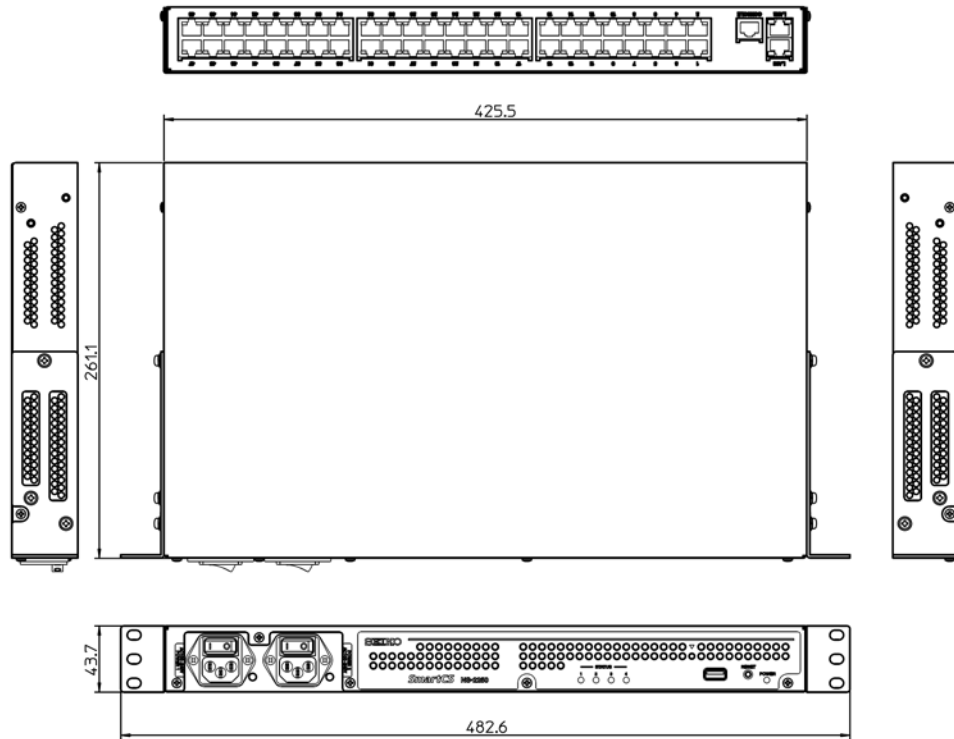
(Unit: mm)

Figure A-1 Exterior dimensions of the NS-2250-16/32/48

A.2 CONSOLE port

The CONSOLE port is an RS-232-compliant DTE port.
This section shows the specifications of the CONSOLE port.
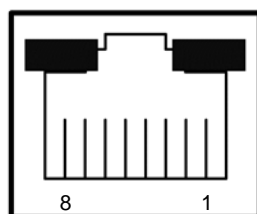
CONSOLE

8-pin modular connector (RJ45)

Figure A-3 CONSOLE port connector

Table A-2 Console port signals

Pin number	Name of signal	Direction of signal	Meaning of signal
1	RTS	Output	Send request
2	DTR	Output	Data terminal ready
3	TXD	Output	Sending data
4	GND	-	Signal ground
5	GND	-	Signal ground
6	RXD	Input	Receiving data
7	DSR	Input	Data set ready
8	CTS	Input	Sending ready

A.3 Serial ports

The serial ports are RS-232-compliant DCE ports.
This section shows the specifications of the serial ports.

8-pin modular connector (RJ45)
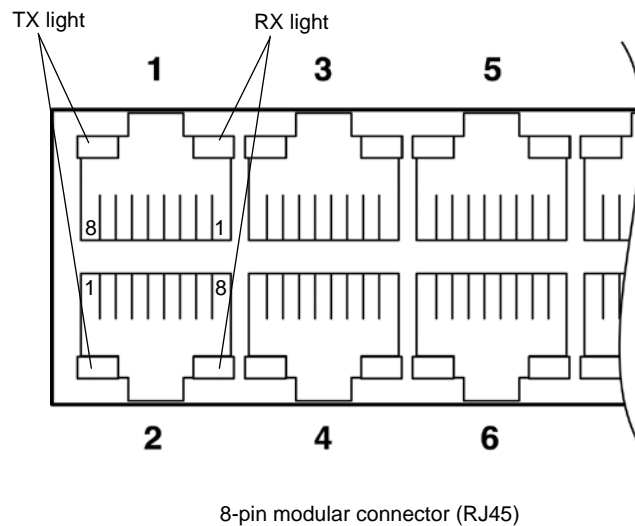
Figure A-4 Serial port connectors

Table A-3 Serial port signals

Pin number	Name of signal	Direction of signal	Meaning of signal
1	CTS	Input	Sending ready
2	DSR	Input	Data set ready
3	RXD	Input	Receiving data
4	GND	-	Signal ground
5	DCD	Input	Carrier detection
6	TXD	Output	Sending data
7	DTR	Output	Data terminal ready
8	RTS	Output	Send request

Caution   When a device to be connected to a serial port has an RJ45 serial port, always check the pin assignment of the connector of the target equipment before connection.
Depending on the pin assignment of the target equipment, connection may not be possible with a straight-through Ethernet cable.

A.4 LAN port

The LAN port can be used as a 10BASE-T/100BASE-TX/1000BASE-T port, and it supports auto-negotiation.

This section shows the specifications of the LAN port.

Speed light   **LAN1**   Link/ACT light

8-pin modular connector (RJ45)
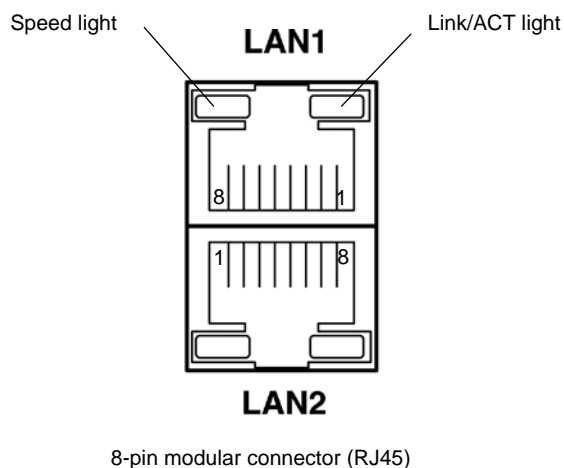
Figure A-5 LAN port connector

Table A-4 LAN port signals

Pin number	10BASE-T/100BASE-TX		1000BASE-T	
	MDI	MDI-X	MDI	MDI-X
1	TD+	RD+	BI_DA+	BI_DB+
2	TD-	RD-	BI_DA-	BI_DB-
3	RD+	TD+	BI_DB+	BI_DA+
4	Not used	Not used	BI_DC+	BI_DD+
5	Not used	Not used	BI_DC-	BI_DD-
6	RD-	TD-	BI_DB-	BI_DA-
7	Not used	Not used	BI_DD+	BI_DC+
8	Not used	Not used	BI_DD-	BI_DC-

Appendix B

DB9-RJ45 adapters

Appendix B describes a connection example for the CONSOLE port and serial ports of the NS-2250 and the specifications of the DB9-RJ45 adapter.

Chapter content

B.1　Connection example for the CONSOLE port and serial ports

The CONSOLE port and serial ports of the NS-2250 have RJ45 connectors,　but the CONSOLE port is a DTE port and the serial ports are DCE ports. Therefore, use the appropriate adapters and cables that match the wiring of the target equipment when connecting.

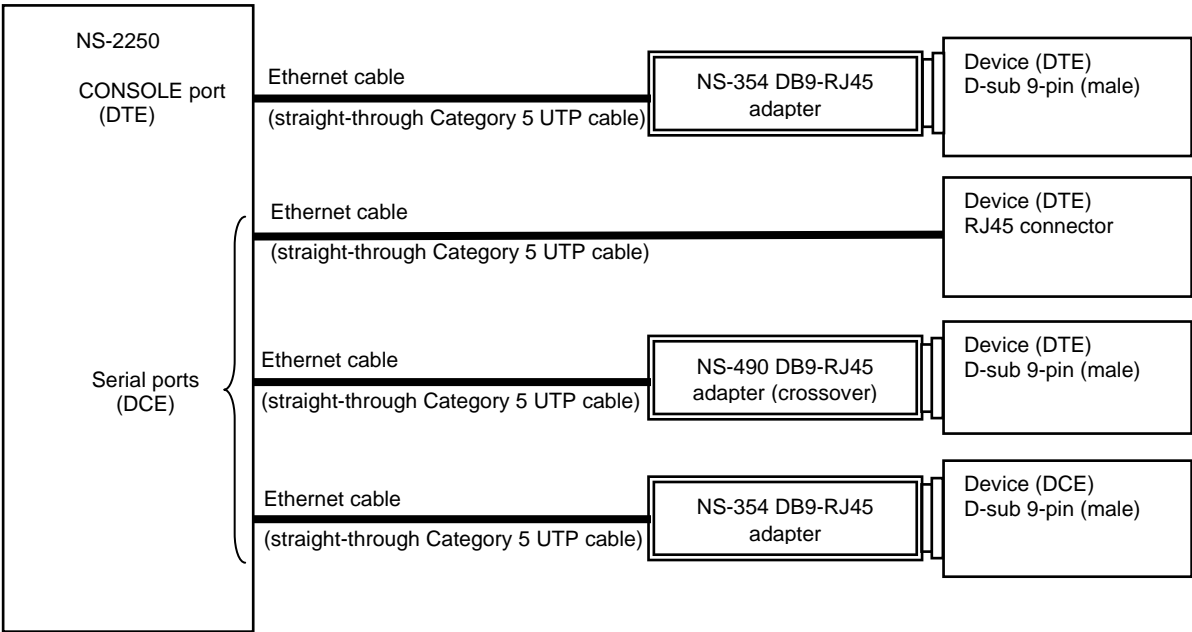Figure B-1 shows a connection example for the CONSOLE port and serial ports.

Figure B-1 Connection example for the CONSOLE port and serial ports

B.2 Wiring example for a DTE device with an RJ45 connector

Figure B-2 shows a wiring example for a serial port of the NS-2250 and a DTE device with an RJ45 connector.

NS-2250 (serial port)
RJ45 connector

Target equipment
RJ45 connector

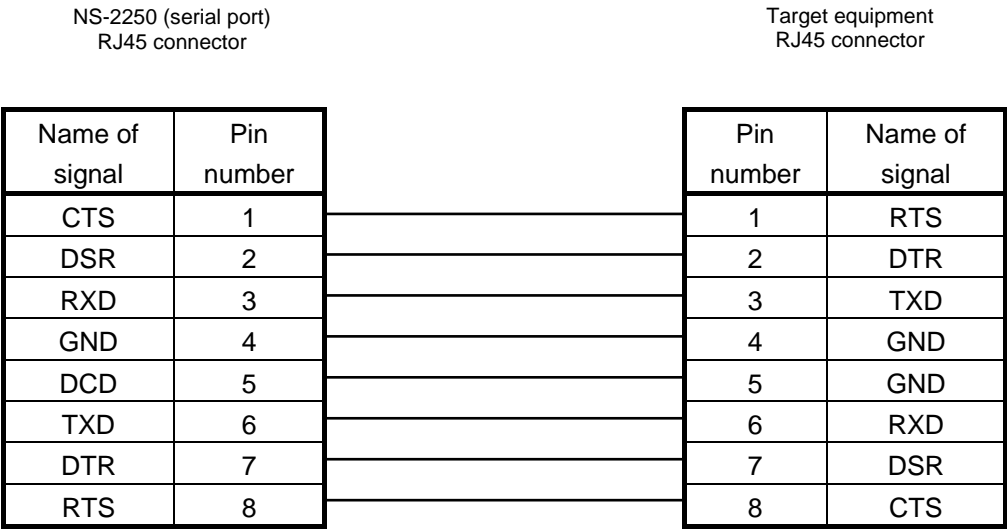| Name of signal	Pin number		Pin number	Name of signal
CTS	1		1	RTS
DSR	2		2	DTR
RXD	3		3	TXD
GND	4		4	GND
DCD	5		5	GND
TXD	6		6	RXD
DTR	7		7	DSR
RTS	8		8	CTS

Figure B-2 Wiring example for a DTE device with an RJ45 connector

Caution   You must change the wiring of the Ethernet cable in accordance with the pin assignment of the RJ45 connector of the target equipment to be connected. Always check the connector specifications before use.

B.3   NS-354 DB9-RJ45 adapter

This section shows the specifications of the included NS-354 DB9-RJ45 adapter.
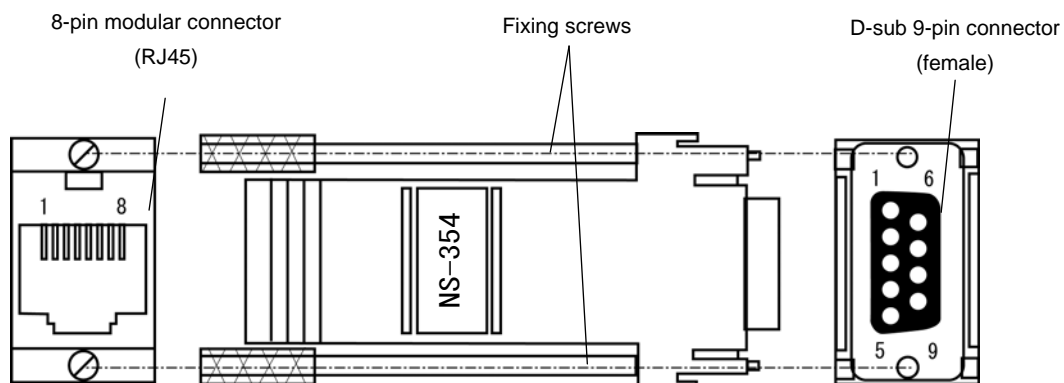
Figure B-3 Exterior of the NS-354 DB9-RJ45 adapter

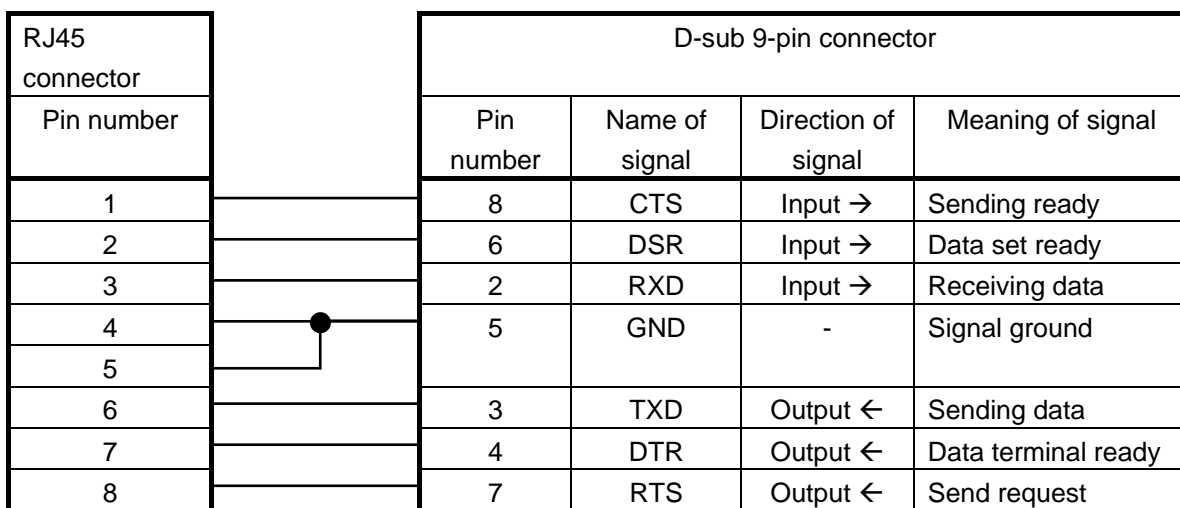| RJ45 connector		D-sub 9-pin connector			
Pin number		Pin number	Name of signal	Direction of signal	Meaning of signal
1		8	CTS	Input →	Sending ready
2		6	DSR	Input →	Data set ready
3		2	RXD	Input →	Receiving data
4		5	GND	-	Signal ground
5					
6		3	TXD	Output ←	Sending data
7		4	DTR	Output ←	Data terminal ready
8		7	RTS	Output ←	Send request

Figure B-4 Connection of the NS-354 DB9-RJ45 adapter

B.4   NS-490 DB9-RJ45 adapter (crossover)

This section shows the specifications of the NS-490 DB9-RJ45 adapter (crossover) (sold separately).
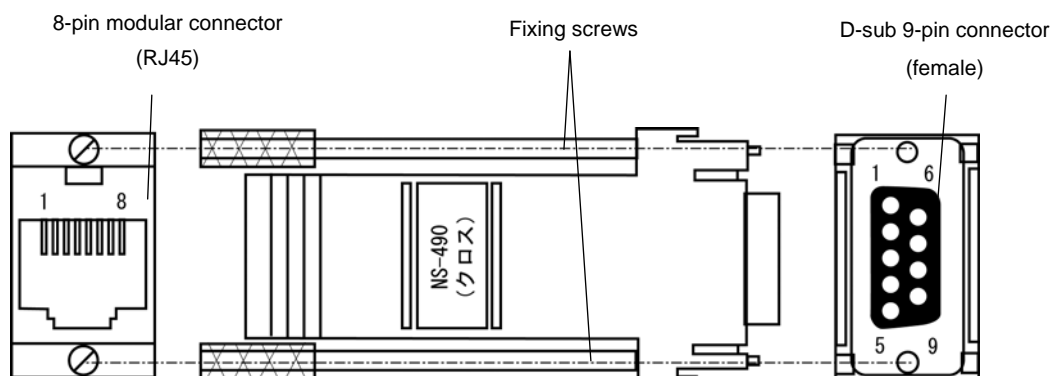

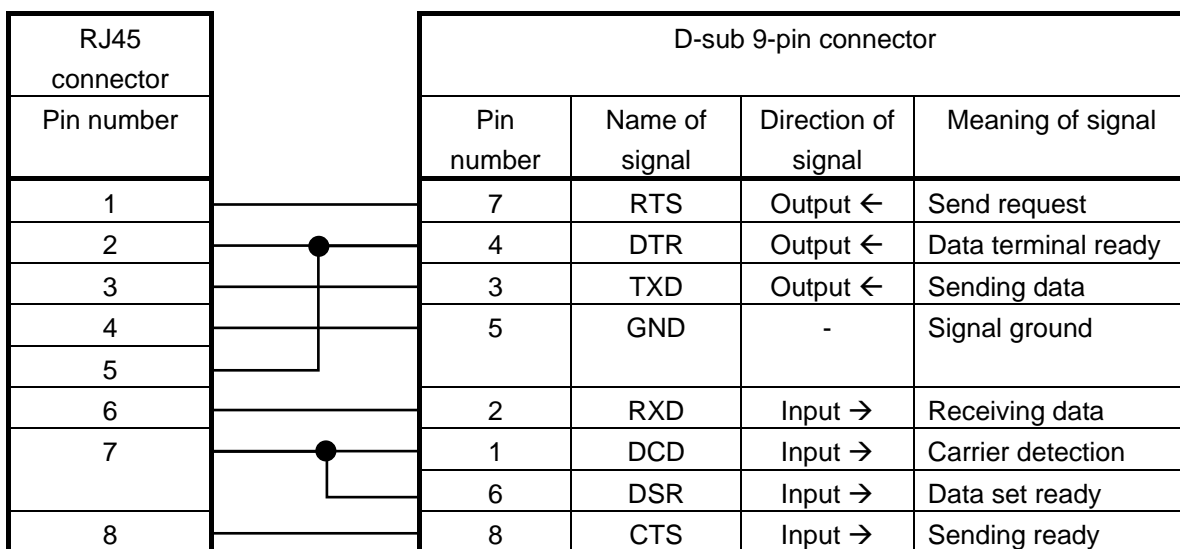Figure B-5 Exterior of the NS-490 DB9-RJ45 adapter (crossover)

RJ45 connector		D-sub 9-pin connector			
Pin number		Pin number	Name of signal	Direction of signal	Meaning of signal
1		7	RTS	Output ←	Send request
2		4	DTR	Output ←	Data terminal ready
3		3	TXD	Output ←	Sending data
4		5	GND	-	Signal ground
5					
6		2	RXD	Input →	Receiving data
7		1	DCD	Input →	Carrier detection
		6	DSR	Input →	Data set ready
8		8	CTS	Input →	Sending ready

Figure B-6 Connection of the NS-490 DB9-RJ45 adapter (crossover)

Appendix C
Compliance with safety standards

Appendix C describes the safety standards / regulations the NS-2250 support.

Chapter content

C.1   Supported safety standard / regulations
C.2   RoHS Compliance

C.1 Supported safety standards

Table C-1 shows the safety standards / regulations the NS-2250 support.

Table C-1   Safety standards / regulations

Item	Standards / Regulations
Safety	IEC 60950-1:2005 (2nd Edition); Am 1:2009 + Am 2:2013
	EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013
	UL 60950-1, 2nd Edition: Safety of Information Technology Equipment, Rev. October 14, 2014
Emissions	FCC Part15, Subpart B Class A
	EN 55032:2012 Class A
	EN 61000-3-2:2014
	EN 61000-3-3:2013
Immunity	EN 55024:2010
	EN 61000-4-2:2009
	EN 61000-4-3:2006+A1:2008+A2:2010
	EN 61000-4-4:2012
	EN 61000-4-5:2006
	EN 61000-4-6:2009
	EN 61000-4-8:2010
	EN61000-4-11:2004

C.2 RoHS Compliance

NS-2250 is compliant with EU RoHS directive 2011/65/EU.

Tuân thủ hạn chế các chất nguy hại trong các thiết bị điện và điện tử.