

SONY[®]

CAMERA CONTROL NETWORK ADAPTOR

CNA-1

OPERATION MANUAL

English

1st Edition (Revised 1)

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Overview

Features

The CNA-1 is a network device for expansion of the Sony camera network system.

You can build a flexible camera network system by using the Master device function, CCA-LAN converting function, or transport converting function. The remote control function for the HD Cutout function of the BPU (Baseband Processor Unit) allows you to control the HD Cutout frame by connecting the USB controller to the CNA-1.

Also, the CNA-1 supports the Gateway function. This extension allows you to expand the camera network system by adding a control panel or camera that conforms to the simple protocol provided from the CNA-1 to the camera network system.

Master device function

By working the CNA-1 as the master device of the camera network system, you can operate the MCS (multi-camera system) without using the MSU.

CCA to LAN converting

If you connect the CNA-1 to the camera network system via a LAN, and connect the CCU or RCP device to the CNA-1 with the CCA cable, you can add the CCU or RCP device easily to the camera network system without including them on the LAN.

Transport converting

Using the two CNA-1s converts the network protocol between a camera and control panel, and allows you to operate in a network environment with many delays or operate using the RS232/422 connection.

HD Cutout control function

You can control the HD Cutout frame of the BPU with the USB controller that is connected to the CNA-1 by connecting the CNA-1 to the BPU via LAN.

Gateway function

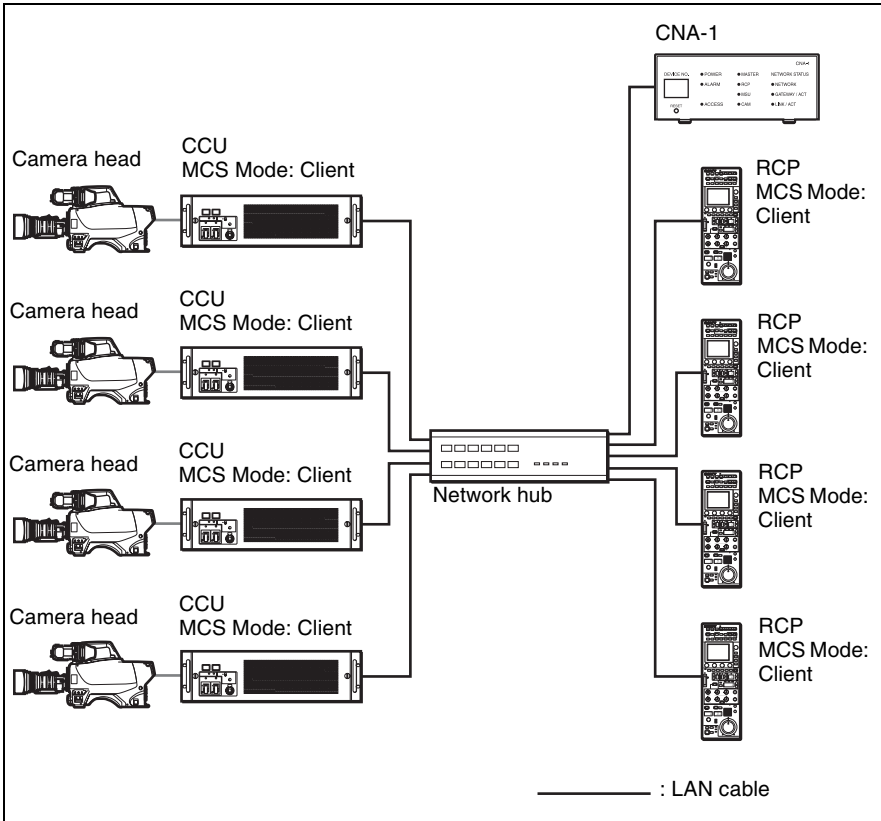
The CNA-1 can convert the protocol of the camera network system to a simpler protocol.

This protocol allows you to develop various applications easily and add them to the camera network system.

Examples of system configurations

Example for the master device function

The CNA-1 works as the master device for the MCS.



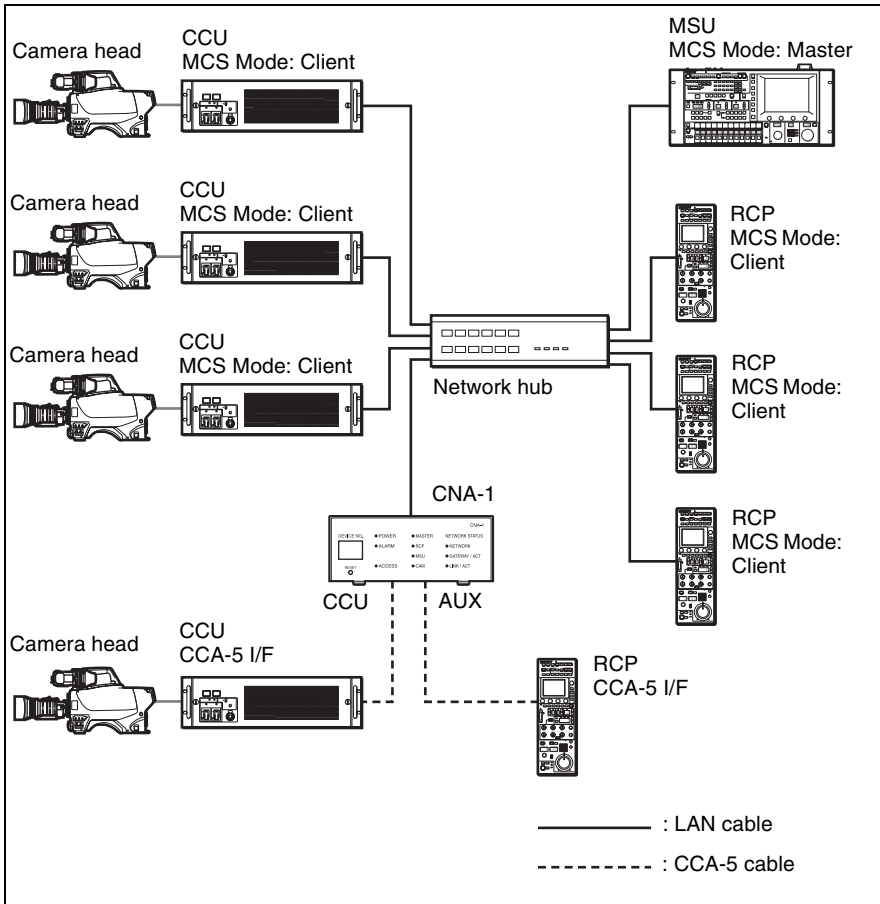
CNA-1 setup

For details of the following setting items, see “Menu items” (page 12).

CNS Configuration	CNS Mode	MCS
	Master Mode	Enable
	Master IP Address	Variable
	Target IP Address	Variable
Gateway Configuration	Gateway Mode	Disable

Example for CCA to LAN converting

This connection allows you to connect to the MCS with the CCA-5 interface .



CNA-1 setup

For details of the following setting items, see “Menu items” (page 12).

CNS Configuration	CNS Mode	MCS
	Master Mode	Disable
	Master IP Address	Master MSU's IP address
	Target IP Address	Variable
Gateway Configuration	Gateway Mode	Disable

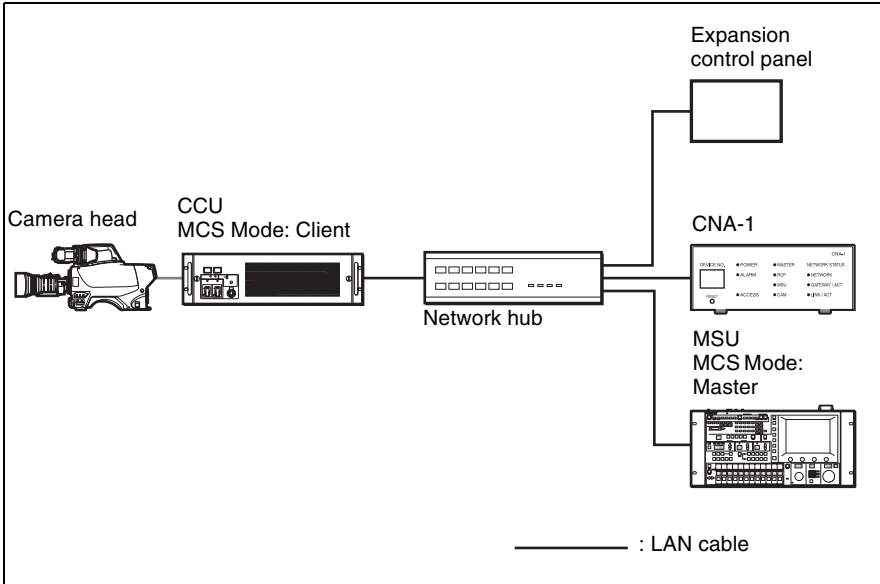
Example for the Gateway function

When controlling the Sony's camera from the expansion control panel

This is the MCS connection via the LAN.

Note

The expansion control panel needs to be compatible with the simple protocol provided from the CNA-1.



CNA-1 setup

For details of the following setting items, see “Menu items” (page 12).

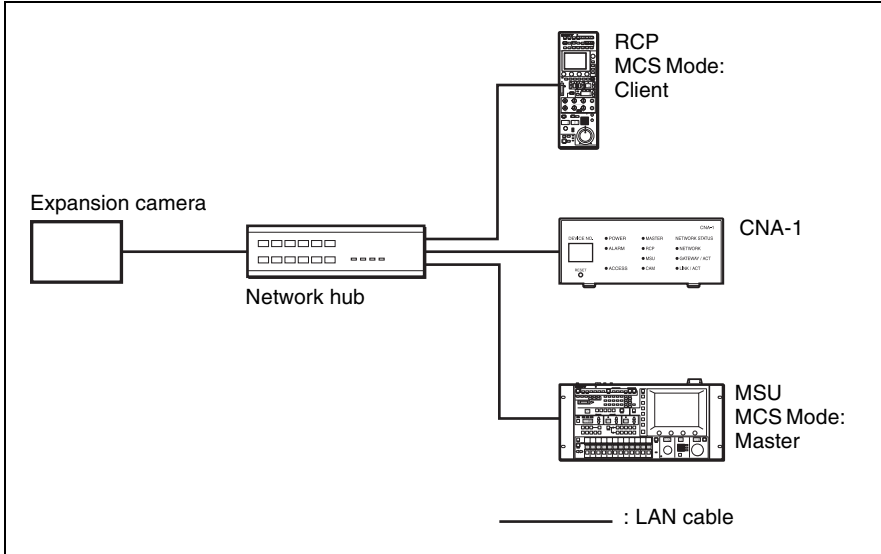
CNS Configuration	CNS Mode	MCS
	Master Mode	Disable
	Master IP Address	Master MSU's IP address
	Target IP Address	Variable
Gateway Configuration	Gateway Mode	Enable
	Emulation Mode	RCP

When controlling a expansion camera from the Sony's control panel (MSU, RCP)

This is the MCS connection via the LAN.

Note

The expansion camera needs to be compatible with the simple protocol provided from the CNA-1.



CNA-1 setup

For details of the following setting items, see “Menu items” (page 12).

CNS Configuration	CNS Mode	MCS
	Master Mode	Disable
	Master IP Address	Master MSU's IP address
	Target IP Address	Variable
Gateway Configuration	Gateway Mode	Enable
	Emulation Mode	CAM

Supported devices

This unit supports connection of the following devices.

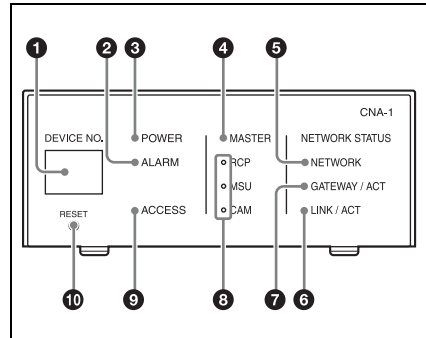
- HDC2000/2500
- HDCU2000/2500
- HDC1000(R)/1500(R)/3300(R)
- HDCU1000/1500/3300(R)
- HSC-300
- HSCU-300
- HDC-P1
- RCP-1500/1501/1530
- MSU-1000/1500
- HZC-CSM10
- BPU4000/8000

Note

The BPU4000/8000 is compatible with the HD Cutout control function only.

Location and function of parts

Front panel



Indicators

- 1 DEVICE NO. indicator**
Indicates the CNA-1's device number.
- 2 ALARM indicator**
Indicates the CNA-1's operating status.
Flashing: The CNA-1 is updating the firmware, or cannot boot properly.
Off: The CNA-1 is working normally.

Note

If the ALARM indicator flashes even though the CNA-1 is not updating, immediately stop using the CNA-1, and consult your Sony Service Center.

3 POWER indicator

Indicates the CNA-1's power status.

On: Power is being supplied.

Off: Power is not being supplied.

4 MASTER indicator

Indicates the master mode status of the CNA-1.

On: The CNA-1 is working in the master mode.

Off: The CNA-1 is not working in the master mode.

5 NETWORK indicator

Indicates the network connection status.

On: The CNA-1 is connected to the network properly.

Flashing: If the CNS setting of the CNA-1 is set to the MCS mode, the CNA-1 is connected to the master device properly, but there is no destination (camera or CCU) or the CNA-1 has failed to connect to it.

Off: If the CNA-1 is set to the MCS mode, there is no master device or the CNA-1 has failed to connect to it. If the CNA-1 is set to the Bridge mode, there is no destination (CCU, RCP, or MSU) or the CNA-1 has failed to connect to it. If the CNA-1 is set to legacy mode, the CNA-1 has failed to connect to the Gateway client device or the CNA-1 has failed to connect to it.

6 LINK / ACT indicator

Indicates the LAN communication status of the CNA-1.

On: The CNA-1 is linked properly.

Flashing: The CNA-1 is linked properly and data is being exchanged.

Off: The CNA-1 is not linked.

7 GATEWAY / ACT indicator

Indicates the communication status between the Gateway client device and the CNA-1.

On: The communication is established.

Flashing: The communication is established and data is being exchanged.

Off: The communication is not established.

8 RCP, MSU, CAM indicator

Indicates the Gateway Emulation mode status of the CNA-1. One of the RCP, MSU, CAM indicators turns on, or all indicators turn off.

On: The CNA-1 is working in the Gateway Emulation mode according to the indicator turned on (RCP, MSU, or CAM Emulation mode).

Off: The CNA-1 is not working in the Gateway Emulation mode.

Note

The MSU indicator works only if the HZC-MSCN1 optional software is installed. This indicator usually does not turn on.

9 ACCESS indicator

Indicates the status of the internal memory or connected USB mass storage device.

On: The USB mass storage device is connected.

Flashing: Read-write access is being performed on the internal memory or USB mass storage device.

Off: Read-write access is not being performed, or the USB mass storage device is not connected.

Note

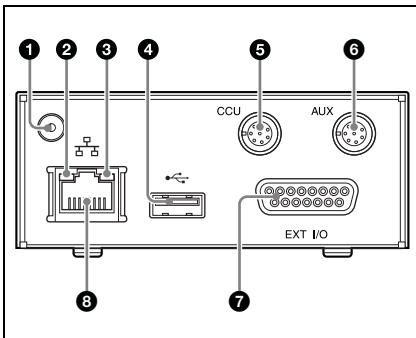
Do not disconnect a USB mass storage device while the ACCESS indicator is flashing.

Switch

10 RESET switch

Press and hold for 10 seconds to reset the CNA-1 to the default setting.

Rear panel



1 Earth terminal

Connect to a safety ground. To connect a ground terminal, use the following screw.

- Thread Size: M3, Length (L): 6 (7-682-547-04 equivalent)

Note

When receiving power from the PoE device, make sure to ground the CNA-1 to earth.

2 Network link status indicator LINK / ACT (orange)

On: The CNA-1 detects a valid link.
Flashing: The CNA-1 senses transmit or receive activity.
Off: The CNA-1 could not detect a valid link.

3 Network link status indicator SPEED (green)

On: The CNA-1 is linked to a 100 Mbps network.
Off: The CNA-1 is linked to a 10 Mbps network, or a network cable is not connected.

4 USB connector

Connect a USB controller for the HD Cutout control function or a USB flash drive for maintenance. Do not connect a device other than the above.

5 CCU REMOTE connector (8-pin, multi-connector, female terminal)

Connect to the RCP/CNU connector of the CCU.

6 AUX REMOTE connector (8-pin, multi-connector, female terminal)

Preliminary connector.

7 EXT I/O connector (D-sub 15-pin, female terminal)

Connects the external interface.

8 Network connector (RJ-45 8-pin)

Used for network connection. Connect to the 100BASE-TX hub with a network cable (shield type, category 5 or higher). This connector can receive the power from a power supply (PoE) device that conforms to the IEEE802.3af standard.

Starting and stopping the CNA-1

The CNA-1 does not have the power button. When you connect the CNA-1 to the power supply (CCU or hub that is compatible with PoE) and start to feed, the CNA-1 starts.

To stop the CNA-1, turn off the power supply (that feeds to the CNA-1) or remove the cable from the CNA-1.

Notes

- Do not stop the CNA-1 while the ACCESS indicator is flashing.
- The AUX REMOTE connector does not support power supply from the CCU.
- When using a power supply other than PoE, use a hub that is not compatible with PoE.

Menu operation

Menu operation from a web browser

The menu for setting up the CNA-1 is operated on a PC via its web browser.

- Supported OS: Windows 7
- Supported browser: Internet Explorer 8
- Display resolution: 1024 × 768 or higher

Even though the Web menu can be displayed by using PCs or browsers other than above, the screen layout may not be displayed properly.

To display the menu

- 1** Connect the CNA-1 and the PC directly with a LAN cross cable, or via the hub.
- 2** Start the web browser and input the IP address that is set to the CNA-1 after "http://".

For example, <http://192.168.1.1>

Note

The factory default IP address of the CNA-1 is set to "192.168.1.1".

- 3** The menu appears on the web browser.

Menu configuration

The menu is organized as follows.

Status

Lists the status of the CNA-1.

System

Sets the IP address, time, etc., of the CNA-1.

CNS

Sets the network setting of the camera network system or Gateway function.

HD Cutout

Sets the HD Cutout control function of the BPU.

Security

Changes the login password, or sets the access restriction to the Gateway TCP port.

Manual

Displays the operation manual of the CNA-1.

Authentication

To display the System, CNS, HD Cutout, and Security menus, the CNA-1 must be authenticated by the user name and password. When the pop-up window of the browser opens, input the user name and password.

- User name: admin
- Password: password (factory setting)

Note

When setting up the CNA-1, make sure to change the password from the factory setting. You can change the password on the Security menu.

Menu items

Status menu

[Status] tab



[Refresh] button

To display the Status menu, Click the [Status] tab.

The Status menu displays each setup value.

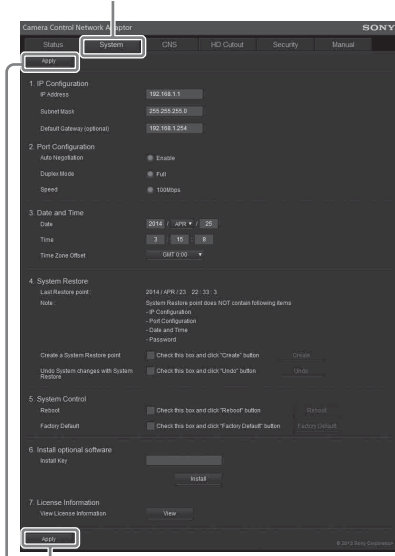
You can update the value by clicking the [Refresh] button on the menu.

Note

Only reloading the page on the browser does not update the values on the Status menu.

System menu

[System] tab



[Apply] button

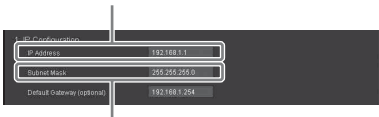
To display the System menu, Click the [System] tab.

To apply the settings, click the [Apply] button. The settings are stored in the internal memory.

1. IP Configuration

Sets the network connection.

Input the CNA-1's IP address.



Input the subnet mask.

Notes

- If you set the wrong IP address, the menu cannot be accessed from the browser. Be careful when setting the IP address.

- If you have forgotten the IP address, reset the CNA-1 by pressing the RESET switch.

2. Port Configuration

Displays the status of the LAN setting.



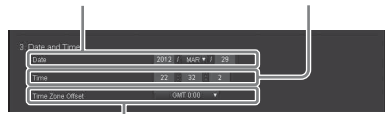
These settings are fixed.

3. Date and Time

Sets the date and time of the CNA-1.

Set the date.

Set the time.



Select the Time Zone.

4. System Restore

Sets the System Restore parameters.

Check the box and click the [Create] button to store the current settings to the internal memory as the System Restore point.



Check the box and click the [Undo] button to load the settings of the System Restore point and rewrite in the setting.

Notes

- Only one System Restore point can be stored.
- The IP Configuration, Date and Time, and Password settings are not stored.

5. System Control

Restarts the CNA-1 or resets the CNA-1's settings.

Check the box and click the [Reboot] button to restart the CNA-1.



Check the box and click the [Factory Default] button to reset the CNA-1 to the factory settings.

Notes

- When restarting the CNA-1, close the browser, then access the menu from the browser again.
- The System Restore point is not deleted even when you perform [Factory Default]. Use the System Restore function if needed.

CNS menu



To display the CNS menu, Click the [CNS] tab.

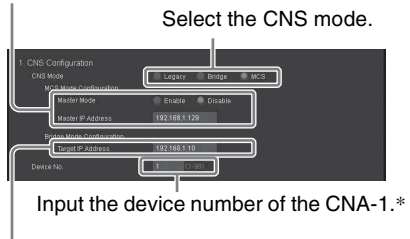
To apply the settings, click the [Apply] button. The settings are stored in the internal memory.

1. CNS Configuration

Sets the camera network system connection.

When the CNA-1 works in the MCS mode, the CNA-1 works as the master device by selecting [Enable].

When you use the CNA-1 as the client by selecting [Disable], input the IP address of the connected master device to [Master IP Address].



When the CNA-1 works in the Bridge mode, input the IP address of the connected device.

- * The device number should be set as follows:
 - If the CCU is connected to the CNA-1 with the CCA to LAN converting function, set a different device number from that of the CCU on the network.
 - If the Gateway function is activated and the Gateway Emulation mode is set to RCP, set a different device number from that of the RCP on the network.
 - If the Gateway function is activated and the Gateway Emulation mode is set to CAM, set a different device number from that of the CCU on the network.

Note

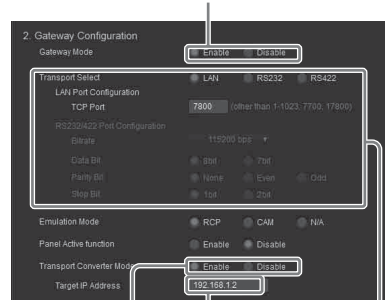
When you set [Master Mode] to [Enable], the Gateway Mode setting is set to [Disable] automatically.

2. Gateway Configuration

Sets the Gateway function or transport converting function.

For details about the transport converting function, see “Transport Converting Function Setting” (page 18).

Select [Enable] to use the Gateway function or transport converting function.



Select [Enable] to use the transport converting function.

Set the communication settings for the Gateway function or transport converting function.

Input the IP address of the target CNA-1 for the transport converting function.

Notes

- Do not set the Gateway function to [Enable] when you do not plan to use it, because the Gateway function affects the other network device.
- The Gateway function cannot be set to [Enable] when the CNA-1 is working in the Master Mode.
- The Gateway function does not work when the transport converting function of the CNA-1 is set to [Enable].

HD Cutout menu

For details, see “HD Cutout Control Function Setting” (page 24).

[HD Cutout] tab



[Apply] button

To display the HD Cutout menu, Click the [HD Cutout] tab.

To apply the settings, click the [Apply] button. The settings other than [Cutout Mode] and [Perspective Parameters] are stored in the internal memory.

1. HD Cutout Configuration

Input the IP address of the target BPU for the HD Cutout control.

Select [Enable] to use the HD Cutout control function.



Adjust the smoothness of the movements for the cutout frame.

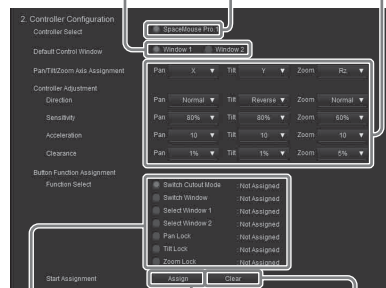
Sets the HD Cutout parameter.

2. Controller Configuration

Select the cutout frame that is controlled by the selected controller.

Select the controller for the setting.

Adjust the controller.



Select the function that is assigned to the controller's button.

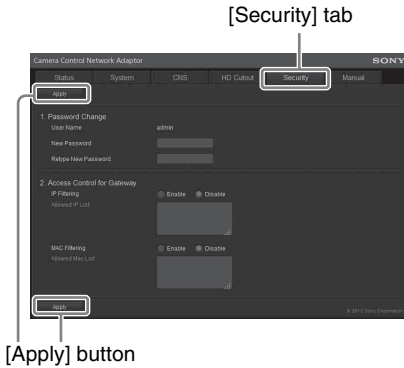
Cancel the assigned function of the button.

Start the function assigning process.

Note

Do not set the HD Cutout control function to [Enable] when you do not use the HD Cutout control function.

Security menu



To display the Security menu, Click the [Security] tab.
To apply the settings, click the [Apply] button. The settings are stored in the internal memory.

1. Password Change

Changes the login password for the menu on the browser.

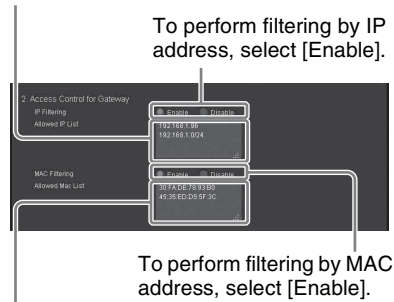
Input the new password.



2. Access Control for Gateway

Sets the access restriction to the TCP port for the Gateway function.

Input the IP address that is allowed access.*



Input the MAC address that is allowed access.**

- * You can input the multiple IP addresses by separating with a new line. You can also use CIDR notation.
For example, 192.168.1.1
192.168.1.0/24
- **You can input the multiple MAC addresses by separating with a new line.
For example, 50:45:1F:34:0A:24
30:C0:07:AA:BF:17

Note

If you have forgotten the password, reset the CNA-1 by pressing the RESET switch.

Transport Converting Function Setting

Transport converting with LAN

The communication between the two CNA-1s is established with the simple protocol by converting the camera network system protocol to the simple network system protocol to the simple

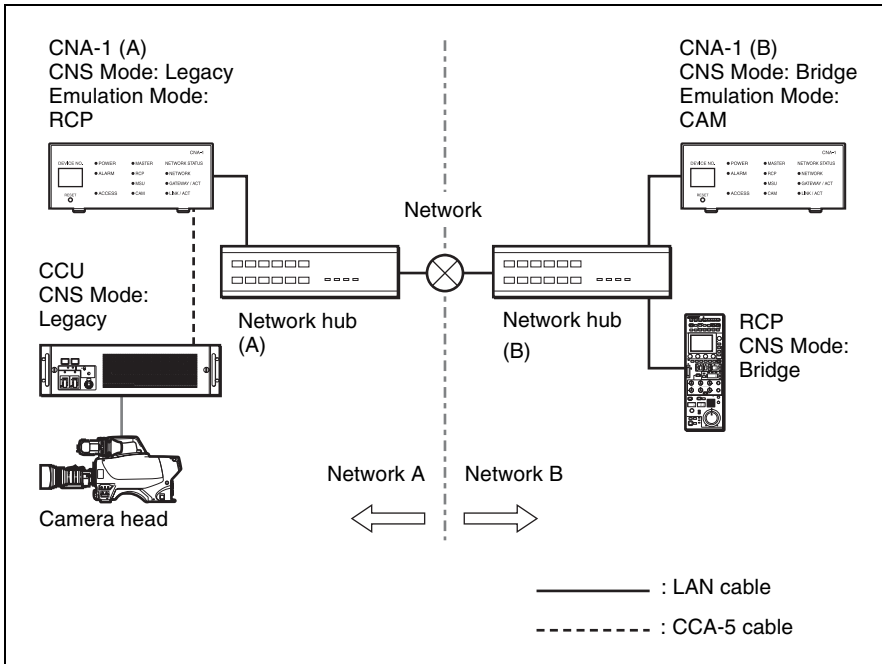
protocol. You can perform the camera control on a network with many delays in which the camera network system protocol is not compatible.

About the usable network

You cannot use the Internet. Use a secure private network that is independent of other systems or networks and satisfy the following conditions.

- Delay amount: Less than 1 sec for one way
- Bandwidth: More than 100 Kbps per camera

When controlling a camera from the RCP in one-to-one



Device setup for the network A

CNA-1 (A) setup

CNS Configuration	CNS Mode	Legacy
	Master Mode	Disable
	Master IP Address	No need to input
	Target IP Address	No need to input
	Device No.	Variable
Gateway Configuration	Gateway Mode	Enable
	Transport Select	LAN
	TCP Port	Variable
	Emulation Mode	RCP
	Panel Active Function	Disable
	Transport Converter Mode	Enable
	Target IP Address	IP address of the CNA-1 (B)

Device setup for the network B

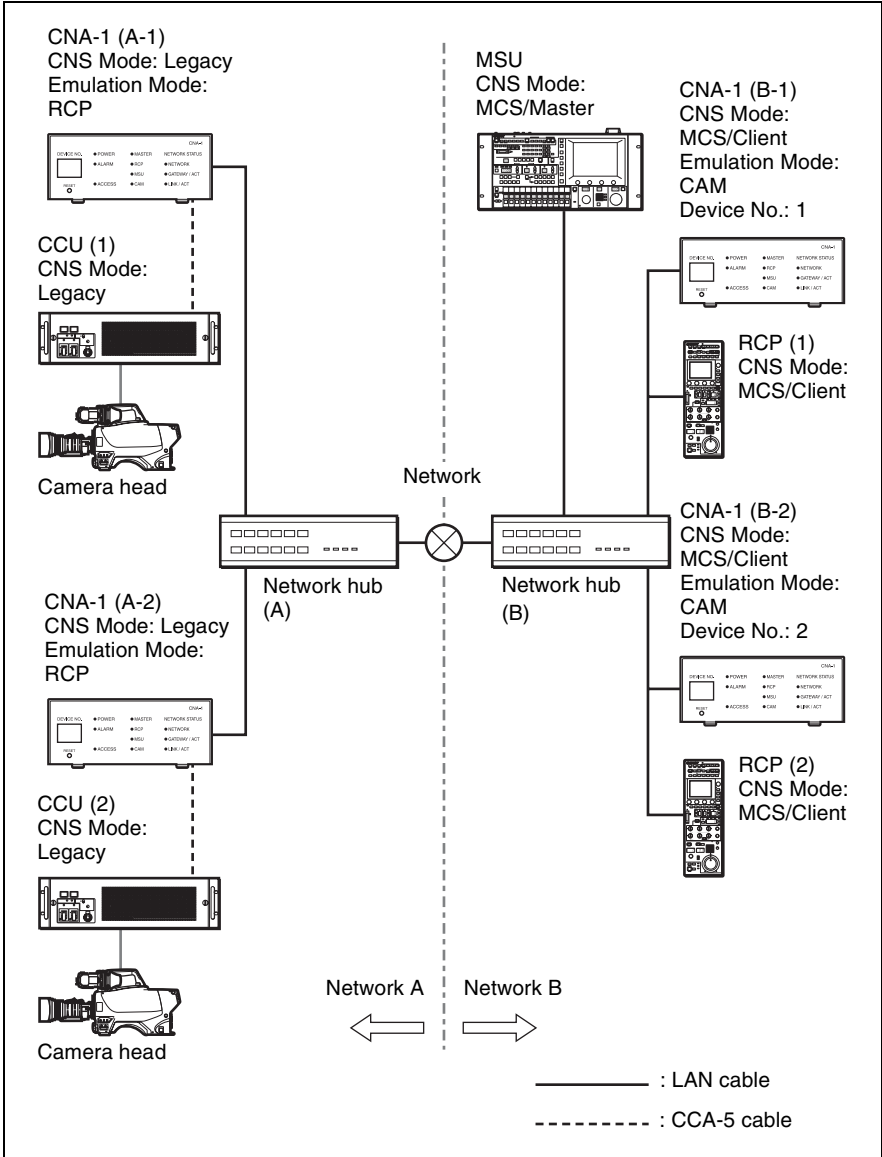
CNA-1 (B) setup

CNS Configuration	CNS Mode	Bridge
	Master Mode	Disable
	Master IP Address	No need to input
	Target IP Address	No need to input
	Device No.	Variable
Gateway Configuration	Gateway Mode	Enable
	Transport Select	LAN
	TCP Port	Variable
	Emulation Mode	CAM
	Panel Active Function	Disable
	Transport Converter Mode	Enable
	Target IP Address	No need to input

RCP setup

Network	CNS	Bridge
	Target IP Address	IP address of the CNA-1 (B)

When using the multi-camera system



Device setup for the network A

CNA-1 (A-1) setup

CNS Configuration	CNS Mode	Legacy
	Master Mode	Disable
	Master IP Address	No need to input
	Target IP Address	No need to input
	Device No.	Variable
Gateway Configuration	Gateway Mode	Enable
	Transport Select	LAN
	TCP Port	TCP Port number of the CNA-1 (B-1)
	Emulation Mode	RCP
	Panel Active Function	Disable
	Transport Converter Mode	Enable
	Target IP Address	IP address of the CNA-1 (A-1)

CNA-1 (A-2) setup

Gateway Configuration	TCP Port	TCP Port number of the CNA-1 (B-2)
	Target IP Address	IP address of the CNA-1 (B-2)

Other settings are the same as the CNA-1 (A-1) settings.

Device setup for the network B

CNA-1 (B-1) and CNA-1 (B-2) setup

CNS Configuration	CNS Mode	MCS
	Master Mode	Disable
	Master IP Address	IP address of the MSU
	Target IP Address	No need to input
	Device No.	See “About the device number” (page 22).
Gateway Configuration	Gateway Mode	Enable
	Transport Select	LAN
	TCP Port	Variable
	Emulation Mode	CAM
	Panel Active Function	Disable
	Transport Converter Mode	Enable
	Target IP Address	No need to input

About the device number

The device number that is set to the CNA-1 is recognized as the camera number on network B by the MSU/RCP. On the example above, the CNA-1 (B-1) is recognized as camera 1, and the CNA-1 (B-2) is recognized as camera 2.

Note

You cannot set the same device number to multiple CNA-1s.

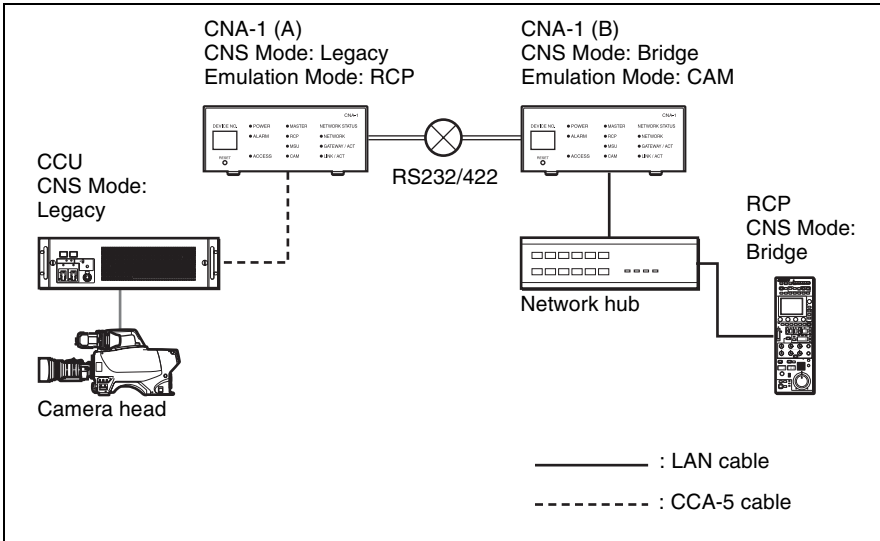
RCP setup

Network	CNS	MCS
	Mode	Client
	Master IP Address	IP address of the MSU

MSU setup

Network	CNS	MCS
	Mode	Master

Transport converting with RS232/422



CNA-1 (A) setup

Gateway Configuration	Transport Select	RS232 or RS422
	Bitrate, Date Bit, Parity Bit, Stop Bit	Variable
	Target IP Address	No need to input

Other settings are the same as “Transport converting with LAN” (page 18).

CNA-1 (B) setup

Gateway Configuration	Transport Select	RS232 or RS422
	Bitrate, Date Bit, Parity Bit, Stop Bit	Variable

Other settings are the same as “Transport converting with LAN” (page 18).

Notes

- The BPU4000/8000 is not compatible with the operations that use the transport converting function.
- Controlling the camera power is available only when the network of the panel is in the MCS mode.
- The linkage functions for the RCP/MSU (PanelActive, IrisActive, Para) cannot be used between the RCP/MSU of the panel’s network and the RCP/MSU of the camera’s network.

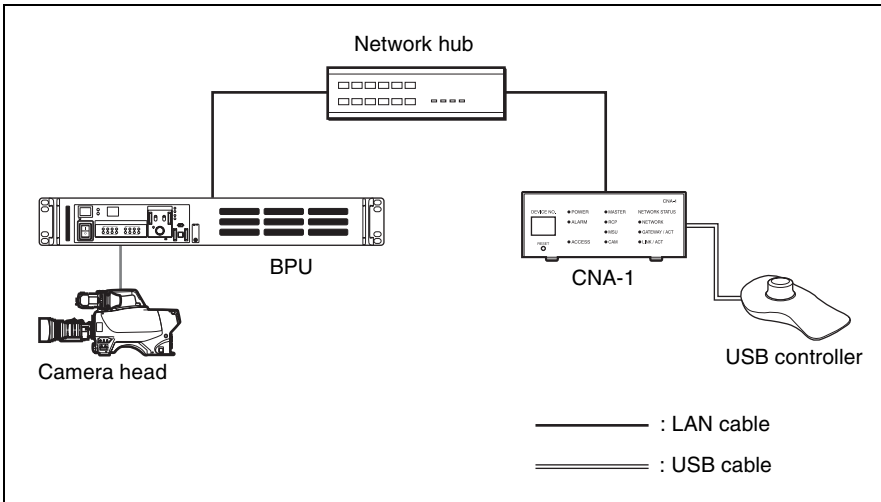
HD Cutout Control Function Setting

Set the HD Cutout control function with following steps.

- 1 Connect the BPU and USB controller.
- 2 Set the network.
- 3 Enable the HD Cutout control function.
- 4 Register the target BPU for control.
- 5 Set the parameters for the HD Cutout control function.
- 6 Set the parameters for the USB controller.
- 7 Assign the function to the buttons on the USB controller.

1. Connect the BPU and USB controller

Connect the CNA-1 and BPU via LAN by using the PoE compatible network hub as in the illustration. Connect the USB controller to the CNA-1. For details about the usable USB controller, see “About the USB controller” (page 27).



2. Set the network

Set the IP address and subnet mask of the CNA-1 and BPU4000 so that the communication between the CNA-1 and BPU is established.

For details about settings, refer to the operation manual of the BPU.

3. Enable the HD Cutout control function

Make sure that the HD Cutout control function is set to on.

Set [HD Cutout] > [1. HD Cutout Configuration] > [HD Cutout Control Function] to [Enable], then click the [Apply] button.

4. Register the target BPU for control

Input the IP address of the target BPU to [HD Cutout] > [1. HD Cutout Configuration] > [Target BPU IP Address], then click the [Apply] button.

5. Set the parameters for the HD Cutout control function

Set the parameters for the HD Cutout control function as necessary. For details about parameter, refer to the operation manual of the BPU.

1. HD Cutout Configuration	Cutout Mode		Selects the HD Cutout mode of the BPU.
	Perspective Parameters	Camera Focal Length	Sets the focal length of a camera lens.
		Camera Tilt Angle	Sets the tilt angle (in the elevation angle direction) of the camera.
		Camera Roll Angle	Sets the installation angle (in the roll angle direction) of the camera.
		Pan/Tilt/Zoom Smoothness	Adjusts the smoothness of the movement for each controlled frame.

Note

This setting is stored on the BPU. This setting is not stored on the CNA-1.

6. Set the parameters for the USB controller

Set the parameters for the USB controller that is connected to the CNA-1 as necessary. When the [Apply] button is clicked after setting parameters, the set value is stored on the CNA-1.

2. Controller Configuration	Controller Select		Select the USB controller that is used for controlling. When only a USB controller is connected, it is selected automatically.
	Default Control Window		Select the frame that is controlled by the selected controller.
	Pan/Tilt/Zoom Axis Assignment		Select the control axis of the controller that is assigned for the Pan/Tilt/Zoom operation.
	Controller Adjustment	Direction	Selects whether to reverse the direction for the Pan/Tilt/Zoom movement.
		Sensitivity	Adjusts the sensitivity of the controller.
Acceleration		Adjusts the acceleration of the controller.	
Clearance		Adjusts the inoperable area near of origin point of the controller.	

7. Assign the function to the buttons on the USB controller

You can assign the function to the USB controller that is connected to the CNA-1 by using [Button Function Assignment].

Select the button function that is displayed in [Function Select], then click the [Assign] button. The button changes to the assignment standby status. After the button is in assignment standby, click the button of the USB controller that you want to assign to set.

To cancel assigning, click the [Cancel] button.

2. Controller Configuration	Function Select	Switch Cutout Mode	Switches the HD Cutout mode of the BPU.
		Switch Window	Switches the controlled window.
		Select Window 1	Switches the controlled frame to window 1.
		Select Window 2	Switches the controlled frame to window 2.
		Pan Lock	Locks the frame moving operation to the pan direction.
		Tilt Lock	Locks the frame moving operation to the tilt direction.
		Zoom Lock	Locks the zoom operation.

About the USB controller

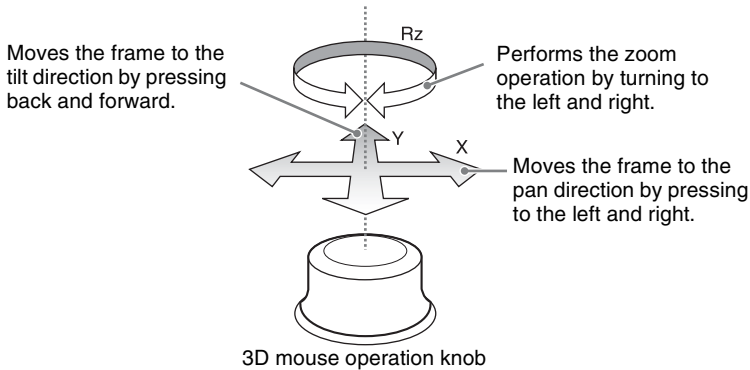
Use the USB controller that is compliant with the USB HID device class.
The following controller is recommended.
3D Mouse: 3D Connexion SpaceMouse Pro

Up to two USB controllers can be connected to the CNA-1. When connecting two controllers, use the self-powered USB 2.0 compatible USB hub.

Note

The USB controller other than the recommended controller may not be recognized even if it is connected to the USB connector.

The operation axis is assigned to the 3D mouse as illustration below in the default setting.



About the Gateway function

For details about using the Gateway function, consult your Sony service representative.

Specifications

General

Power requirements

PoE Class 2

CCU PW (CCA)

DC: 10.5 V – 30 V

EXT I/O (D-SUB)

DC: 10.5 V – 17 V

Power consumption

2 W (CCU PW)

Operating temperature

5°C to 40°C (41°F to 104°F)

Storage temperature

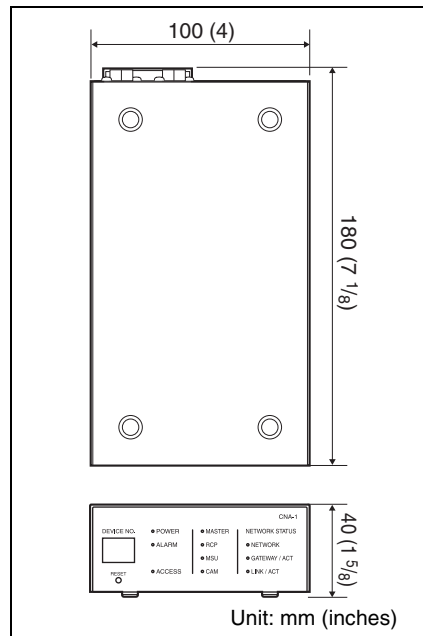
–20°C to +60°C (–4°F to +140°F)

Mass 700 g (1 lb 8.7 oz)

External dimensions (w/h/d)

100 mm × 40 mm × 180 mm

(4 inches × 1⁵/₈ inches × 7¹/₈ inches)



Unit: mm (inches)

Control connectors

USB connector

High Speed USB (USB2.0) (1)

CCU REMOTE connector

8-pin multi-connector, female (1)

AUX REMOTE connector

8-pin multi-connector, female (1)

External I/O connector

D-SUB 15-pin

Network connector

RJ-45 (1)

100BASE-TX: IEEE 802.3u

Accessories supplied

Operation guide (1)

Design and specifications are subject to change without notice.

Note

Always verify that the unit is operating properly before use.

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