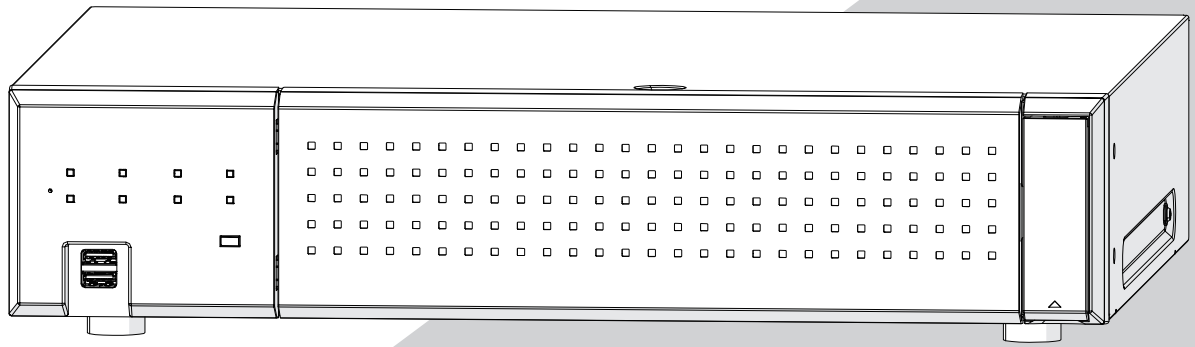
i-PRO

Installation Guide

Network Disk Recorder

Model No. WJ-NX310K Series

For professional use only



WJ-NX310K Series refer to WJ-NX310K, WJ-NX310KG and WJ-NX310KGV.

HDMI HIGH-DEFINITION MULTIMEDIA INTERFACE

The Operating Instructions and Important Information is on our support website (https://i-pro.com/global/en/surveillance/documentation_database).

Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.

The model number is abbreviated in some descriptions in this manual.

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Important Information

Refer to the Important Information on our support website for the following items.

Safety Information	**· Important safety information**
Introduction	**· Preface** **· System requirements for a PC** **· Network security, etc.**
Precautions	**· Precautions for use**
Major operating controls	**· Major operating controls and their functions**
User management	**· User/Host management**
Others	**· Specifications**

Operating Instructions

Refer to the Operating Instructions on our support website for the following items.

Setup via recorder's main monitor	**· Basic setup** Set up date & time and language [Date/Language] Camera setup [Camera] Set up recording/events [REC & event] **· Advanced setup** Configure the settings relating to monitors [Monitor] Configure the settings relating to network [Network] Configure the settings relating to the user management [User management] Configure the settings relating to maintenance [Maintenance] Manage the hard disk drives [HDD management] Configure the settings relating to the security [Security] Configure the settings relating to the extra functions [Extra function] **· Lists of the setting items**
Operation via recorder's main monitor	**· Monitor live images** Operate the camera **· Event function** **· Record images** **· Play recorded images** **· Useful functions** Copy recorded images Play back copied images with this recorder
Operation via PC web browser	**· Monitor live images** Operate the camera **· Event function** **· Play recorded images** **· Copy and download** Copy recorded images Download Play back the copied/downloaded images on a PC **· Setup**

Introduction

Standard accessories

Mouse ..... 1 pc.
Installation Guide ..... 1 pc.
Easy Start Guide ..... 1 pc.
Quick Reference Guide ..... 1 pc.
Activation Key Card ..... 1 pc.
Power Cord (WJ-NX310K) ..... 1pc.
Power Cord (WJ-NX310KG) ..... 2pcs.
Power Cord (WJ-NX310KGV) ..... 1pc.
Terminal Plug (12 pin) ..... 2 pcs.
Cable Clamp (for fixing cable connected to Terminal Plug) ..... 1 pc.
Rack mounting bracket ..... 2 pcs.
Rack mounting bracket fixing screw ..... 4 pcs.
Spring washer ..... 16 pcs.
HDD fixing screw ..... 16 pcs.
Power cord clamp ..... 1 pc.
Cable Clamp (for fixing USB cable) ..... 2 pcs.

About the user manuals

There are 5 manuals provided for this product as follows.

Installation Guide (this book):	Contains procedures of how to install/connect this product with devices.
Important Information:	Contains preface, precautions, and major operating controls and their functions and specifications. Refer to our support website (https://i-pro.com/global/en/surveillance/documentation_database).
Operating Instructions:	Contains descriptions of how to configure the required settings and how to operate this product. Refer to our support website.
Easy Start Guide:	This guide describes how to set up the minimum required settings for this product.
Quick Reference Guide:	Contains descriptions of how to operate functions frequently used.

For the latest information on the part numbers, versions and network cameras that can be connected, and information such as the addition of functions by upgrading the software of this product, please refer to our support website (https://i-pro.com/global/en/surveillance/training_support/support/technical_information).

In the manuals of this product, the network camera hereinafter referred to as camera, the personal computer hereinafter referred to as PC, and "hard disk drive" referred to as HDD depending on where it is written.
"NX310" in this manual refer to WJ-NX310K Series respectively.

The external appearance in the document may differ from the actual product within no influence range on operation due to improvement of the product.

About the symbol mark

The explanation of the symbol marks used in this product are as follows.

~	Alternation current symbol		Computer network	⏻	"ON"/"OFF" (push-push)
⎓	Direct current symbol		Mouse port		
	For indoor use only		USB port		
	Polarity of d.c. power connector		Functional earthing;functional grounding (US) symbol		

About Additional Camera Kit (option)

Number of cameras to be used in the system can be increased by purchasing the Additional Camera Kit (option). Refer to following table regarding camera numbers.

Additional Camera Kit WJ-NXE32W (license for 8 cameras)	NX310 only (No additional license)	one Additional Camera Kit (one additional license)	two Additional Camera Kit (two additional licenses)
	up to 16 cameras	up to 24 cameras	up to 32 cameras

Additional Camera Kit WJ-NXE33W (license for 16 cameras)	NX310 only (No additional license)	one Additional Camera Kit (one additional licenses)
	up to 16 cameras	up to 32 cameras

About Secure Communication Kit (option)

Registering a license of a secure communication kit (option) to the recorder enables to use the function that encrypts the video data. Each secure communication kit differs in the number of cameras that can be registered as shown in the table below. Use several licenses as necessary.

WJ-NXS01W	WJ-NXS04W	WJ-NXS16W	WJ-NXS32W
1 camera	4 cameras	16 cameras	32 cameras

When the product is accessible from the Internet

To prevent unauthorized access, note the following.

- Leave user authentication turned on.

Open Source Software

- This product contains software licensed under GPL (GNU General Public License), LGPL (GNU Lesser General Public License), etc.
- Customers can duplicate, distribute and modify the source code of the software under license of GPL and/or LGPL.
- For details on open source software licenses and source code, on the "Maintenance > System Management" page of the browser settings of this product, click "Click here for more information on the OSS used in this product." and then read the information displayed.
- Please note that i-PRO Co., Ltd. shall not respond to any inquiries regarding the source code.

AVC Patent Portfolio License

THIS PRODUCT IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL USE OF A CONSUMER OR OTHER USES IN WHICH IT DOES NOT RECEIVE REMUNERATION TO (i) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD ("AVC VIDEO") AND/OR (ii) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. ADDITIONAL INFORMATION MAY BE BTAINED FROM MPEG LA, L.L.C.
SEE HTTP://WWW.MPEGLA.COM

Precautions for installation

This product is designed to be used indoors.
This product is not operable outdoors. Do not expose this product to direct sunlight for hours and do not install the product near a heater or an air conditioner. Otherwise, it may cause deformation, discoloration and malfunction.
Keep this product away from water and moisture.

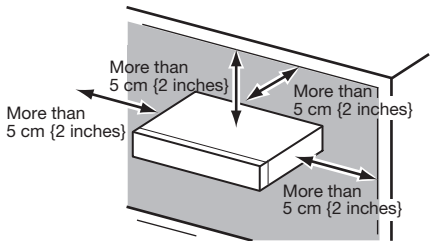
i-PRO Co., Ltd. assumes no responsibility for injuries or property damage resulting from failures arising out of improper installation or operation inconsistent with this documentation or through use of parts other than this product, such as locally procured parts.

Do not place this product in the following places:
- Locations exposed to direct sunlight
- Locations subject to having strong vibration or impact
- Locations near magnetic field sources such as a television or speakers
- Locations near the devices that emit large sound and generate vibration by sound pressure
- Locations where condensation forms easily, where temperature changes greatly or where humidity level is high
- Locations subject to steam and oil smoke such as a kitchen
- Locations which are not level
- Locations subject to dust
- Locations where it may get wet from rain or water splash

Do not install this product in locations where the product or the cables can be destroyed or damaged by persons with malicious intent.

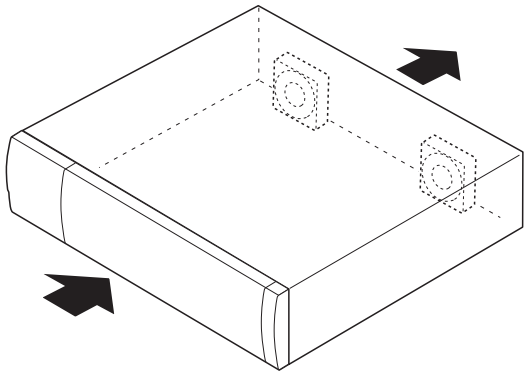
In order to prevent injury, the product must be securely mounted to a wall according to Installation Guide.

Place this product horizontally on a level surface.
Do not place this product in an upright position. When stacking multiple recorders, clear a space of more than 5 cm {2 inches} from both sides, the top, the bottom and the rear of the recorders.



- Do not stack this product in a stack.
- Do not place anything that can generate vibration on the top of this product.

Heat dissipation
To prevent this product from overheating, heed the following. Failure to observe this may cause fire or trouble.
- Do not block the cooling fan outlet or the ventilation holes with a wall, rack, cloth, etc. Maintain the product periodically to prevent dust from blocking ventilation holes.
- The lifetime of the cooling fan is limited by use. It is recommended to replace them after around 30000 hours of operation. Contact your dealer for replacement of the cooling fans.
- When the internal temperature rises, the fan noise may become louder.
- Clear a space of more than 5 cm {2 inches} from both sides, the top, and the rear of the product. Do not block the ventilation holes on the front side since this product is designed to cool the hard disk drives by drawing in air from the front.



Avoid placing this product near noise sources
If the cables are placed near noise sources such as fluorescent lamps, noises may be produced. In this case, rewire avoiding the noise sources, or move the product to a place far from the source.

Grounding
Confirm that the wire is connected from the SIGNAL GND terminal to earth ground.
A grounding connection must be made before connecting the power plug or this product to the main power supply. When disconnecting the grounding wire, make sure that the power plug of this product is disconnected from the main power supply.

Avoid placing receptacles that contain liquids such as water near this product.
If liquid spills onto this product, it may cause fire or an electric shock.

About sulfuration of rubber products
Do not leave rubber products containing sulfur (packing and rubber feet) close to the recorder or in the same storing box. Sulfur constituent from the rubber products may cause sulfuration corrosion on electrical parts or terminals and defects in the recorder.

Equipment classification and power source indication label
Refer to the indication label on the bottom side of this unit for the equipment classification, power source, and other information.

Basic operations

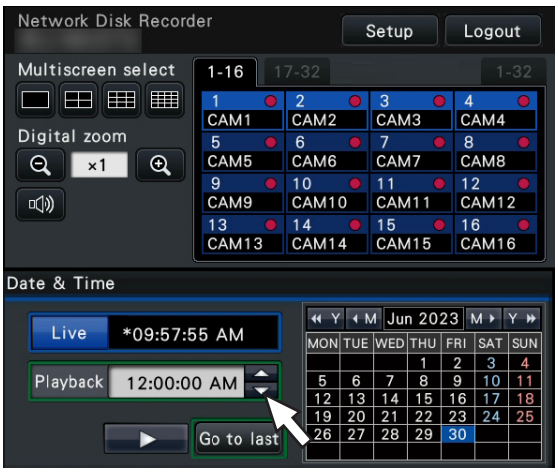
This section explains operation of a mouse and the soft keyboard, and setting screen only.
The recorder can be operated using the mouse (included) connected to the mouse connection port on the front side of the recorder.
It is also possible to perform settings and some operations of the recorder from the web browser. Refer to the Operating Instructions for descriptions of how to operate from the web browser and the configurable settings using the web browser.

Connection of a mouse

Connect the included mouse to the mouse connection port on the front side of the recorder.
→ The mouse cursor will be displayed on the main monitor.

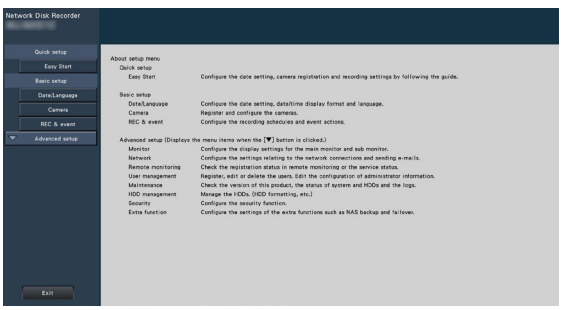
Mouse operation

Left-click the desired buttons and tabs on the screen. (Hereinafter, "Left-click..." will be described as "Click..." in this document.)
When the entry field has the [▲] and [▼] buttons or the [▼] button, the setting value can be changed using the mouse wheel.
When no operation is made for 10 seconds or more, the mouse cursor will be hidden. The mouse cursor will be displayed again when the mouse is moved.



Display method of the setting screen

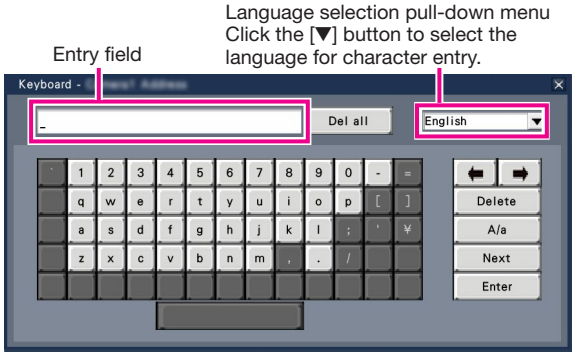
Click the [Setup] button.
→ The top screen of the setup menu will be displayed.



About the operation of on-screen keyboard

Use the on-screen keyboard to enter characters for the setting items. When clicking the [ ] icon beside the entry field, the on-screen keyboard will be displayed, and it will become possible to enter characters by clicking the character keys on the keyboard.

On-screen keyboard screen



[Del all] button
Deletes all the characters in the entry field.

[←]/[→] button
Move the cursor in the entry field to either direction.

[Delete] button
Deletes a character pointed by the cursor in the entry field.

[A/a] button
This button changes the characters to be entered between capital letters and small letters.

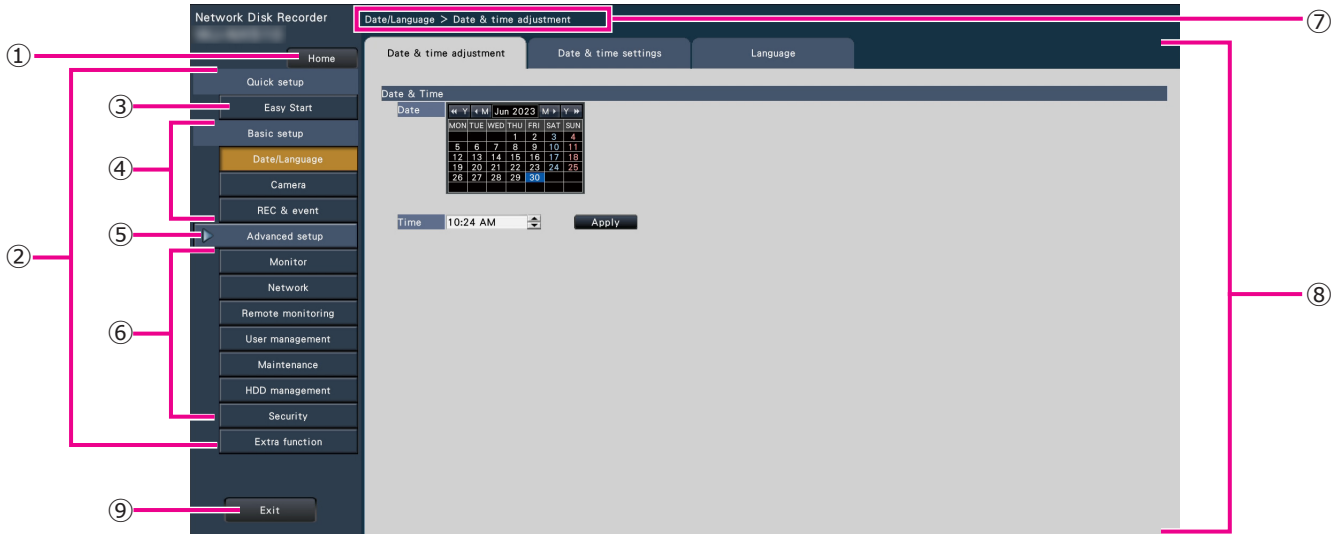
[Next] button
Changes the keys to be displayed for character entry.
The displayed keys are changed as follows:
Keys for the language selected by the language selection pull-down menu → Combination characters → Special characters

[Enter] button
Determines the entered characters and closes the on-screen keyboard.

Note:
- Basic operations are also applied to the "Login" window.
- Click the [×] button to close the window without determining the entered characters.

Setup menu

Configuration of each setting item in the setup menu should be completed in advance to use this recorder.
The setup menu has the following levels for the setting items. On "Easy Start", the minimum settings required to operate the recorder will be performed, but other settings will remain default. On the [Basic setup] or [Advanced setup] page, the settings can be customized in accordance with a variety of operational modes.
The following is the example of the setup menu that describes the features and operations.
The setup menu will be displayed when clicking the [Setup] button (☞ Page 7) at the upper right corner of the operational screen on the main monitor.
The buttons of the setup pages will be displayed on the left column of the setup menu.



① **[Home] button**
It is possible to return to the top screen (☞ Page 7) of the setup menu from any setup page.

② **Setup menu panel**
Displays buttons of the setup pages.

③ **[Easy Start] button**
It is possible to configure the minimum settings required to operate the recorder, such as date & time and camera registration.

④ **[Basic setup] – Setup page buttons**
Each "Basic setup" page will be displayed.

⑤ **[Advanced setup] button**
The buttons to open the corresponding setup pages of the "Advanced setup" menu will be displayed. When clicking this button again, the buttons will be hidden.

⑥ **[Advanced setup] – Setup page buttons**
Each "Advanced setup" page will be displayed.

⑦ **Hierarchical display**
The name of the current setup page will be displayed in the hierarchy. The tab name will also be included.

⑧ **Setup page**
Displays each setup page. If the current setup page is composed of two or more tabs, it is possible to change the page display by clicking the tabs.

⑨ **[Exit] button**
Applies the settings to the recorder and closes the setup menu to return to the operational screen (☞ Page 10).

Except for some cases, the descriptions of this document follow the hierarchical display and setup pages.

Important:
- If the settings are applied, all login users will be forcibly logged out.

Operations flow

- **Professional knowledge on and experience in network and the HDD are required for the settings and changes of the operation.**
- **The main monitor is required for the settings.**
  *** The settings can be done through a web browser on the PC (Refer to the Operating Instructions).**
- **The PC is required for reading the Important Information, the Operating Instructions and camera settings.**
- **The operations flow is explained using the single mode operation of the HDD.**

1 **Obtain the license (Registration Key)**
☞ **Page 11 and Activation Key Card**

Obtain the "Registration Key" of the recorder by following the instructions on the included Activation Key Card. To increase the number of connected cameras, or to use the secure function, get the registration key of the additional license according to the appropriate Additional Kit (option). The obtained "Registration Key" will be used in Step **6**.

↓

2 **Installation of the hard disk drive**
☞ **Page 12**

Install the hard disk drives in the recorder.

↓

3 **Rack mounting**
☞ **Page 14**

Install the recorder in the rack.
Go to step **4** when not installing it in the rack.

↓

4 **Connections**
☞ **Page 15**

Connect the camera, mouse, PC, monitor, alarm input/output cable, etc. to this product.

↓

5 **Turn on the devices**
☞ **Page 23**

Turn on the power to launch in the following order.
①Turn on the power of the camera and the monitor.
②Turn on the power of the recorder.
③Register as an administrator.

↓

6 **Register the license (Registration Key)**
☞ **Page 25**

Register the Registration Key of the recorder. If necessary, register the "Registration Key" for each Additional kit.

Important:
- Be sure to register the "Registration Key" of the recorder. If the "Registration key" of the recorder is not registered, the Additional Kit cannot be registered.

After registration, click [Restart] button on the license registration screen to reboot the recorder and activate the license.

Operations flow (continued)

7 **Initialize the hard disk drive**
☞ Page 27

Initialize the hard disk drives that were installed at step **2**.

8 **Configure the minimum settings [Easy Start]**
☞ Refer to the attached "Easy Start Guide"

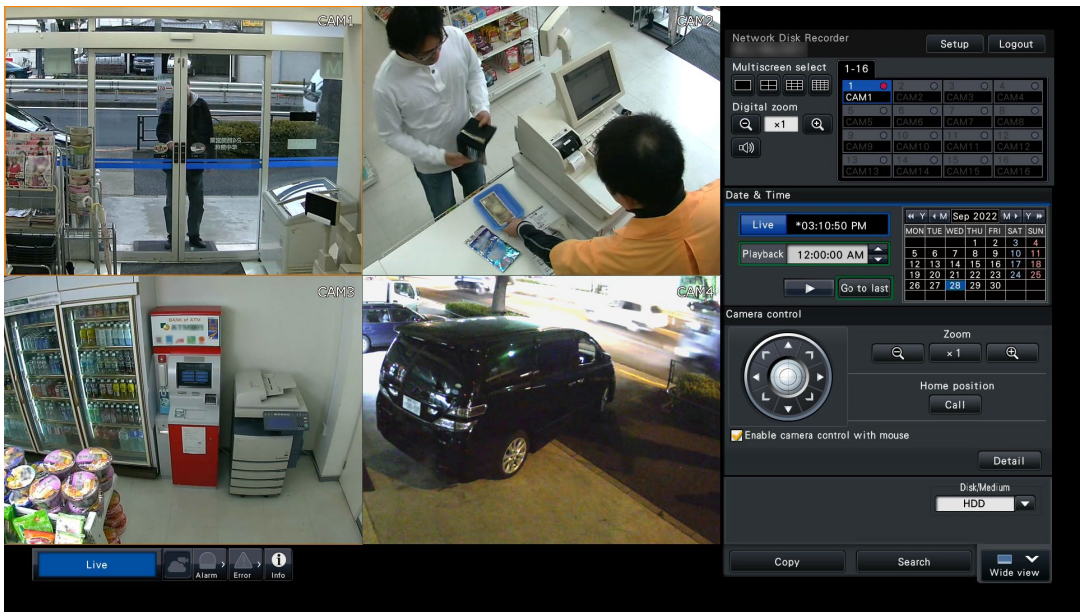
Register the date & time and cameras on "Easy Start". When it is not necessary to change other default settings, it is possible to start operations.

Setup
☞ Operating Instructions (on our support website)

If necessary, perform the detailed settings for each function.

Start operations

When the camera image is displayed on the main monitor or the web browser on the PC and can be recorded or played, the recorder is ready for operation.



Example of an operational screen

1 Obtain the license (Registration Key)

Keep the "Activation Key Card" included in the recorder nearby.
Obtain the "Registration Key" of the recorder by following the instructions on the included Activation Key Card.
To increase number of connected cameras, get the registration key number of the additional camera license according to the Additional Camera Kit (option).
To use the secure function, get the registration key number of the additional secure license according to the Secure Communication Kit (option).
* Each additional kit is the "Activation Key Card" with "the recorder ID number, activation ID number" for the applicable additional license.

Note:
- A PC or a smartphone accessible to the Internet is necessary to acquire the registration key number.

2 Installation of the hard disk drive

Before installing the hard disk drives, turn off the power of the recorder first. When replacing the hard disk drives, the procedures will be same as those of installation. When installing or replacing the hard disk drives for playback use only (hard disk drives that are formerly used for recording), perform the link process.

Important:

- When securing the hard disk drives to the HDD brackets, do not mistake the direction of the connectors. (Do not install the hard disk drives in the opposite direction.)
- When installing hard disk drives, use a low-torque powered screwdriver or a torque screwdriver to tighten screws with the specified torque.
- Hard disk drives are precise devices. Handle with care while keeping the following in mind.
  - Do not subject the hard disk drive to any vibration or impact.
  - Before touching the hard disk drive, eliminate static electricity by touching a steel locker, etc. When holding the hard disk drive, hold the both sides of the hard disk drive.
  - Do not touch the circuit board or the connectors to prevent the hard disk drive from damaging by static electricity.
- Contact your dealer for hard disk drives that works on the recorder. Please be forewarned that operation with any hard disk drive other than the specified models is not guaranteed under any circumstances.
- When using multiple hard disk drives, use the same model.
- If different models are used together, even when the capacities of them are the same, the available capacity may be a few percent smaller.

Note:

- Hard disk drives are locally procured. Contact your dealer for purchasing, installing, and replacing the hard disk drives.

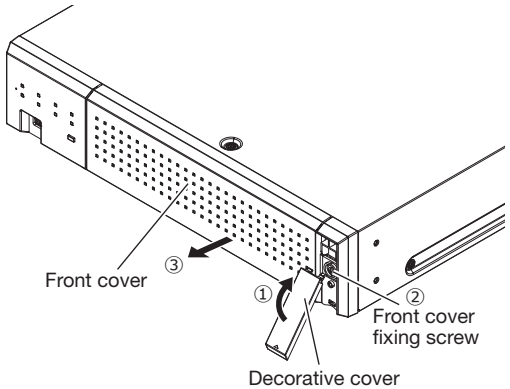
Install the hard disk drives

Installation or replacement of the hard disk drives

Step 1

Remove the front cover

①Open the decorative cover upward.
②Undo the front cover fixing screw.
③Pull out the right side of the front cover, and then remove the front cover.



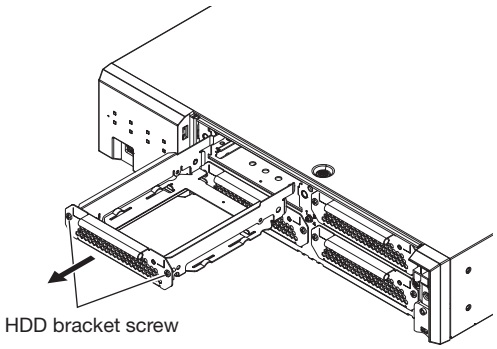
Note:

- Be careful not to drop the front cover when undoing the front cover fixing screw.

Step 2

Remove the HDD bracket

Undo the HDD bracket screws (×2) and pull out the HDD bracket.

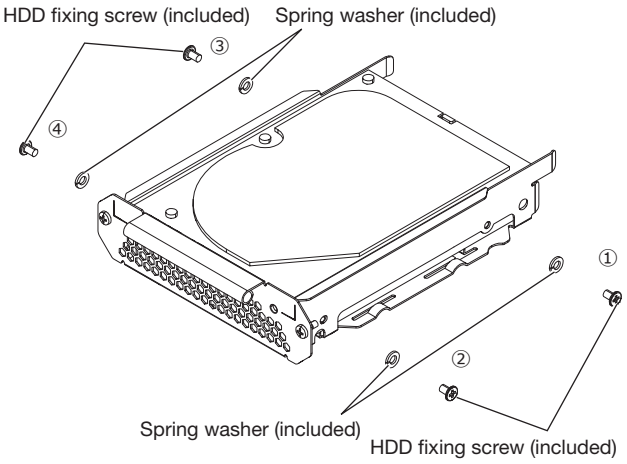


2 Installation of the hard disk drive (continued)

Step 3

Install the HDD in the bracket

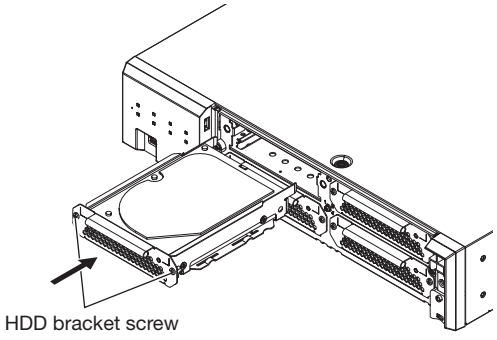
Fix the HDD using 4 HDD fixing screws (included) and 4 Spring washers (included).
Tighten the screws in the order of ① to ④.
(Tightening torque: 0.49 N·m {0.36 lbf·ft})



Step 4

Install the HDD bracket

Install the HDD bracket and tighten the HDD bracket screws (×2) previously removed in Step 2 to secure.
(Tightening torque: 0.59 N·m {0.44 lbf·ft})



Step 5

Fit the front cover as it was.

Attach the front cover by following Step 1 in reverse order.
The tightening torque of the front cover fixing screw is 0.59 N·m {0.44 lbf·ft}.

(When replacing the hard disk drives)

When replacing a hard disk drive with another one, it is necessary to perform the removal process. In this case, do the following.

Step 1

Perform the removal process of the hard disk drive. (☞ Operating Instructions)

Step 2

Turn off the power of the recorder. (☞ Page 24)

Step 3

Pull out the HDD bracket from the inside of the front cover of the recorder by referring to Step 2 of "Install the hard disk drives" (☞ Page 12).

Step 4

Install the hard disk drive into the HDD bracket by referring to Step 3 of "Install the hard disk drives".

Step 5

Insert the HDD bracket with the hard disk drive into the HDD slot by referring to Step 4 of "Install the hard disk drives".

Step 6

Turn on the power of the recorder. (☞ Page 23)
→ Then, format the new HDD.
When the formatting is completed, the hard disk drive will become operable.
When the hard disk drive is formerly used for recording, perform the link process (☞ Operating Instructions) on the "HDD management" page.
The status of hard disk drive can be checked on the setup menu - the "Maintenance" page - the "HDD information" tab. (☞ Operating Instructions)

3 Rack mounting

Install the recorder in an EIA standard 19-inch rack (Depth: 550 mm or more).

Note:

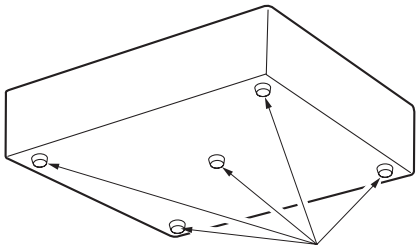
- Use four M5 × 12 mm screws (locally procured) to install the recorder in a rack.
- The illustration on this page is schematic. Details of the shape are omitted.

Installation procedure

Step 1

Remove the five rubber feet from the bottom of the recorder using a flathead screwdriver.

Use a screwdriver to remove the screws holding the rubber feet.



Remove rubber feet

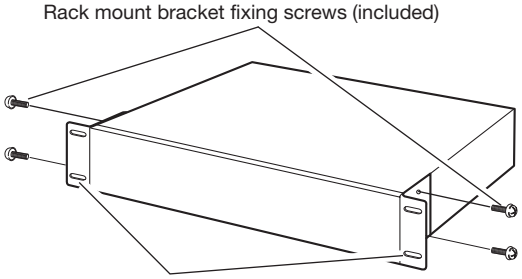
Step 2

Attach the rack mount brackets (included) on both sides of the recorder.

Secure them using the rack mount bracket fixing screw (included) (×4).

Tightening torque: 0.88 N·m ~ 1.08 N·m {0.65 lbf·ft ~ 0.80 lbf·ft}

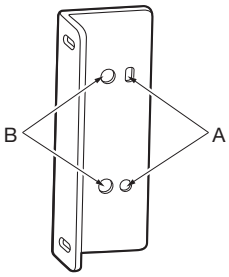
Rack mount bracket fixing screws (included)



Rack mount brackets (included)

Note:

- The following illustration shows two types of mounting holes in the rack mount bracket. Please use the holes of A.

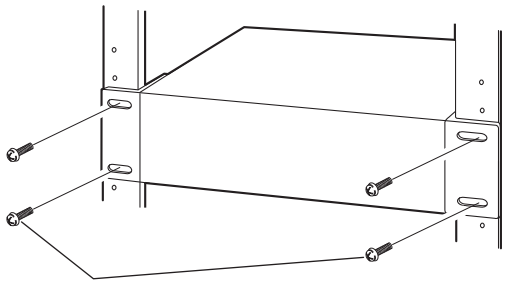


Step 3

Install the recorder in the rack by using four rack mounting screws.

Secure using the rack mounting screws (×4).

Tightening torque: 2.0 N·m ~ 2.4 N·m {1.48 lbf·ft ~ 1.78 lbf·ft}



Rack mounting screws (M5 × 12 mm, locally procured)

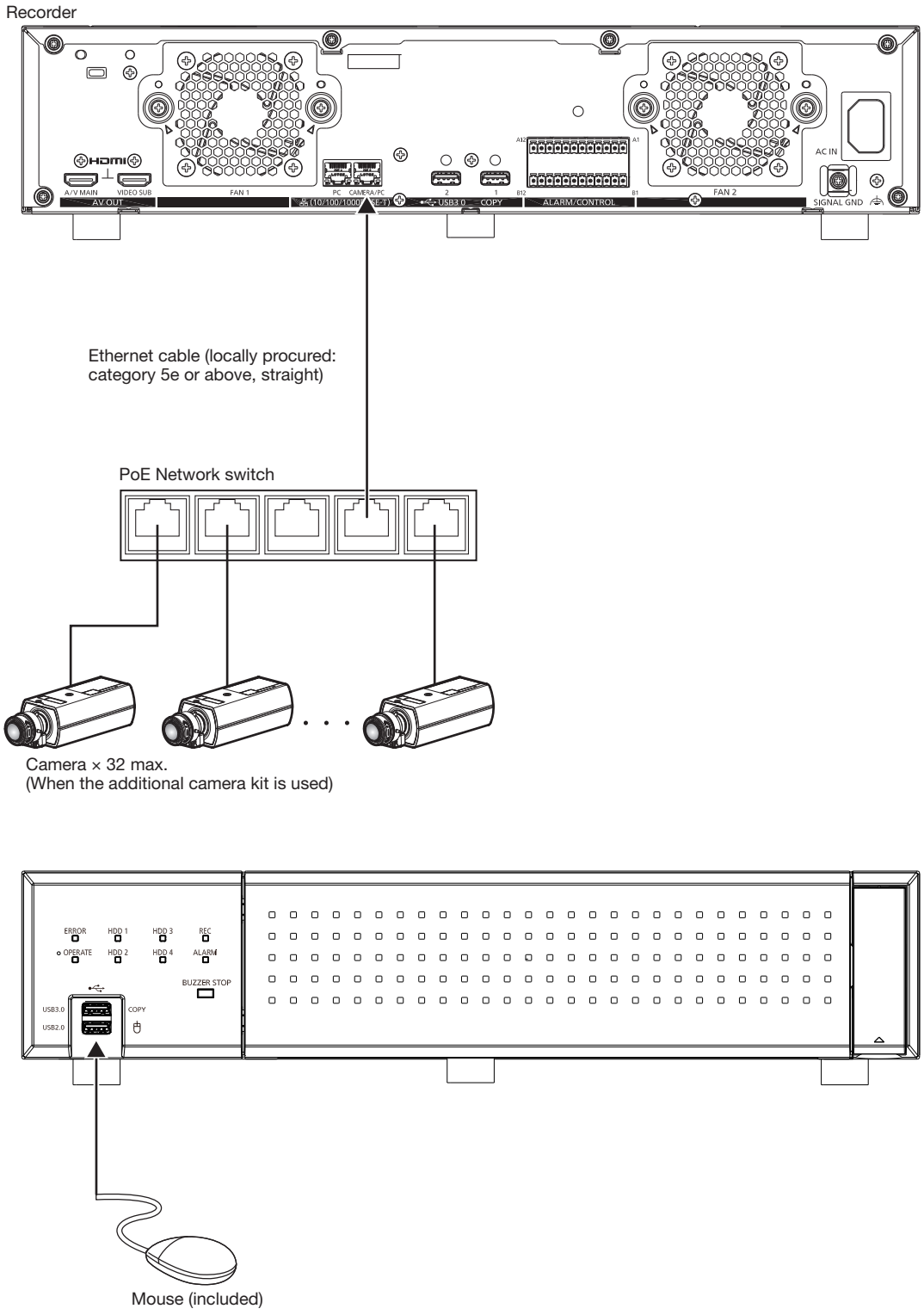
Important:

- The operating temperature range of this product is 0 °C ~ +45 °C {32 °F ~ 113 °F}.
  * HDDs deteriorate at high temperatures, affecting their service life. It is recommended that the product be used at a temperature of about +25 °C {77 °F}.
- The following measures should be taken when installing the rack to ensure that the product is used within the operating temperature range.
  - Install a fan or other equipment to lower the temperature inside the rack.
  - Allow a distance of at least 1U (44 mm {1-23/32 inches}) between the top and bottom of the product.
  - Do not put doors on the front of the rack or block the sides.

4 Connections

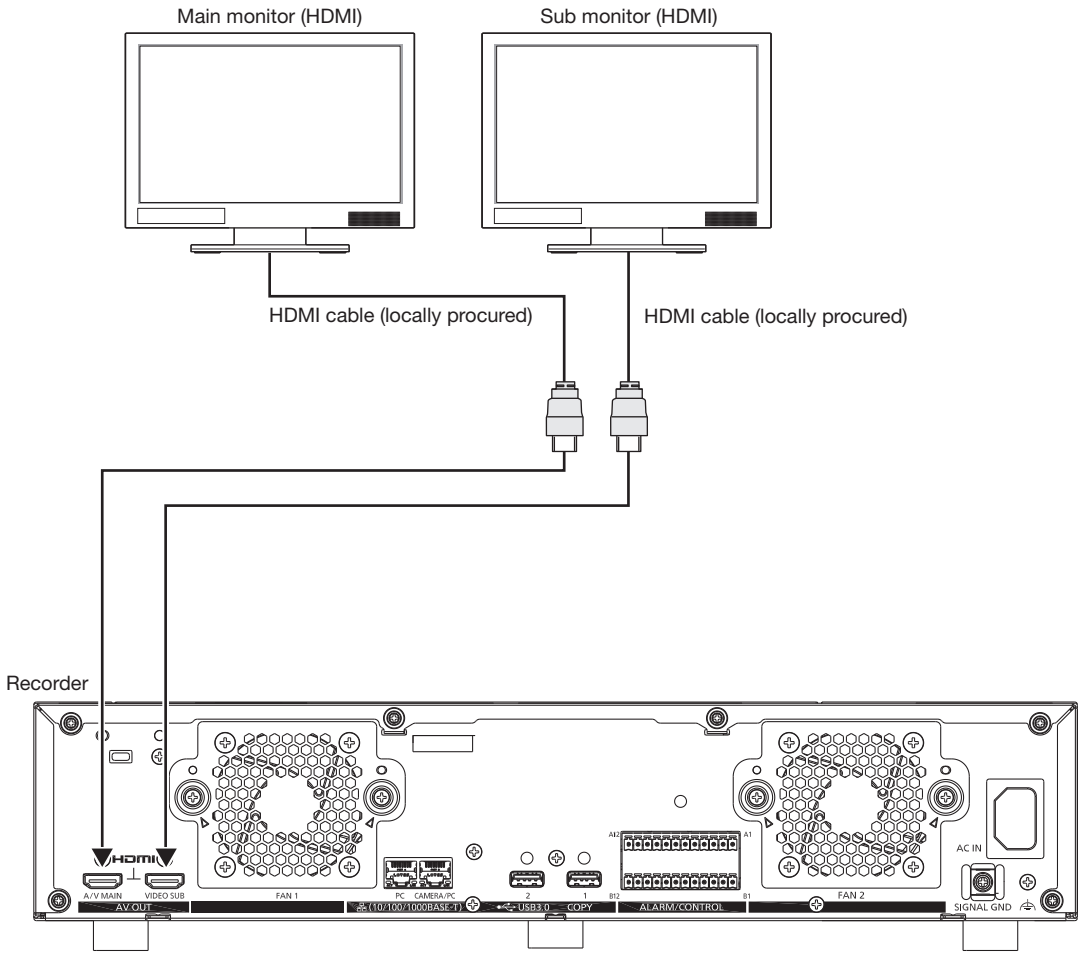
Connection of cameras and a mouse

Up to 32 cameras can be connected to the Camera/PC port of the recorder via a PoE Network switch (locally procured).
Use a Ethernet cable (straight) to connect the recorder and the PoE Network switch.
Connect the included mouse to the mouse connection port on the front side of the recorder.



Connection of monitors

The main monitor (HDMI), which displays live images as well as playback images and setting menus, is connected to the HDMI (AV MAIN) terminal using an HDMI cable (locally procured). The sub monitor (HDMI) is also connected to the HDMI (VIDEO SUB) terminal using an HDMI cable (locally procured).



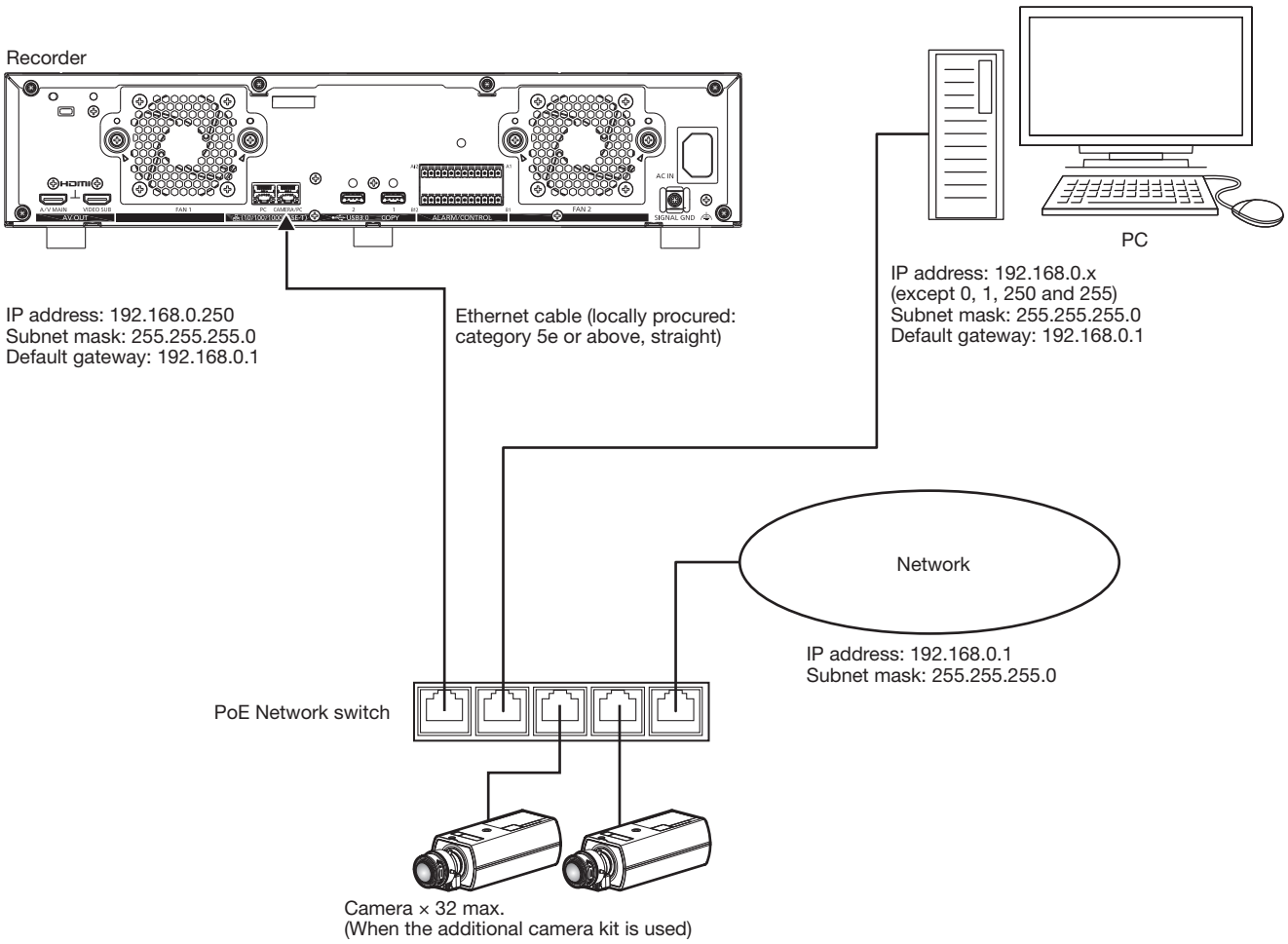
Note:

- Use "High Speed HDMI® Cable". When the main monitor is used in 4K/25P(30P), use a 10.2 Gbps compatible HDMI cable.
- To maintain the stable performance without deteriorating the image quality, use an HDMI cable which is 5 m {16 feet 5 inches} or shorter.
- Audio is output from the main monitor, and is not output from the sub monitor.

Connection of a PC

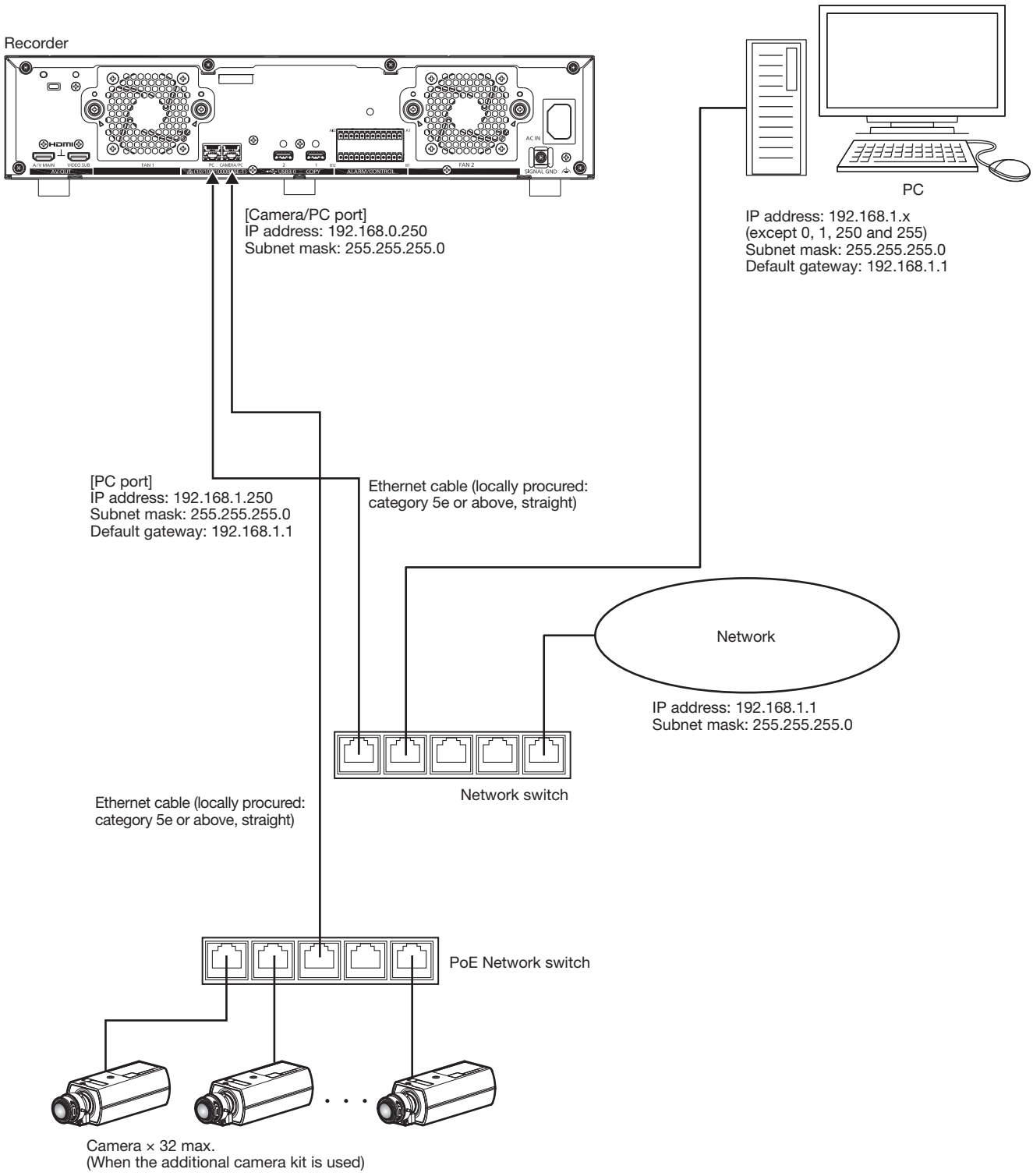
When PC and the camera are in the same network

When the PC and the camera are configured on the same network, connect the PC to the Camera/PC port via a PoE hub.



When PC and the camera are in different networks

When the PC and the camera are configured on different networks, connect the PC to the PC port via a switching hub.



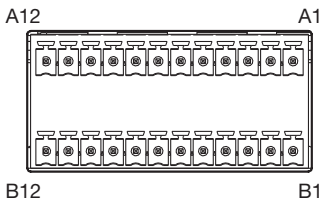
Note:

- Cameras shall be connected to the camera/PC port. If the camera is connected to the PC port, the camera will not be detected automatically.

How to use the terminals of the ALARM/CONTROL

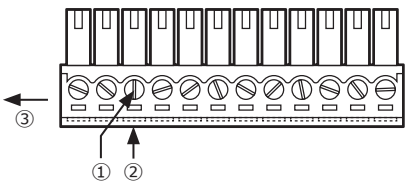
The ALARM/CONTROL connectors on the back is used when connecting an external device such as a sensor that outputs alarm signals or when installing an external alarm device such as a buzzer or a lamp outside.
Insert the unarmored cable into the terminal plug and then mount it on the ALARM/CONTROL connector on the back.
* The cable should be a single or twisted wire with AWG 26~16 and an exposed length of 9 mm {11/32 inches}.

ALARM/CONTROL connector B



ALARM/CONTROL connector socket

Cable connections



Terminal plug (12 pin)

① Loosen the screw of the desired terminal on the terminal plug.

② Tight the screw when the cable is fully inserted into the terminal hole.

③ Mount the terminal plug with the cable connected on the ALARM/ CONTROL connector socket on the back.

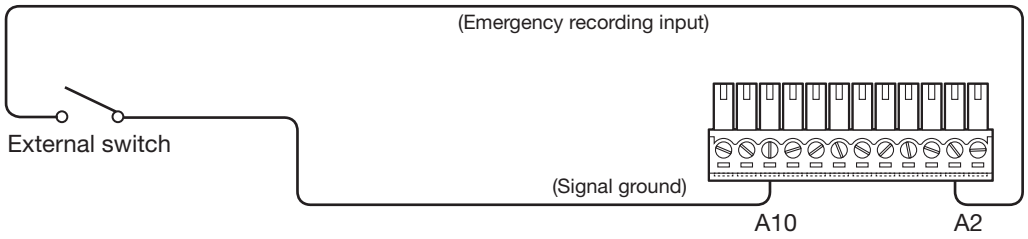
Pin array

Pin No.	Signal	Operation	Remarks
A1	Alarm reset input	Canceling the alarm display	Non-voltage make contact input +3.3 V pull-up Approx. 23 kΩ
A2	Emergency recording input	Starting emergency recording signal input	
A3	External recording mode switching input	Changeover to the external recording mode by the signal input	
A4	Network error output	A signal will be output upon detection of a disconnected Ethernet link or network protocol error	Open collector output 24 V DC max., –200 mA max.
A5	Camera error output	Signal output upon detection of a camera error	
A6	HDD error output/ Recording error output	Signal output upon detection of an HDD error or recording error in this product	
A7	Recorder error output	Signal output upon detection of a recorder error	
A8	General-purpose input/output 1	• Input and output can be assigned in the setting menu of this product. • The default value of the setting menu is "Not set"	Input: Non-voltage make-contact input 3.3 V pull-up approx. 23 kΩ Output: Open collector output Max. 24 V DC, -200 mA
A9	+5 V output	+5 V output	+5 V±0.5 V, 200 mA max.
A10	Signal ground		
A11	General-purpose input/output 2	Same as the General-purpose input/output 1	Same as the General-purpose input/output 1
A12	General-purpose input/output 3		

Pin No.	Signal	Operation	Remarks
B1	Alarm input 1	Event action will be performed according to the settings	Non-voltage make contact input +3.3 V pull-up Approx. 23 kΩ
B2	Alarm input 2		
B3	Alarm input 3		
B4	Alarm input 4		
B5	Alarm input 5		
B6	Alarm input 6		
B7	Alarm input 7		
B8	Alarm input 8		
B9	Alarm input 9		
B10	Alarm output	Alarm signal will be supplied at an event occurrence	Open collector output 24 V DC max., –200 mA max.
B11	Signal ground		
B12	General-purpose input/output 4	Same as the General-purpose input/output 1	Same as the General-purpose input/output 1

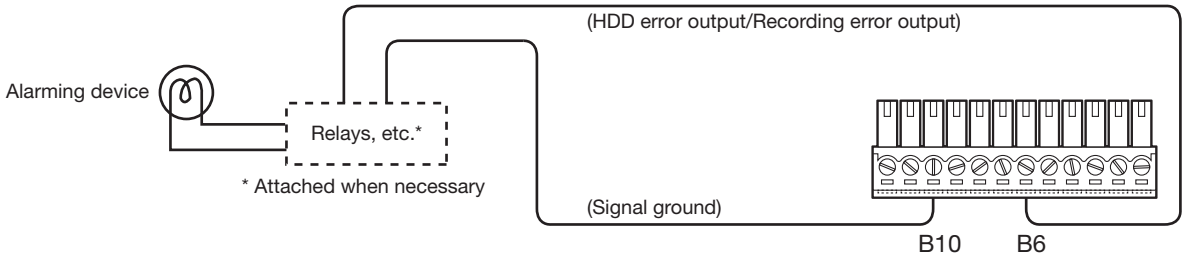
Connection example for emergency recording

When the external switch is turned on, emergency recording will start.
Recording time and recording rate for emergency recording differ according to the settings of "Emergency rec." on the setup menu. (Refer to the Operating Instructions.)



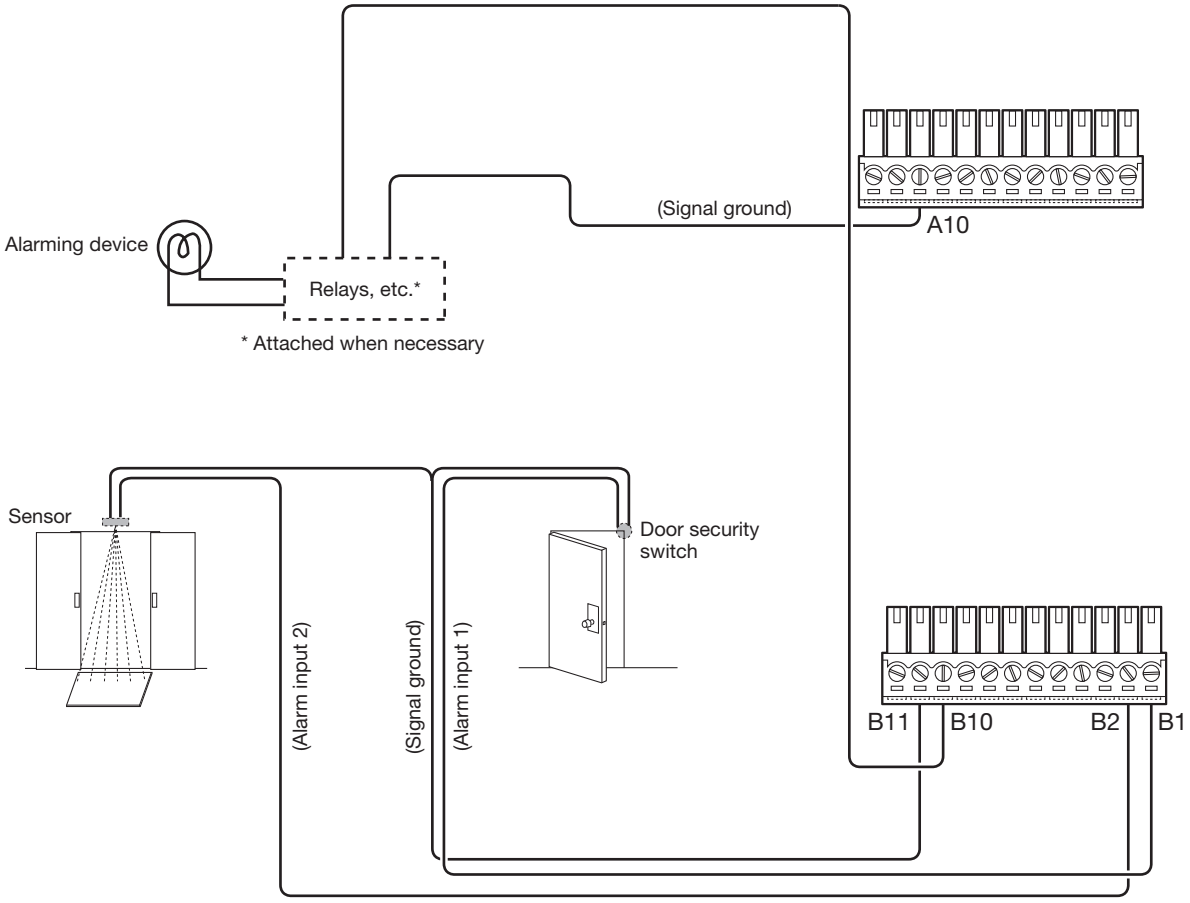
Connection example of control output

When an alarm device such as a buzzer or a lamp is connected, the signal output from terminal A4~A7 can be used to notify the status by sounding a buzzer or lighting a lamp.
The following example is of a connection with the HDD error output /Recording error output (terminal A6).



Alarm connection example

When a signal output from the other device is supplied to the terminal B1~B9 (Alarm input 1 to 9), recording or an alarm action will be performed in accordance with the settings. When an alarm device such as a buzzer, a lamp, etc., is installed outside, connect them to the terminal B10 (Alarm output).



Time and polarities of the ALARM/CONTROL connector

Terminal name	Active Time	Remarks
Alarm input	100 ms or more	N.O.: L active N.C.: H active
Alarm reset input	100 ms or more	L active
Emergency recording input	100 ms or more	L active
External recording mode switching input	100 ms or more	L active
Network error output	At an error occurrence until the period selected for "Error output duration" has passed*	L active
HDD error output/ Recording error output	At an error occurrence until the period selected for "Error output duration" has passed*	L active
Camera error output	At an error occurrence until the period selected for "Error output duration" has passed* or the camera reset	L active
Recorder error output	At an error occurrence until the period selected for "Error output duration" has passed*	L active
Alarm output	The set time on the setup menu	L active
General-purpose input/output (when set to input)	100 ms or more	For N.O.: L active For N.C.: H active
General-purpose input/output (when set to output)	At an error occurrence until the period selected for "Error output duration" has passed *	L active

* The error output duration is configured on the "Advanced setup" menu - the "Maintenance" page - "System setup" of the setup menu. (☞ Operating Instructions)

Note:

- During "L active (Low active)", the logic will be implemented when the voltage level of signal is low.
- During "H active (High active)", the logic will be implemented when the voltage level of signal is high.

5 Turn on the devices

Turn on the power of the recorder

Turn on the power of the recorder. First, turn on the power of the monitor. When using the recorder for the first time, register the license for the recorder. (☞ Page 25)

Step 1

Connect the included power cord to the power cord inlet on the rear panel of the recorder, and insert the power plug to an outlet whose rating is as follows.

100 V - 240 V AC, 50 Hz/60 Hz

→ The [OPERATE] indicator on the front of the recorder will light, the system check will start, and the startup window will be displayed on the main monitor.

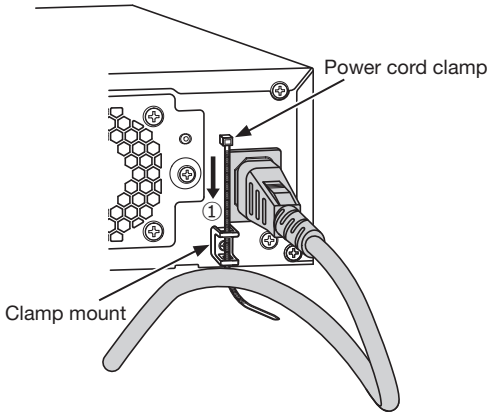
Important:

- Never turn off the power of the recorder during startup.
- Insert the power cord fully into the power cord inlet so that it will not loosen or come out.
- Fix the power cord firmly at 15 cm to 20 cm {5-7/8 to 7-7/8 inches} from the plug with the included power cord clamp to prevent the cable from unplugging.

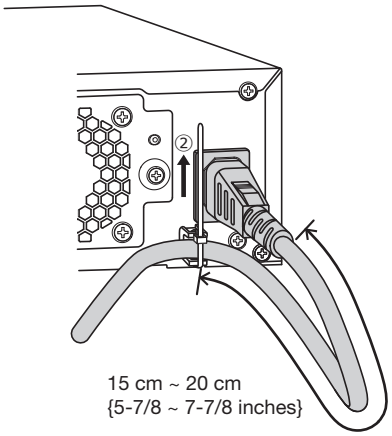
How to fix the power cord

Fix the power cord at 15 cm to 20 cm {5-7/8 to 7-7/8 inches} from the connector with the included power cord clamp passed through the clamp mount.

Fix the power cord so that it does not block the cooling fan outlet.



① Pass the power cord clamp through the clamp mount.

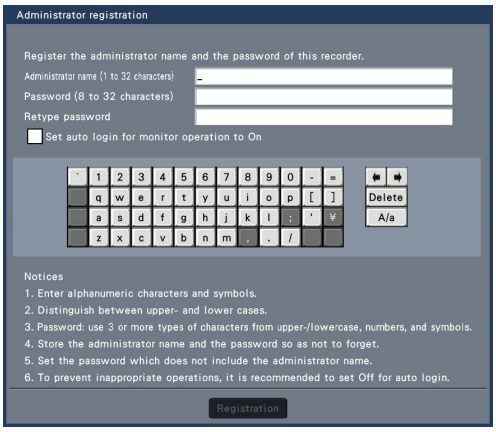


②Tighten the power cord at 15 cm to 20 cm {5-7/8 to 7-7/8 inches} from the connector and fix it to the clamp mount.

Cut the unnecessary part of the power cord clamp as necessary.

Step 2

The administration registration window is displayed on the main monitor.



Enter an administrator, a password and a password confirmation following the instruction on the display, and click [Registration].
Clicking [OK] on the displayed confirmation screen completes the administration registration.

Note:

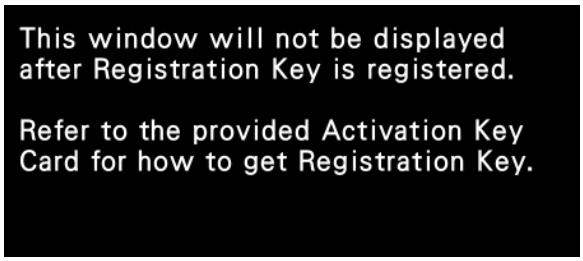
- If you check "Set auto login for monitor operation to On" and register, "Auto login" in the "User management" - "Basic" tab of the setup menu "Advanced setup" will be set to "On". We recommend setting it to "Off" to prevent unauthorized operation. (☞ Operating Instructions).

Precautions on storing the administrator name and the password

If you forget the set administrator name and password, you need to initialize* the recorder. Once the recorder is initialized, all the settings are deleted. Keep information on the administrator name and the password in a safe place where nobody can see it except you.
* Contact your dealer for initializing.

Step 3

If the license for the recorder has not been registered yet, the message asking you to register the "Registration Key" will be displayed after the completion of the system check and the administrator registration.



If the "Registration Key" for the recorder has not been registered yet, register the "Registration Key" by following the procedures on page 25.

Note:

- If the "Registration Key" for the recorder is once registered, the message asking you to register the "Registration Key" will not be displayed from the next time.

(When turn off the power of the recorder)

Follow the procedure below to turn off the power.

Step 1

During recording, set "Recording mode" on [Advanced setup] tab under "REC & event" under [Basic Setup] from Setup menu to "Off" to stop all recordings. (☞ Operating Instructions)

Step 2

Unplug the power plug from the power outlet after confirming that the [REC] indicator is off.

→ [OPERATE] indicator on the front of the recorder will go off.

Important:

- Remove the plug from the outlet if not operating the recorder for a long period.

Note:

- Be sure to perform the operation to start recording (select "On" for "Recording mode") after turning on the power of the recorder again.

6 Register the license (Registration Key)

When using the recorder for the first time, using the secure function, or increasing the number of the cameras to be connected, it is necessary to register the recorder license (Registration Key).

Important:

- In the following cases, the recorder must be rebooted by clicking the [Restart] button. The licenses will not be effective until the recorder is rebooted.
  - When the Registration Key of the recorder is registered
  - When the license of the additional camera kit, the additional business intelligence kit, or additional RAID kit is added
- The added cameras shall be registered on "Easy start" (☞ Refer to the included "Easy Start Guide") or on the "Camera registration" tab.
  Each setting value is the default. Configure each setting according to your needs.

Step 1

Obtain the "Registration Key" for the recorder by following the instructions on the included "Activation Key Card".

To add cameras, get the additional license registration key number in the Additional Camera Kit (option). To use the secure function, get the additional license registration key number in the Secure Communication Kit (option).
Refer to the "Activation Key Card" for further information.

Step 2

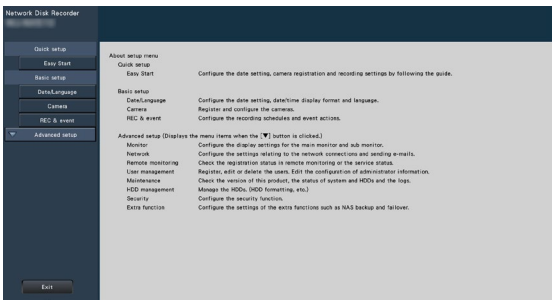
Start the recorder. (☞ Page 23)

→ When the system check is complete, the wide view screen will be displayed on the main monitor.

Step 3

Click the [Setup] of right-click menu on the image display area.

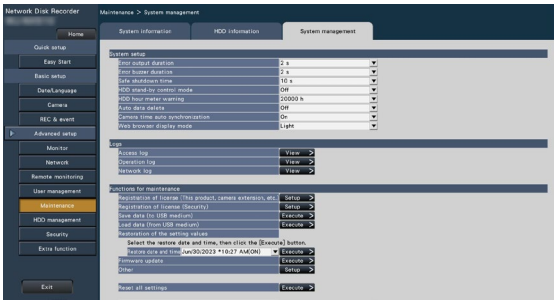
→ The setup menu will be displayed.



Step 4

Click [Advanced setup] - [Maintenance] - the [System management] tab on the setup menu.

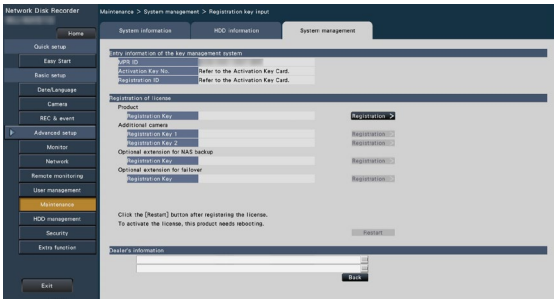
→ The "System management" page will be displayed.



Step 5

Click the [Setup >] button of [Registration of license (This product, camera extension, etc.)].

→ The registration window will be displayed.



Step 6

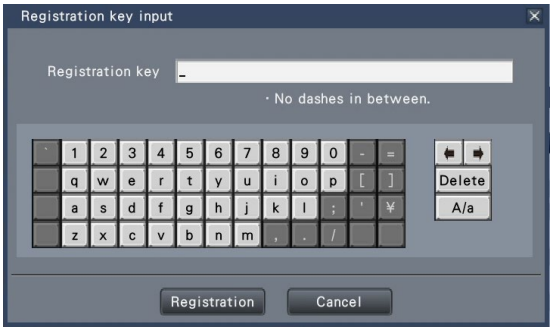
Click the [Registration >] button of "Product" - "Registration Key".

→ The "Registration key input" window will be displayed.

6 Register the license (Registration Key) (continued)

Step 7

Enter the "Registration key" for the recorder in the "Registration key" field using the on-screen keyboard, and click the [Registration] button.



→ The "Registration key input" window will return to the registration window.

Note:

- When an error message is displayed, enter the effective "Registration Key" again on the entry field.

Step 8

To increase number of connected cameras, enter the registration key of the additional camera license obtained in step 1 to the "Registration Key 1-2" fields under "Additional camera" on the "Registration of license" page shown in step 5.
To use the secure function, click the [Setup >] button of [Registration of license (Security)] under the system management screen shown in Step 4, and then enter the registration key of the secure communication license obtained in Step 1 in the "Registration Key 1-32" fields under "Secure communication" on the "Registration of license" page.
The operations are the same as those of Step 6 and 7.

Note:

- Register the registration key for the recorder fi rst, and then for the additional camera and secure communication licenses.

Step 9

Click the [Restart] button on the registration window to register the license.

→ The recorder will reboot and each license will become effective.

7 Initialize the hard disk drive

Open the "HDD management" page from the setting screen and format the HDD.

Step 1

Click the [HDD management] button of the setup menu - the "Advanced setup" menu.

→ The window with the administrator name and password entry fields will be displayed. The window is also displayed when a user has already logged in as the administrator.

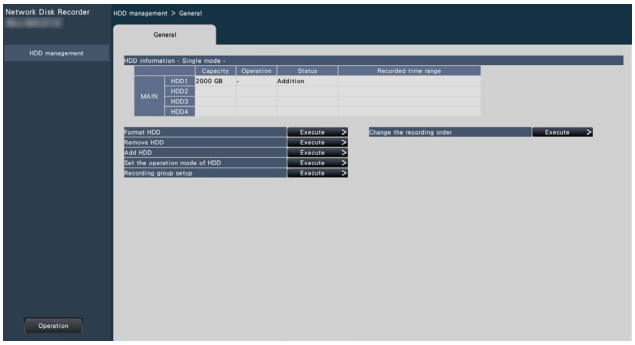
Step 2

Enter the "Administrator name" and the "Password" registered on page 24, and then click the [OK] button.

→ The "HDD management" page will be displayed.

Step 3

Confirm that the connected HDD is displayed on the "HDD management" page.



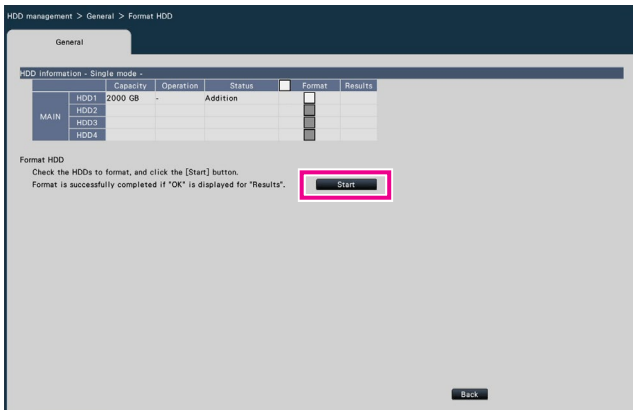
Step 4

Click "Execute" next to "Format HDD" on the "HDD management" page.

→ HDD format screen is displayed.

Step 5

Check the hard disk drives to format in the "Format" field, and click the [Start] button.



→ Format check screen is displayed.

Step 6

Click the [OK] button on Format check screen. When "OK" is displayed on the "Results" field on the HDD format screen, click the [Back] button.

When "Error" is displayed, format the hard disk drives again. Click the [Operation] button to return from the "HDD management" page to the operational screen.

Troubleshooting

Before asking for repairs, check the symptoms with the following table.

Contact your dealer if a problem cannot be solved even after checking and trying the solution in the table or a problem is not described below.

Symptom	Cause/solution	Ref. pages
Power is not turned on.	• Is the power plug connected to the outlet firmly? Confirm the cable is firmly connected.	–
	• Check if the power cord is properly inserted into the power socket of the recorder. Check if it is connected firmly.	23
Camera images are not displayed on the monitor	• Are the camera's user name and password registered correctly? Check if the user name and the password are correct on the "Change registration information" screen on the [Camera registration] tab under [Basic setup] - [Camera].	Operating Instructions
	• Is the power of the camera and connected devices on? Check whether the power is supplied to the camera and the devices.	–
	• Confirm that the cables are connected correctly and firmly. Confirm the cables are firmly connected.	15, 16
	• Is the connection distance to the camera too long? Check that the Ethernet cable is 100 m or shorter.	–
	• Depending on the HDMI monitor, it may not be displayed properly. Turn the monitor off and on and check whether it is displayed.	–
	• Is the monitor luminance appropriately adjusted, or is the contrast appropriately adjusted? Check whether the settings are appropriate.	–
	• Users who have logged into the system may not be authorized to display the images from cameras. Check the user level settings of these users.	Operating Instructions
Part of the displayed image is missing.	• This phenomenon is caused by dispersion of display area on the monitor. This is not a malfunction.	–
	• When a function to automatically enlarge the images in the connected monitor is enabled, some part of the images may not be displayed depending on the photographic subject.	–
Image is blurred.	• Is the lens of the camera soiled with dirt or dust? Check whether the lens of the camera is clean.	–
Cannot open the setup menu.	• Users who have logged into the system may not be authorized to display the setup menu. Check the user level settings of these users.	Operating Instructions
	• Isn't it the sub monitor you are currently operating? The setup menu cannot be displayed on the sub monitor.	16
The images or embedded characters displayed on the monitor look blurry.	• Depending on the photographic subject or HDMI monitor that is connected, images or embedded characters may look blurry. This phenomenon is not trouble.	–
No alarm action is taken.	• Check if alarm input signals are properly input to the ALARM/ CONTROL connector at the rear panel.	19, 20
	• Are the settings of the alarm connector appropriate?	Operating Instructions
	• Is "Off" or "Recording only" selected for "Mode"? Check whether the settings are appropriate.	Operating Instructions
The "Communication error: Cam.cc" indication is displayed on the main monitor. ("cc" indicates the camera number.)	• Confirm that the camera is connected correctly and firmly. Check the camera connection.	15
	• If the connection is appropriate, the cable may be broken or the camera may be out of order. Contact the dealer.	–

Symptom	Cause/solution	Ref. pages
The "Thermal error" indication is displayed on the main monitor.	• The ambient operating temperature is 0 °C to +45 °C. The "Thermal error" is displayed based on the internal thermal information of the HDD. If the "Thermal error" indication is displayed, it is recommended to change the installation environment so that the ambient temperature is maintained at approx. +25 °C. When the "Thermal error" indication is displayed frequently, contact your dealer.	–
	• Check if the fan is malfunctioning.	Operating Instructions
	• Check if the recorder ventilation holes or cooling fan are blocked, and also check for dust collected around the ventilation holes.	6
The clock of the recorder may keep bad time.	• The clock function of the recorder is accurate within ±30 seconds per month. To keep the correct recording, set the time periodically, or configure the system using the NTP function so as to keep the correct current time.	–
[STS] indicator of the HDD unit lights red.	• The hard disk drive is faulty. Contact your dealer.	–
The error indicator blinks red.	• A system error occurred. Contact your dealer.	–
"Authentication error" of the camera is displayed.	• When a new camera is detected by Easy Start, the username and password of the registered camera will be cleared, and an "Authentication error" will be displayed. In this case, open the "Change Registration Information" screen on the [Camera Registration] tab of [Basic Settings] - [Camera], and re-enter the username and password manually.	Operating Instructions
	• Initialize the camera and retry the camera registration upon referring to the operating instructions of the camera.	
Mouse cursor does not appear.	• Is the cable properly connected? Some mouse may not be recognized. Use the mouse that comes with this product.	–

Inspect the power cord, power plug and connectors periodically.

Symptom	Cause/solution	Ref. pages
The power cord insulation is damaged.	• The power cord, connector, or power plug is damaged. This may result in electric shock or a fire. Unplug the power plug from the AC outlet immediately, and refer to qualified service personnel.	–
The power cord, plug and connectors get hot during use.		
The power cord gets hot when bent or stretched.		

Disposal of Old Equipment and Batteries
Only for European Union and countries with recycling systems

These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries must not be mixed with general household waste.
For proper treatment, recovery and recycling of old products and used batteries, please take them to applicable collection points in accordance with your national legislation.
By disposing of them correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment.
For more information about collection and recycling, please contact your local municipality.
Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

Note for the battery symbol (bottom symbol)
This symbol might be used in combination with a chemical symbol. In this case it complies with the requirement set by the Directive for the chemical involved.

For U.S.A.

Disposal may be regulated in your community due to environmental considerations. For disposal or recycling information, please visit our website.

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Ls1023-3105 * PGQX2695WA * Printed in China