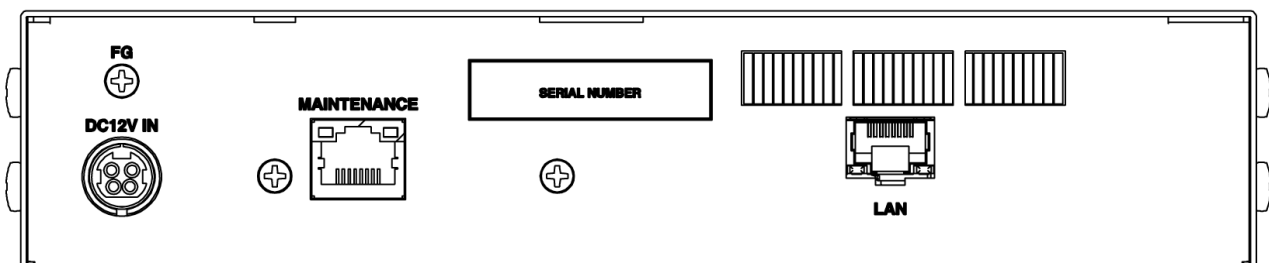
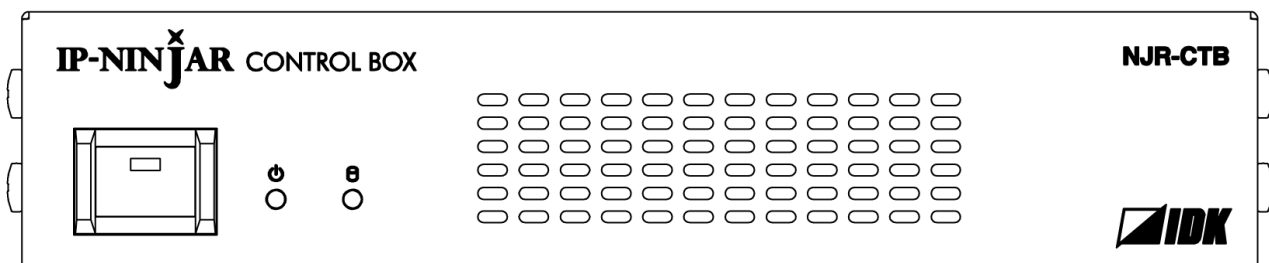


## IP-NINJAR Management and Control Box

# NJR-CTB

<User Guide>

Ver.1.3.0



- Thank you for choosing our product.
- To ensure the best performance of this product, please read this user guide fully and carefully before using it and keep this manual together with the product for future reference as needed.

## **Trademarks**

- HDBaseT™ and the HDBaseT Alliance Logo are trademarks of the HDBaseT Alliance.
- The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. in the United States and other countries.
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- ©2017 IDK Corporation, all rights reserved.

# Before reading this manual

- All rights reserved.
- Some information contained in this User guide such as exact product appearance, diagrams, menu operations, and so on may differ depending on the product version.
- This User guide is subject to change without notice. You can download the latest version from IDK's website at: [www.idkav.com](http://www.idkav.com)

The reference manual consists of the following two volumes:

- User guide (this document):  
Provides explanations and procedures for operations, installation, connections among devices, I/O adjustment and settings.
- Command guide: Please download the command guide from the website above.  
Provides explanations and procedures for external control using RS-232C and LAN communications.

**FCC STATEMENT**

**Note:** 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.

(Class A)

**Supplier's Declaration of Conformity  
47 CFR § 2.1077 Compliance Information**

**Unique Identifier**

Type of Equipment: Management Platform

Model Name: NJR-CTB

**Responsible Party – U.S. Contact Information**

Company Name: IDK America Inc.

Address: 72 Grays Bridge Road Suite 1-C, Brookfield, CT 06804

Telephone number: +1-203-204-2445

URL: www.idkav.com

**FCC Compliance Statement**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

(FCC SDoC)

**CE MARKING**

This equipment complies with the essential requirements of the relevant European health, safety and environmental protection legislation.

**WEEE MARKING**



Waste Electrical and Electronic Equipment (WEEE), Directive 2002/96/EC  
(This directive is only valid in the EU.)



This equipment complies with the WEEE Directive (2002/96/EC) marking requirement.







The left marking indicates that you must not discard this electrical/electronic equipment in domestic household waste.

# Safety Instructions

Read all safety and operating instructions before using this product. Follow instructions and heed warnings/cautions.


Instructions and warnings/cautions for all products are provided. Some of them may not be applicable to your product.

 <h2>Warning</h2>	<p>Indicates the presence of a hazard that may result in death or serious personal injury if the warning is ignored or the product is handled incorrectly.</p>
 <h2>Caution</h2>	<p>Indicates the presence of a hazard that may cause minor personal injury or property damage if the caution is ignored or the product is handled incorrectly.</p>


Symbol	Description	Example
 Caution	This symbol is intended to alert the user. (Warning and caution)	 Hot surfaces Caution
 Prohibited	This symbol is intended to prohibit the user from specified actions.	 Do not disassemble
 Instruction	This symbol is intended to instruct the user.	 Unplug

## Warning


### For lifting heavy products:

 Instruction	<ul style="list-style-type: none"> <li>• <b>Lifting must be done by two or more personnel.</b></li> </ul> <p>To avoid injury: When lifting the product, bend your knees, keep your back straight and get close to it with two or more persons.</p>
--	--





### For installing and connecting products:

 Prohibited	<ul style="list-style-type: none"> <li>• <b>Do not place the product in unstable place.</b></li> </ul> <p>Install the product in a horizontal and stable place, as this may fall or tip over and cause injury.</p> <ul style="list-style-type: none"> <li>• <b>Secure the product if installing in the locations with vibration.</b></li> </ul> <p>Vibration may move or tip over the product unexpectedly, resulting in injury.</p>
---	--


# Warning

 <b>Instruction</b>	<ul style="list-style-type: none"> <li>● <b>Installation work must be performed by professionals.</b> The product is intended to be installed by skilled technicians. For installation, please contact a system integrator or IDK. Improper installation may lead to the risk of fire, electric shock, injury, or property damage.</li> <li>● <b>Insert the power plug into an outlet that is unobstructed.</b> Unobstructed access to the plug enables unplugging the product in case of any extraordinary failure, abnormal situation or for easy disconnection during extended periods of non-use.</li> <li>● <b>Insert the power plug into an appropriate outlet completely.</b> If the plug is partially inserted, arcing may cause the connection to overheat, increasing the risk of electric shock or fire. Do not use a damaged plug or connect to a loose outlet.</li> <li>● <b>Unplug the product from an AC power source during installation or service.</b> When connecting peripheral devices to this product, unplug all involved devices from outlets. Ground potential differences may cause fire or other difficulties.</li> <li>● <b>The product must be electrically earthed/grounded.</b> To reduce the risk of electric shock, ensure the product is connected to a mains socket outlet with a protective earthing connection.</li> <li>● <b>For PoE/PoH, use category cables meeting IEEE802.3af/at.</b> Otherwise, it may cause problems or a fire.</li> </ul>
---	--

**For operating products:**




 <b>Prohibited</b>	<ul style="list-style-type: none"> <li>● <b>Keep out any foreign objects.</b> To avoid fire or electric shock, do not permit foreign objects, such as metal and paper, to enter the product from vent holes or other apertures.</li> <li>● <b>For power cable/plug and Category cable,</b> <ul style="list-style-type: none"> <li>• Do not scratch, heat, or modify, including splicing or lengthening them.</li> <li>• Do not pull, place heavy objects on them, or pinch them.</li> <li>• Do not bend, twist, tie or clamp them together forcefully.</li> </ul> </li> </ul> <p>Misuse of the power cable and plug may cause fire or electric shock. If power cables/plugs become damaged, contact your IDK representative.</p>
 <b>Do not disassemble</b>	<ul style="list-style-type: none"> <li>● <b>Do not repair, modify or disassemble.</b> Since the product includes circuitry that uses potentially lethal, high voltage levels, disassembly by unauthorized personnel may lead to the risk of fire or electric shock. For internal inspection or repair, contact your IDK representative.</li> </ul>
 <b>Do not touch</b>	<ul style="list-style-type: none"> <li>● <b>Do not touch the product and connected cables during electric storms.</b> Contact may cause electric shock.</li> </ul>
 <b>Instruction</b>	<ul style="list-style-type: none"> <li>● <b>Clean the power plug regularly.</b> If the plug is covered in dust, it may increase the risk of fire.</li> </ul>

**If the following problem occurs:**





 <b>Unplug</b>	<ul style="list-style-type: none"> <li>● <b>Unplug immediately if the product smokes, makes unusual noise, or produces a burning odor.</b></li> <li>● <b>Unplug immediately if the product is damaged by falling or having been dropped.</b></li> <li>● <b>Unplug immediately if water or other objects are directed inside.</b></li> </ul> <p>If you continue to use the product under these conditions, it may increase the risk of electric shock or fire. For maintenance and repair, contact your IDK representative.</p>
--	--

# **Caution**

**For installing and connecting products:**

 <b>Prohibited</b>	<ul style="list-style-type: none"> <li>● <b>Do not place the product in a location where it will be subjected to high temperatures.</b> If the product is subjected to direct sunlight or high temperatures while under operation, it may affect the product's performance and reliability and may increase the risk of fire.</li> <li>● <b>Do not store or operate the product in dusty, oil smoke filled, or humid place.</b> Placing the product in such environment may increase the risk of fire or electric shock.</li> <li>● <b>Do not block the vent holes.</b> If ventilation slots are blocked, it may cause the product to overheat, affecting performance and reliability and may increase the risk of fire.</li> <li>● <b>Do not place or stack heavy items on the product.</b> Failure to observe this precaution may result in damage to the product itself as well as other property and may lead to the risk of personal injury.</li> <li>● <b>Do not exceed ratings of outlet and wiring devices.</b> Exceeding the rating of an outlet may increase the risk of fire and electric shock.</li> </ul>
 <b>No wet hands</b>	<ul style="list-style-type: none"> <li>● <b>Do not handle power plug with wet hands.</b> Failure to observe this precaution may increase the risk of electric shock.</li> </ul>
 <b>Instruction</b>	<ul style="list-style-type: none"> <li>● <b>Use and store the product within the specified temperature/humidity range.</b> If the product is used outside the specified range of temperature and humidity continuously, it may increase the risk of fire or electric shock.</li> <li>● <b>Do not place the product at elevations of 1.24 mi. (2,000 m) or higher above sea level.</b> Failure to do so may shorten the life of the internal parts and result in malfunctions.</li> <li>● <b>When mounting the product into the rack, provide sufficient cooling space.</b> Mount the product in a rack meeting EIA standards, and maintain spaces above and below for air circulation. For your safety as required, attach an L-shaped bracket in addition to the panel mount bracket kit to improve mechanical stability.</li> <li>● <b>Never insert screws without the rubber feet into the threaded holes on the bottom of the product.</b> Never insert screws alone into the threaded holes on the bottom of the product. Doing so may lead to damage when the screws contact electric circuitry or components inside the product. Reinstall the originally supplied rubber feet using the originally supplied screws only.</li> </ul>

**For operating products:**

 <p><b>Hot surfaces Caution</b></p>	<p><b>For products with the hot surfaces caution label only:</b></p> <ul style="list-style-type: none"> <li>● <b>Do not touch the product’s hot surface.</b></li> </ul> <p>If the product is installed without enough space, it may cause malfunction of other products. If you touch product’s hot surface, it may cause burns.</p>
 <p><b>Prohibited</b></p>	<ul style="list-style-type: none"> <li>● <b>Use only the supplied power cable and AC adapter.</b></li> <li>● <b>Do not use the supplied power cable and AC adapter with other products.</b></li> </ul> <p>If non-compliant adapter or power cables are used, it may increase the risk of fire or electric shock.</p>
 <p><b>Unplug</b></p>	<ul style="list-style-type: none"> <li>● <b>If the product won’t be used for an extended period of time, unplug it.</b></li> </ul> <p>Failure to observe this precaution may increase the risk of fire.</p> <ul style="list-style-type: none"> <li>● <b>Unplug the product before cleaning.</b></li> </ul> <p>To prevent electric shock.</p>
 <p><b>Instruction</b></p>	<ul style="list-style-type: none"> <li>● <b>Do not prevent heat release.</b></li> </ul> <p>If cooling fan stops, power off the product and contact IDK. Failure to do so may raise internal temperature and increase the risk of malfunction, fire, or electric shock.</p> <ul style="list-style-type: none"> <li>● <b>Keep vents clear of dust.</b></li> </ul> <p>If the vent holes near the cooling fan or near the fan are covered with dust, internal temperatures increase and may increase the risk of malfunction. Clean the vent holes and near the fan as needed. If dust accumulates inside of the product, it may increase the risk of fire or electric shock. Periodic internal cleaning, especially before humid rainy season, is recommended. For internal cleaning, contact your IDK representative.</p>



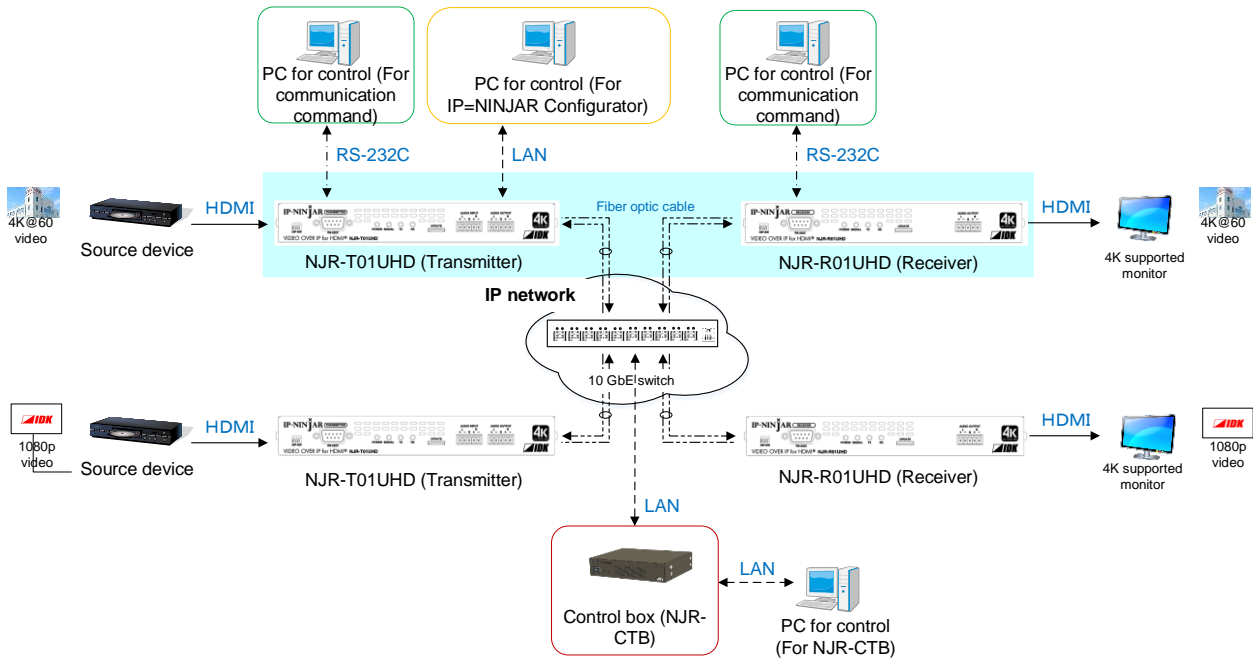
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# 1 About this Guide

This guide contains the basic explanation of the NJR-CTB Control Box and procedures for using an NJR-CTB Control Box to control the NJR-01UHD and NJR-04HD.



[Figure 1.1] Document structure

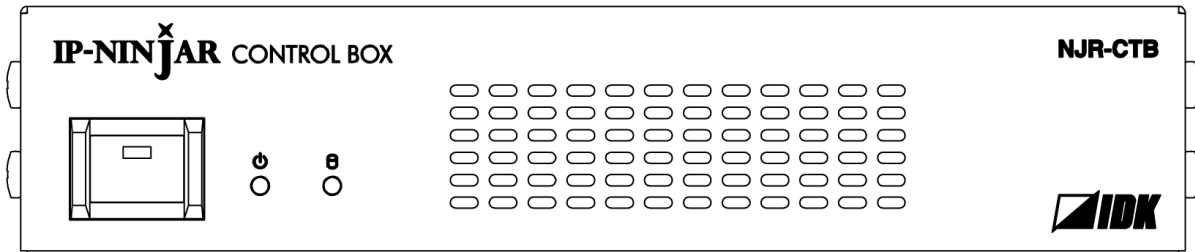
[Table 1.1] Documents for IP-NINJAR products

Model number	User guide	Command Guide
NJR-T01UHD / NJR-R01UHD	NJR-T01UHD / NJR-R01UHD User guide	NJR-T01UHD / NJR-R01UHD Command Guide
NJR-T04HD / NJR-R04HD	NJR-T04HD / NJR-R04HD User guide	NJR-T04HD / NJR-R04HD Command Guide
NJR-CTB	NJR- CTB User guide	NJR- CTB Command Guide
IP-NINJAR Configurator (for free)	IP-NINJAR Configurator User guide	

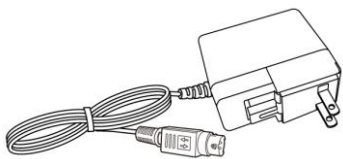
## 2 Included items

---

Make sure all items below are included in the package.  
If any items are missing or damaged, please contact IDK.



One (1) NJR-CTB



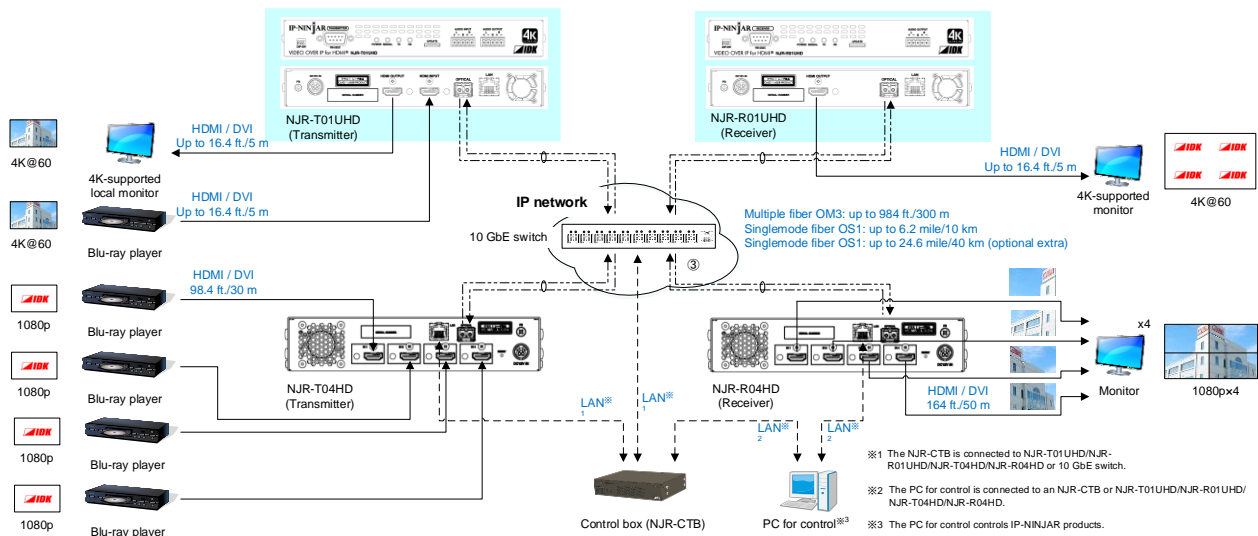
One (1) AC adapter (4 ft. (1.2 m))

[Figure 2.1] Included items

### 3 Product outline

The NJR-CTB is the control device to command comprehensively the NJR-01UHD and NJR-04HD. It allows you to check connections and communications among products, switch video, control videowall, and so on using WEB browser or external control devices via LAN.

The NJR-CTB enables extension, distribution, matrix switching, videowall, multiview using with IP-NINJAR series transmitters, receivers, and a 10GbE switch. Additionally, the Web GUI allows you to set, manage and control IP-NINJAR products that are connected to a network.



[Figure 3.1] Audio/Video over IP Network system diagram

**Notes:**

- Use the NJR-CTB with IP-NINJAR series products.
- The NJR-CTB cannot be connected to OPF series products of optical input/output slot boards of FDX series products.

## 4 Features

---

### ■ Management

- Automatically detecting IP-NINJAR series products on the network and displaying the list
- Checking status of all connectet IP-NINJAR products through Web browser
- Setting up connected IP-NINJAR products
- Configuring Videowall and Multiview layout pattern by Web brower
- Naming devices, registering groups
- Registering display pattern preset
- User administration management

### ■ Control input

- WEB browser operation eliminates the need for software installation
- Controlling from external devices using control commands

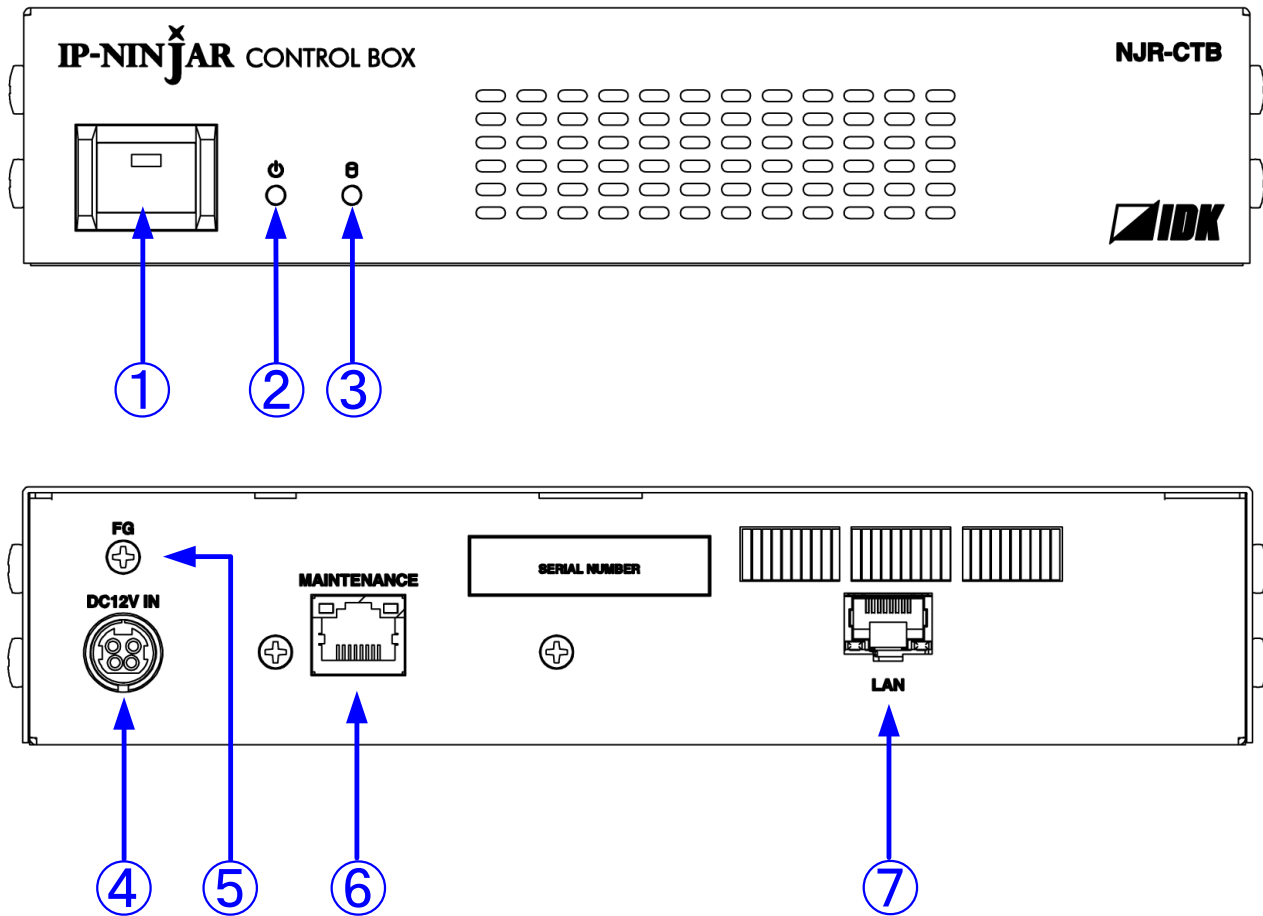
### ■ Control output

- Sending control command to external devices

### ■ Other

- AC adapter with locking mechanism
- Virtual Matrix function
- Supporting HTTPS
- Logging device status and output to external device via API
- Redanduncy, backup, and restore

## 5 Panels



[Figure 5.1] NJR-CTB drawing

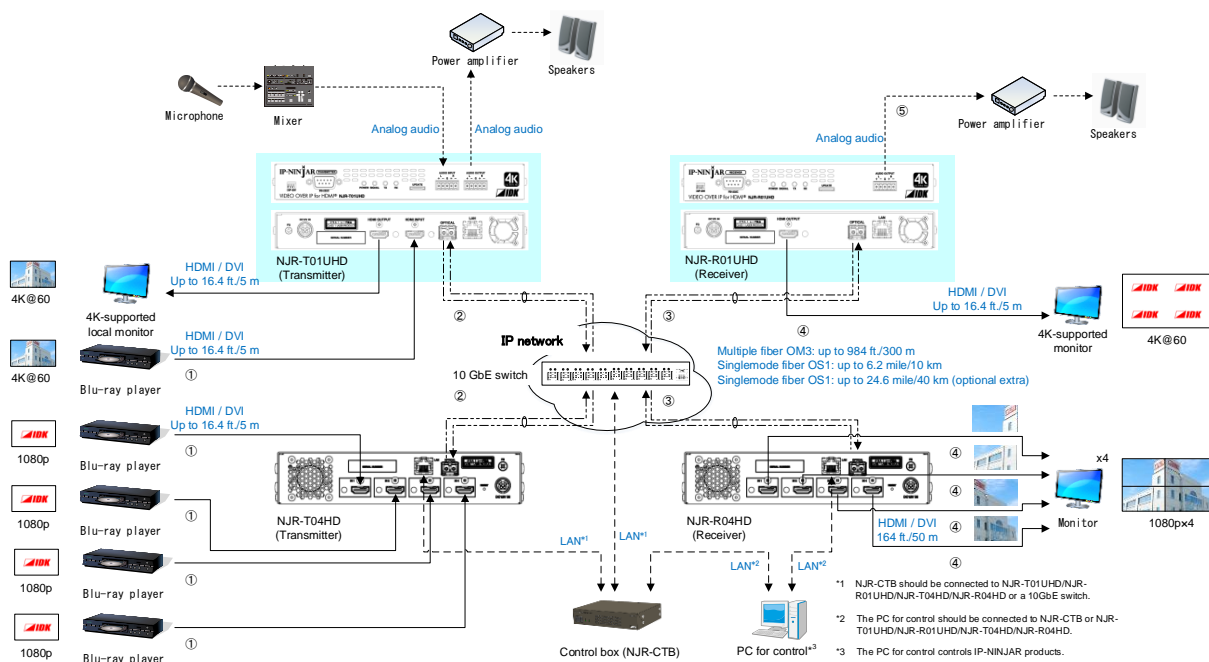
[Table 5.1] Part name and description

Number	Part name	Description
①	Power button	Powers on/off the NJR-CTB.
②	Power LED	Shows power status of the NJR-CTB. Powered on: Lights in green. Powered off: Does not light.
③	Access LED	Shows HDD disk access status Being accessed: Lights in green. No accessed: Does not light
④	Power supply connector	For the provided AC adapter.
⑤	FG (Frame ground)	For indoor ground terminal. M3 screws are used.
⑥	MAINTENANCE port	Connects to the data network segmanet which is separated from the IP-NINAJAR 10G network segment.
⑦	LAN port	Connects to IP-NINJAR 10G network segment.

## 6 System configuration example

The NJR-CTB enables extension, distribution, matrix switching, videowall, multiview using with IP-NINJAR series transmitters, receivers, and a 10GbE switch. Additionally, the Web GUI allows you to set, manage and control IP-NINJAR products that are connected to a network.

- ① The Blu-ray player inputs video and audio signals to the HDMI input connector of the NJR-T01UHD/NJR-T04HD.
- ② The NJR-T01UHD/NJR-T04HD sends these signals to the 10GbE switch over a fiber optic cable.
- ③ The 10GbE switch sends these signals to the selected NJR-R01UHD/NJR-R04HD or multiple NJR-R01UHD/NJR-R04HD.
- ④ The NJR-R01UHD/NJR-R04HD outputs these received signals to monitors from its HDMI output connector.
- ⑤ The analog audio output connector of the NJR-R01UHD outputs digital or analog audio of NJR-T01UHD/NJR-T04HD.



[Figure 6.1] System configuration example



## 7 Preparations

---

Before using connecting the NJR-CTB, follow the precautions and instructions below.

### 7.1 Installation

---

Follow the instructions below when installing the NJR-CTB.

- Do not place the NJR-CTB on another device directly.
- Do not block vent holes. To provide adequate ventilation, maintain sufficient clearances around the NJR-CTB (30 mm/1.18 inches or more).
- Prepare ventilating equipment to keep the ambient temperature at 40 degrees C/104 degrees F or less. If inadequately vented, the life of parts may be shortened and operation may be affected.

### 7.2 Cabling

---

Follow the precautions below when connecting NJR-CTB to an external devices.

- Read the user guides of the external devices carefully.
- When connecting a cable to the NJR-CTB or a compatible product, dissipate static electricity by touching grounded metal such as racks before handling single cables. Failure to observe this precaution may result in ESD (electrostatic discharge) damage.
- Turn off all devices.
- Be sure to fully seat all plugs and connections and dress cables to reduce stress on connectors.

#### 7.2.1 Connecting LAN cable

---

The NJR-T01UHD and NJR-R01UHD send broadcast packets through the 10GbE LAN ports periodically for the purposes of internal system management. If the 10GbE LAN port is connected to an existing network, it may cause a **broadcast storm**\* and may severely interfere with normal network operation. Contact IDK before attempting to connect the 10GbE LAN ports of an IP-NINJAR system to any existing network infrastructure.

**\*A broadcast storm occurs when a network is overwhelmed by continuous broadcast traffic resulting in a network meltdown.**

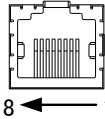
During installation, it is important to avoid the creation of network loops. Contact IDK if you require assistance with network implementation.

**7.2.1.1 MAINTENANCE / LAN port specification**

LAN and MAINTENANCE port assignments are as follows.

Since Auto MDI / MDI-X that distinguishes and switches straight/cross cables automatically is supported, extra care is not necessary to connect the NJR-CTB to PC, HUB or the like.

8-pin RJ-45 module connector



Pin number	Signal			
	MDI		MDI-X	
	1000BASE-T	100BASE-TX/10BASE-T	1000BASE-T	100BASE-TX/10BASE-T
1	TRX+ (Transmitted/Received data+)	TX+ (Transmitted data+)	TRX+ (Transmitted/Received data+)	RX+ (Received data+)
2	TRX- (Transmitted/Received data-)	TX- (Transmitted data-)	TRX- (Transmitted/Received data-)	RX- (Received data-)
3	TRX+ (Transmitted/Received data+)	RX+ (Received data+)	TRX+ (Transmitted/Received data+)	TX+ (Transmitted data+)
4	TRX+ (Transmitted/Received data+)	N.C. (No Connection)	TRX+ (Transmitted/Received data+)	N.C. (No Connection)
5	TRX- (Transmitted/Received data-)	N.C. (No Connection)	TRX- (Transmitted/Received data-)	N.C. (No Connection)
6	TRX- (Transmitted/Received data-)	RX- (Received data-)	TRX- (Transmitted/Received data-)	TX- (Transmitted data-)
7	TRX+ (Transmitted/Received data+)	N.C. (No Connection)	TRX+ (Transmitted/Received data+)	N.C. (No Connection)
8	TRX- (Transmitted/Received data-)	N.C. (No Connection)	TRX- (Transmitted/Received data-)	N.C. (No Connection)

**[Figure 7.1] LAN port**

**7.2.1.2 MAINTENANCE / LAN communication specification**

**[Table 7.1] LAN communication**

Physical layer	10Base-T (IEEE802.3i) / 100Base-TX (IEEE802.3u) / 1000Base-T (IEEE802.3ab)
Network layer	ARP, IP, ICMP
Transport layer	TCP Port used for command control: 1100 Port used for WEB browser control (HTTP): 80
Application layer	HTTP

**Note:**

Up to 8 connections can be used simultaneously for command control.

### 7.2.1.3 Limit on the number of TCP-IP connections and port overload management

The NJR-CTB's maintenance port supports a maximum of eight simultaneous connections (eight logical ports). To maintain optimal system accessibility, it is advisable to issue "port-open" and "port-close" commands before and after command or query strings are issued. This approach enables eight or more control devices to be effectively interfaced simultaneously and without concern for communication errors. As a safeguard, the NJR-CTB incorporates a 30-second timeout window for each port. If any port is inactive for more than 30 seconds, it will be closed automatically.

**[Table 7.2] Increasing connections**

Your PC software		NJR-CTB
Connecting TCP-IP	→	(Occupying 1 port)
Sending command (@xxx)	→	
	←	Replying command (@xxx)
Closing TCP-IP	→	(Releasing 1port)

**Note:**

If no command is sent from the PC side to the NJR-CTB for 30 seconds, the NJR-CTB automatically disconnects from that device.

## 7.2.2 DIN plug AC adapter with lock

---

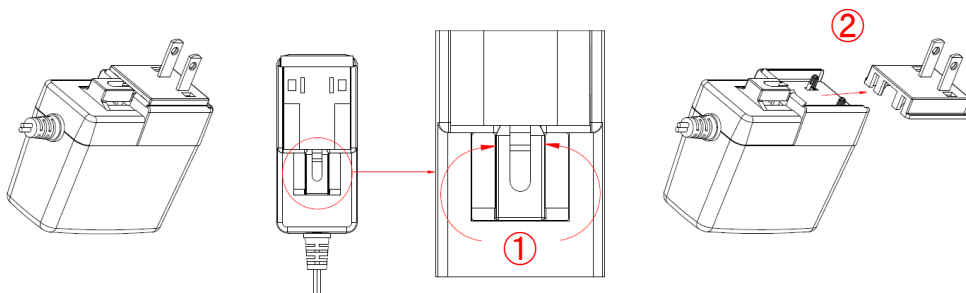
### ■ Attaching and removing AC plug

AC plug shapes of the AC adapter with screw type lock mechanism differ from one country to another; use an appropriate AC plug.

For inquiries for the AC plug, contact us directly.

Removing:

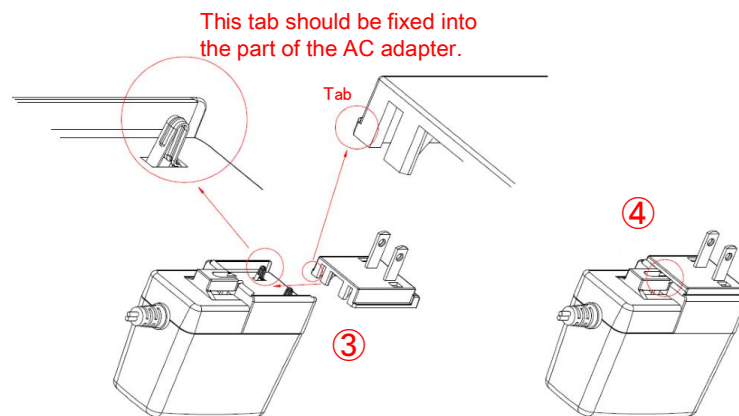
Hold the joint of the AC adapter (①) and slid the AC plug from the AC adapter (②).



[Figure 7.2] Removing AC plug

Attaching:

Attach the AC plug to the AC adapter (③) until it clicks (④).

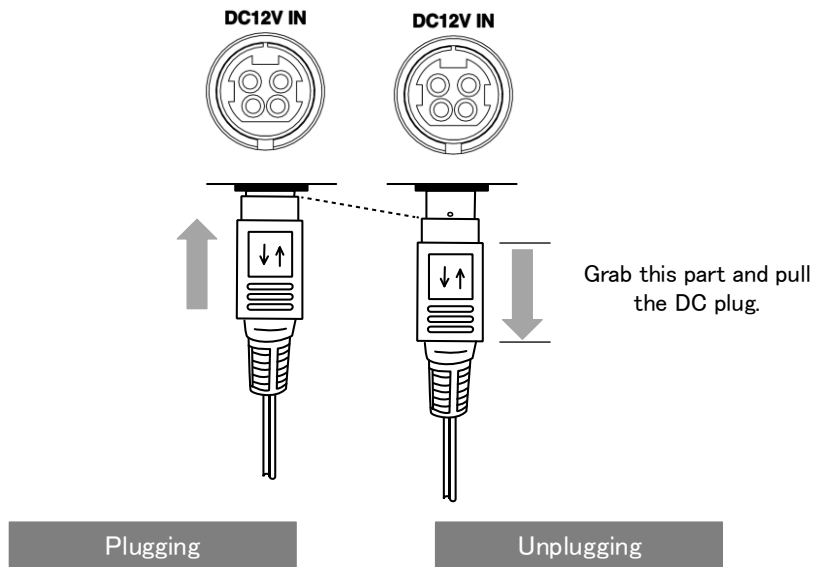


[Figure 7.3] Attaching AC plug

■ **Plugging and unplugging DC plug**

Plug the DC plug to the power supply connector of the NJR-CTB until it clicks.

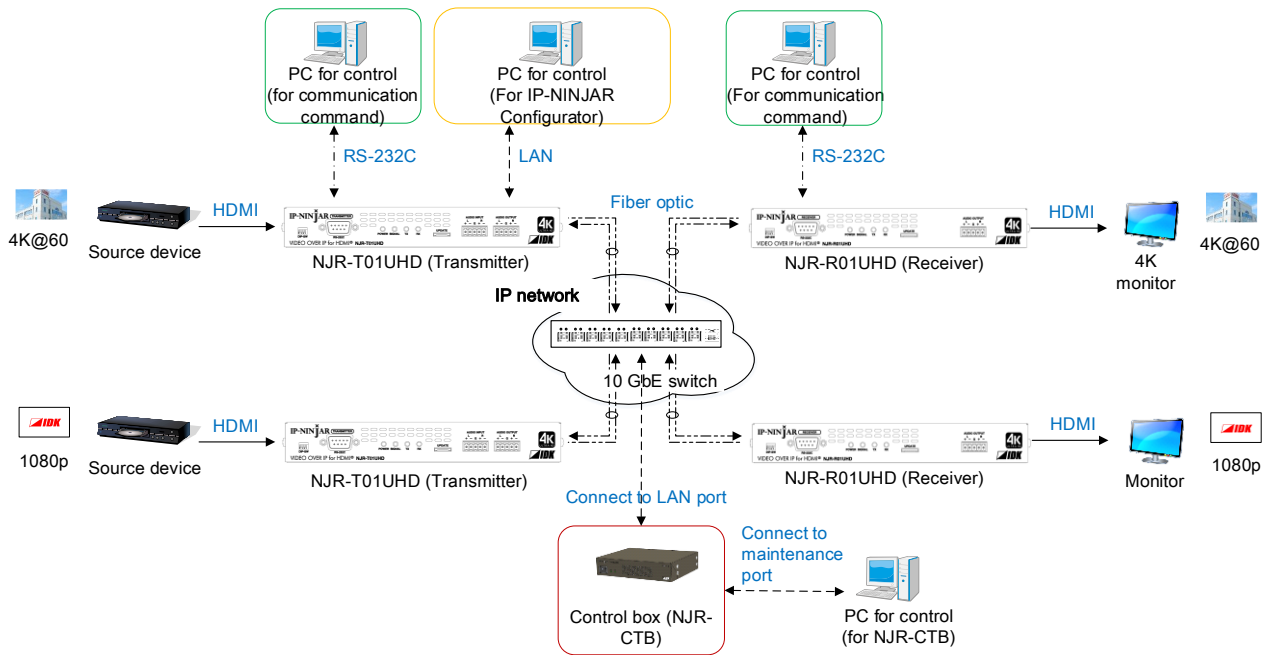
Grab the portion mentioned below when unplugging the DC plug.



**[Figure 7.4] Plugging and unplugging DC plug**

## 8 Basic Operation

Settings and controlling can be performed from LAN communication or WEB browser by connecting the LAN port of the NJR-CTB to an IP-NINJAR product or 10GbE switch.



[Figure 8.1] Setting NJR-CTB

## 8.1 Control via LAN communication

---

The NJR-CTB can be accessed and controlled via LAN communication.

Connecting a control device to the NJR-CTB's MAINTENANCE port or the LAN port of the IP-NINJAR using a LAN cable enables system control and status queries by communication command.

For details of communication command, refer to "NJR-T01UHD/NJR-R01UHD Command Guide" or "NJR-CTB Command Guide".

## 8.2 Control using WEB browser

---

The NJR-CTB connected to LAN can be accessed and controlled by menu operations on a WEB browser (e.g. Microsoft Internet Explorer) .

Enter the following IP address into the address bar of the WEB browser.

For details of control using a WEB browser, see Chapter 10.

**[Table 8.1] Default IP address: Maintenance Port**

Control port number of WEB browser	Default IP address: Maintenance Port
80 (used generally)	https://192.168.1.199

## 8.3 Setting method

**[Table 8.2] Available setting method**

C: Command input, G: GUI operation, W: WEB browser and command input, No: Not supported, -: N/A

Setting item	Setting method					Page
	NJR-T01UHD / NJR-R01UHD		NJR-T04HD / NJR-R04HD		NJR-CTB	
	RS-232C	LAN (IP-NINJAR Configurator)	RS-232C	LAN (IP-NINJAR Configurator)	LAN	
Non-signal input monitoring*	C	C	C	C	W	-
Setting HDCP input*	C	C	C	C	W	-
Output mode*	C	C	C	C	W	-
Digital audio output mute*	C	C	C	C	W	-
Output audio*	No	G	-	-	W	-
EDID resolution*	C	C	C	C	W	-
Copying EDID*	C	C	-	-	W	-
WXGA mode*	C	C	C	C	W	-
Deep Color input*	C	C	C	C	W	-
Audio format*	C	C	C	C	W	-
Speaker configuration*	C	C	C	C	W	-
Output resolution*	-	-	C	C	C	-
Aspect ratio for sink device*	-	-	C	C	C	-
Aspect ratio*	-	-	C	C	C	-
Aspect ratio control*	-	-	C	C	C	-
Overscan*	-	-	C	C	C	-
Display position*	-	-	C	C	C	-
Display size*	-	-	C	C	C	-
Masking*	-	-	C	C	C	-
Automatic sizing*	-	-	C	C	C	-
Background color*	-	-	C	C	C	-
Test pattern*	-	-	C	C	C	-
Cropping*	-	-	C	C	C	-
Brightness*	-	-	C	C	C	-
Contrast*	-	-	C	C	C	-
HUE*	-	-	C	C	C	-
Saturation*	-	-	C	C	C	-
Sharpness*	-	-	C	C	C	-
Gamma*	-	-	C	C	C	-
Default color*	-	-	C	C	C	-
HDCP re-authentication*	-	-	C	C	C	-
Output Sync Signal when there is no input signal*	-	-	C	C	C	-



Setting item	Setting method					Page
	NJR-T01UHD / NJR-R01UHD		NJR-T04HD / NJR-R04HD		NJR-CTB	
	RS-232C	LAN (IP-NINJAR Configurator)	RS-232C	LAN (IP-NINJAR Configurator)	LAN	
Output Video image when there is no input signal*	-	-	C	C	C	-
Deep Color output*	-	-	C	C	C	-
Video type*	-	-	C	C	C	-
Matrix switch*	-	-	C	C	C	-
Master Sync Signal*	-	-	C	C	C	-
Frame delay*	-	-	C	C	C	-
Audio level*	-	-	C	C	C	-
Multiple channel audio input*	-	-	C	C	C	-
Lip synch*	-	-	C	C	C	-
Test tone*	-	-	C	C	C	-
RS-232C communication*	No	G	No	G	W	-
LAN*	No	G	No	G	W	-
MAC address*	No	G	No	G	W	-
Initialization*	No	G	No	G	W	-
Reboot*	No	G	No	G	W	-
Input status*	C	C	C	C	W	-
Output status*	C	C	C	C	W	-
EDID of monitor*	C	C	C	C	W	-
Version*	C	C	C	C	W	-
Channel information	No	No	No	No	W	26
Output resolution	No	No	No	No	W	26
Video distribution	No	No	No	No	W	26
Switching channel	No	No	No	No	W	27
Crosspoint	No	No	No	No	W	28
Videowall	No	No	No	No	W	28
Multiview	No	No	No	No	W	29
RS-232C communication	No	No	No	No	W	29
NJR-CTB LAN	No	No	No	No	W	29

\*: This User Guide explains only settings of NJR-CTB. For settings of NJR-01UHD and NJR-04HD, refer to “NJR-T01UHD/NJR-R01UHD User Guide” or “NJR-T04HD/NJR-R04HD User Guide”.

## 9 Settings

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Each item can be set via LAN communication or using a WEB browser.

This User Guide explains only settings of NJR-CTB. For settings of NJR-01UHD and NJR-04HD, refer to “NJR-T01UHD/NJR-R01UHD User Guide” or “NJR-T04HD/NJR-R04HD User Guide”.

### 9.1 Basic settings

---

#### 9.1.1 Channel information

NJR-01UHD / NJR-04HD

Sets channel information to IP-NINJAR products connected to a 10Gb E switch.

Channel information is allocated to IP-NINJAR products connected to a 10Gb E switch.

##### Communication command

@GCHI      Getting channel information  
 @SCHI      Setting channel information

#### 9.1.2 Output resolution

NJR-01UHD / NJR-04HD

Sets the output resolution from the receiver.

##### Communication command

@GVOS      Getting video output  
 @SVOS      Setting video output

#### 9.1.3 Video distribution

NJR-01UHD / NJR-04HD

Sets video distribution.

- For transmitters, settings for starting and stopping video distribution and initializing distribution address can be set.

[Default]: Video distribution: Stop      Distribution address is not set

- For receivers, setting for stopping video distribution can be set.

[Default]: Video distribution: Stop

##### Communication command

@GVDS      Getting video distribution  
 @SVDS      Setting video distribution

## 9.2 Switching channel

NJR-01UHD / NJR-04HD

### 9.2.1 Switching video and digital audio channel simultaneously

Specifies the receiver to which video and digital audio that are input to the transmitter are distributed.

#### Communication command

@GSW      Getting switching video and digital audio channel simultaneously  
 @SSW      Setting switching video and digital audio channel simultaneously

### 9.2.2 Switching video channel

NJR-01UHD / NJR-04HD

Specifies the receiver to which video that is input to the transmitter are distributed.

#### Communication command

@GSV      Getting switching video channel  
 @SSV      Setting switching video channel

### 9.2.3 Switching digital audio channel

NJR-01UHD / NJR-04HD

Specifies the receiver to which digital audio that is input to the transmitter are distributed.

#### Communication command

@GSA      Getting switching digital audio channel  
 @SSA      Getting switching digital audio channel

### 9.2.4 Switching analog audio channel

NJR-01UHD

Specifies the receiver to which analog audio that is input to the transmitter are distributed.

#### Communication command

@GSAA     Getting switching analog audio channel  
 @SSAA     Setting switching analog audio channel

### 9.2.5 Switching RS-232C channel

NJR-01UHD / NJR-04HD

Specifies the receiver or transmitter to which RS-232C that is input to the transmitter or receiver are distributed.

#### Communication command

@GSWR     Getting switching RS-232C channel  
 @SSWR     Setting switching RS-232C channel

## 9.3 Crosspoint

---

### 9.3.1 Loading cross point preset

NJR-01UHD / NJR-04HD

Loads registered cross point preset.

#### Communication command

@RCPP Loading cross point preset

### 9.3.2 Cross point preset

NJR-01UHD / NJR-04HD

Sets preset of cross point.

#### Communication command

@GCPP Getting cross point preset

@SCPP Setting cross point preset

## 9.4 Videowall

---

### 9.4.1 Loading videowall preset

NJR-01UHD / NJR-04HD

Loads registered videowall preset.

#### Communication command

@RVWP Loads videowall preset

### 9.4.2 Videowall preset

NJR-01UHD / NJR-04HD

Sets videowall preset.

#### Communication command

@GVWP Getting videowall preset

@SVWP Setting videowall preset

## 9.5 Setting Multiview

---

### 9.5.1 Loading multiview preset

NJR-01UHD / NJR-04HD

Loads registered multiview preset.

#### Communication command

@RMVP    Loading multiview preset

### 9.5.2 Multiview preset

NJR-01UHD / NJR-04HD

Sets multiview preset

#### Communication command

@GMVP    Getting multiview preset

@SMVP    Setting multiview preset

## 9.6 Communication setting

---

### 9.6.1 Setting RS-232C communication

NJR-01UHD / NJR-04HD

Sets communication between transmitter and receiver via RS-232C.

#### Communication command

@GRSS    Getting RS-232C communication setting

@SRSS    Setting RS-232C communication

### 9.6.2 Setting LAN

NJR-CTB / NJR-01UHD / NJR-04HD

Sets the IP-NINJAR network to DHCP (Dynamic Host Configuration Protocol) or sets IP address, subnet mask and default gateway as a static address.

#### Communication command

@GIPS    Getting LAN setting

@SIPS    Setting LAN

## 9.7 Maintenance

---

### 9.7.1 Version

NJR-CTB / NJR-01UHD / NJR-04HD

Gets version information of IP-NINJAR products.

#### Communication command

@GIVC      Getting version information

### 9.7.2 Initialization

NJR-CTB / NJR-01UHD / NJR-04HD

Initializes settings of IP-NINJAR products and communication settings (LAN, RS232C) as needed.

Note that once initializing settings, these previous setting values cannot be restored.

When the initialization completes, the NJR-CTB reboots with new settings automatically.

#### Communication command

@CLRC      Initialization

### 9.7.3 Reboot

NJR-CTB / NJR-01UHD / NJR-04HD

Reboots IP-NINJAR products.

#### Communication command

@RBTC      Reboot

## 10 WEB browser

The NJR-CTB's MAINTENANCE port enables IP-NINJAR products status display, control, setting, and maintenance using the GUI on a WEB browser.

In order to access to the GUI, enter "https://CCC.CCC.CCC.CCC" (C:IP address set for the MAINTENANCE port; [Default]: 192.168.1.199) into the address bar of a WEB browser.

The login screen will be displayed. The user name and password of factory default are as follows.

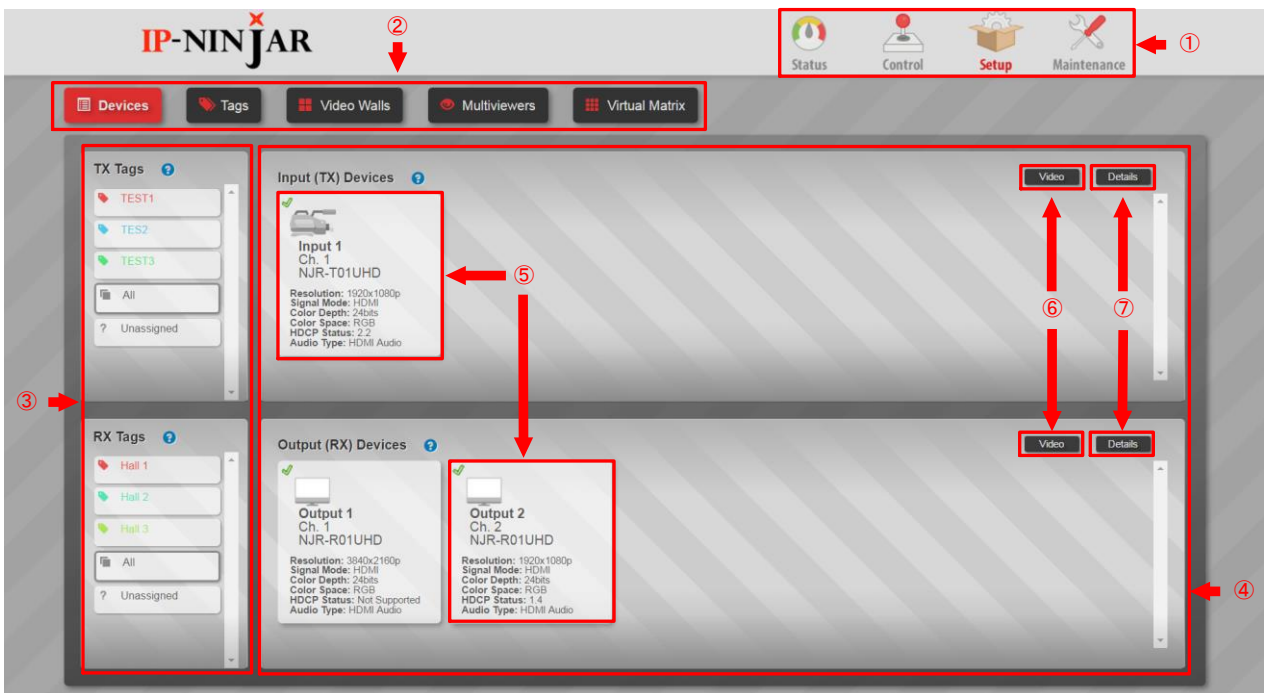
User name: admin

Password: admin

### 10.1 GUI(Graphic User Interface)

An IP-NINJAR product connected to a network as the first time is detected automatically and displayed on the GUI. For channels, settings allocated automatically is saved.

IP-NINJAR products that was already detected and saved are displayed on the GUI even it is disconnected from the network unless saved data is deleted.



[Figure 10.1] GUI

- ① Selects a main menu. The selected menu is indicated in red.

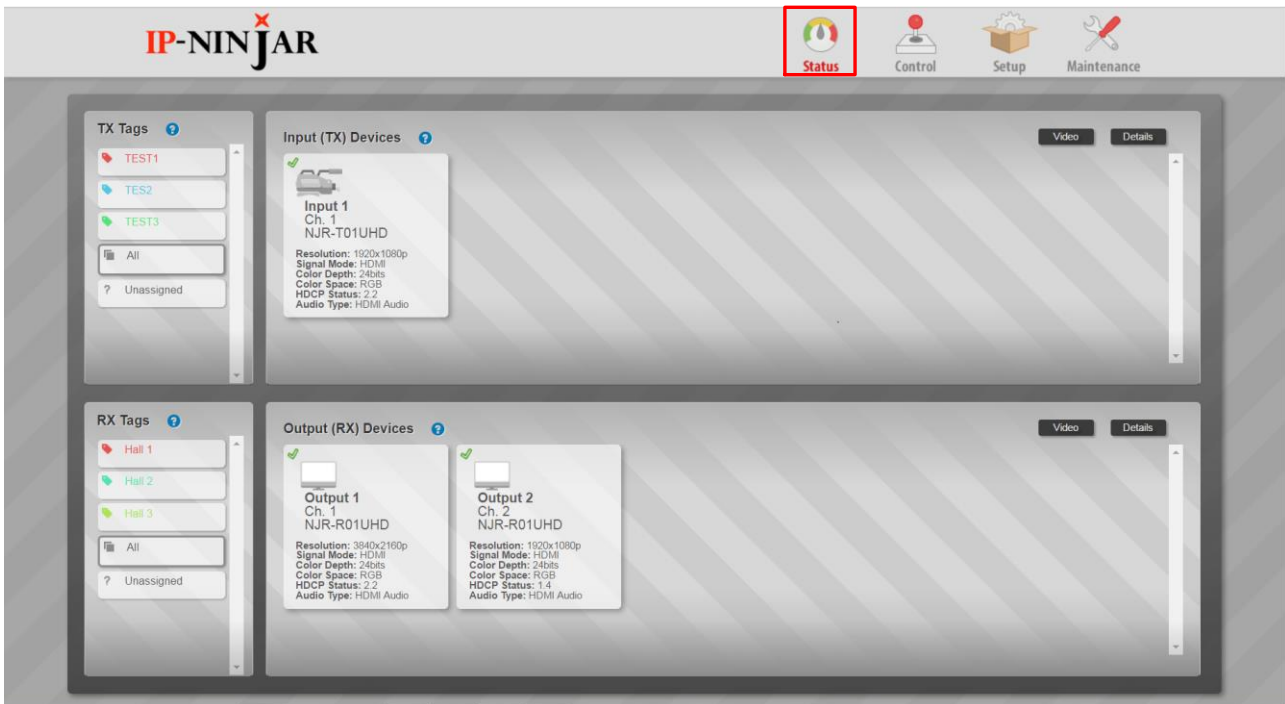
Status : Displays each status of the connected IP-NINJAR products  
 Control : Controls the connected IP-NINJAR products  
 Setup : Sets the connected IP-NINJAR products  
 Maintenance : Does maintenance the connected IP-NINJAR products and NJR-CTB

Once an IP NINJAR product is connected to the network, the information of the connected device will be saved in the NJR-CTB unless the data is deleted.

- ② Selects a submenu.  
 ③ Displays Tags of transmitters and receivers. Filters devices by assigning Tags to each unit.  
 ④ Displays transmitters and receivers connected on the network.  
 ⑤ Displays information of each transmitter and receiver.  
 ⑥ Switches between "Video" and "Network" displayed on ⑤.  
 ⑦ Switches between Grid display and List display for ④.

## 10.2 Status (Display device status)

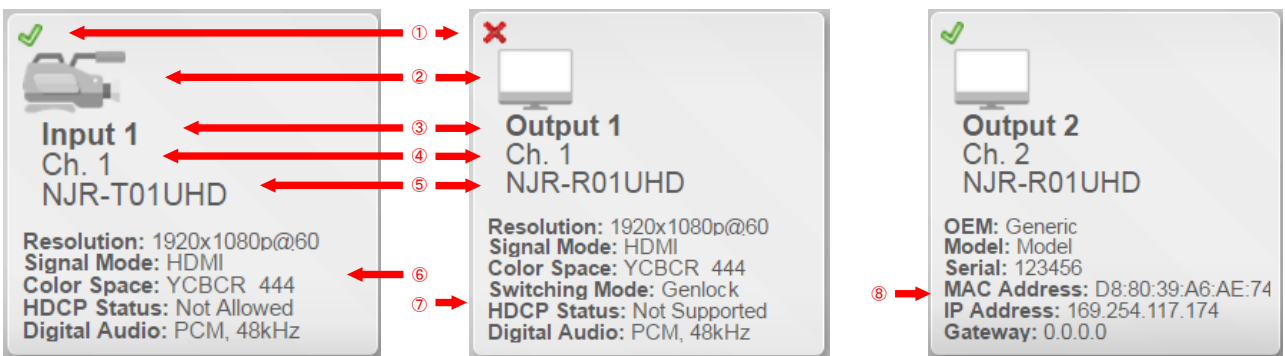
Status: Displays basic and detailed information of devices.



[Figure 10.2] Status

### 10.2.1 Basic status

Click the “Status” button and then basic information of each transmitter and receiver is displayed on the information display area.



[Figure 10.3] Grid display

Name	Ch. No.	Part	Resolution	Signal Mo...	Color Dep...	Color Spa...	HDCP Su...	HDCP Sig...	HD...	Audi...
Input 1	1	NJR-T01UHD	1920x1080p	HDMI	24bits	RGB	2.2	true	-	PCM



①

Name	Ch. No.	MAC	IP	Netmask	Gateway	OEM	Model
Input 1	1	D8:80:39:A7:26:61	169.254.98.38	255.255.0.0	0.0.0.0	Gener ic	Model

[Figure 10.4] List display



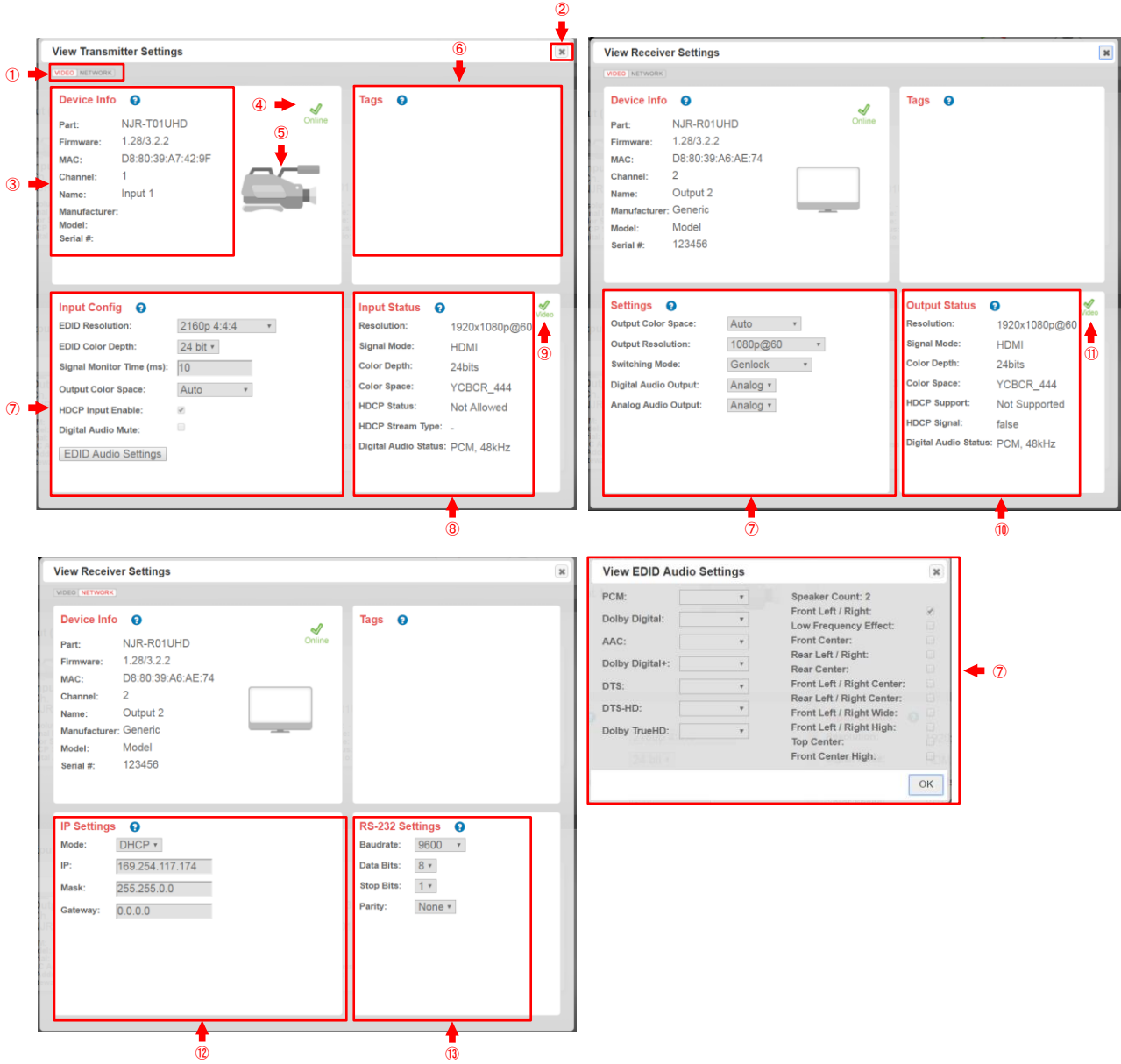
**[Table 10.1] Status window**

Number	Name	Description
①	Connection status on the network	 Online: Devices are connected to the network and the NJR-CTB recognizes the devices.  Offline: No device is connected to the network or the NJR-CTB cannot recognize the device.
②	Icon	Can be edited by users from Setup.
③	Name	Can be renamed from Setup.
④	Ch. #	Device channel number Can be edited from Setup.
⑤	Part	IDK product name
⑥	Resolution Signal Mode Color Space HDCP Status Digital Audio	Signal resolution that is input from the source device Signal type that is input from the source device Signal color format that is input from the source device HDCP authentication between the transmitter and receiver Audio information that is input from the source device
⑦	Resolution Signal Mode Color Space Switching Mode HDCP Status Digital Audio	Signal resolution that is output to the sink device Signal type that is output to the sink device Signal color format that is output to the sink device Setting of switching mode HDCP authentication between the receiver and sink device Audio information that is output to the sink device
⑧	OEM  Model  Serial  MAC Address IP Address Gateway	Manufacturer of the connected device that can be edited from Setup  Model name of the connected device that can be edited from Setup  Serial number of the connected device that can be edited from Setup  MAC address IP address Gateway

The transmitter detects +5V signal from the source device while the receiver detects HPD (Hot Plug Detect) signal from the sink device. Even if +5V or HPD signal is detected, video signal may not be received or video may not be displayed on the display device. In such a case, check the video signal information and status in “Input Status” and “Output Status”.

## 10.2.2 Displaying detailed status information

Select “Status” in the main menu and left click the information display area of each transmitter and receiver to check the detailed information. You can get the information also by selecting “Control” and right click the information display area of each transmitter and receiver.









[Figure 10.5] Detailed status window

[Table 10.2] Buttons and information on detailed status window

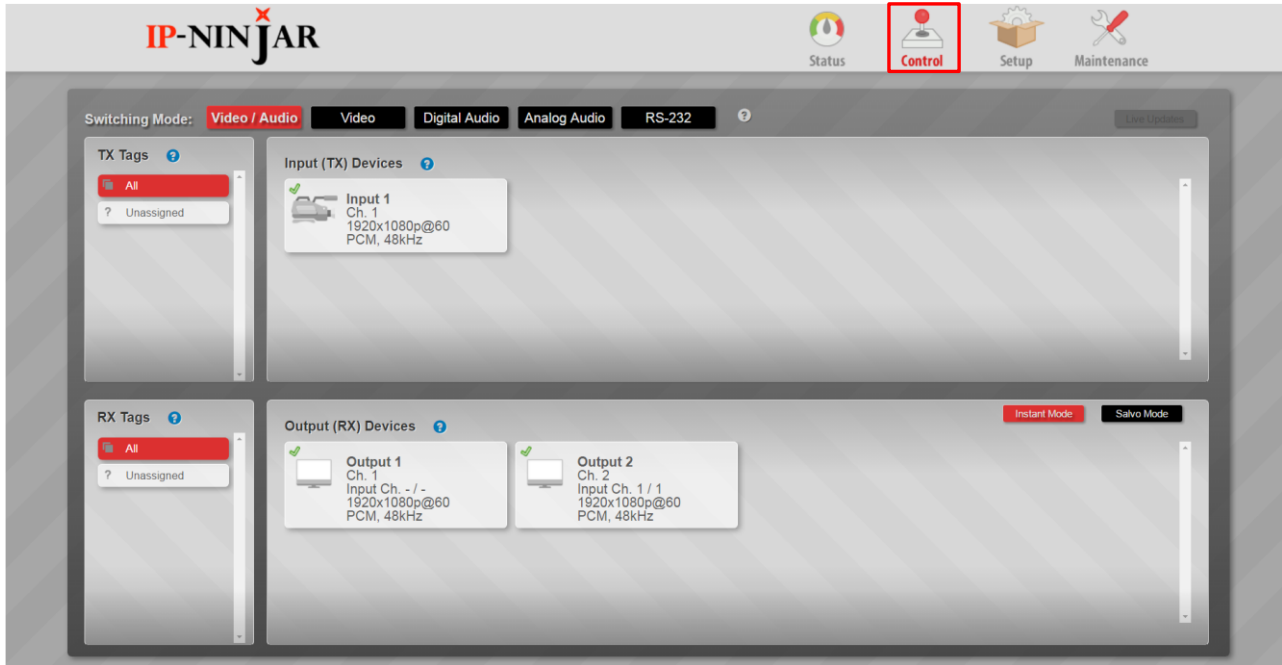
Number	Name	Description
①	Switching button	Switches VIDEO/NETWORK of displayed information.
②	Close button	Closes the window. You can close it also by left clicking the outside of the window.

**[Table 10.3] Buttons and information on detailed status window**

Number	Name		Description
③	Device Info	Part Firmware MAC Channel Name Manufacturer Model Serial #	IDK product name Firmware version MAC address Channel number information Channel name that can be edited by user Manufacture name that can be edited by user Model number that can be edited by user Connected device's serial number that can be edited by user
④	Connection status		 Online: Devices are connected to the network and the NJR-CTB recognizes the devices.  Offline: No device is connected to the network or the NJR-CTB cannot recognize the device.
⑤	Icon		Channel icon that can be edited by user
⑥	Tags		Tag information of the device
⑦	Input Configuration Output Configuration		Displays the device setting information 【See: 10.4.1 Devices (Setting device)(P.40)】
⑧	Input Status	Resolution Signal Mode Color Depth Color Space HDCP Status  HDCP Stream Type Digital Audio Status	Signal resolution that is input from the source device Signal type that is input from the source device Signal color depth that is input from the source device Signal color format that is input from the source device HDCP authentication between the transmitter and receiver HDCP2.2 stream type that is input from the source device Audio information that is input from the source device
⑨	Video Signal		 On: The transmitter and source device are connected.  Off: The transmitter and source device are not connected.
⑩	Input Status	Resolution Signal Mode Color Depth Color Space HDCP Support  HDCP Signal Digital Audio Status	Signal resolution that is output to the sink device Signal type that is output to the sink device Color depth that is output to the sink device Signal color format that is output to the sink device HDCP authentication between the receiver and sink device Audio information that is output from the sink device Audio information that is input from the source device
⑪	Video Signal		 On: The receiver and sink device are connected.  Off: The receiver and sink device are not connected.
⑫	IP Settings		Displays network setting information. 【See: 10.4.1 Devices (Setting device)(P.40)】
⑬	RS-232C Settings		Displays RS-232C setting information. 【See: 10.4.1 Devices (Setting device)(P.40)】

### 10.3 Control (Device control)

Switches video, digital audio, analog audio, and RS-232C on a network. Videowall and multiview that is set in “Setup” can also be switched. When switching only multiview (only video), you need to switch digital audio separately.



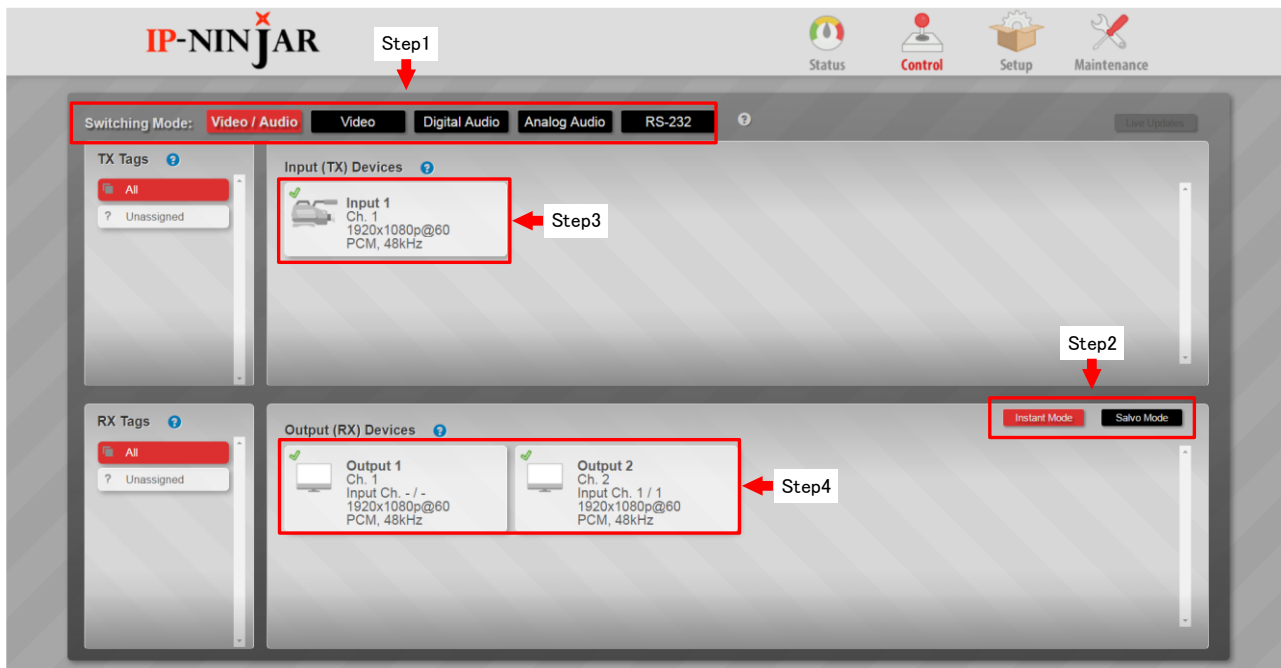
[Figure 10.6] Control window

### 10.3.1 Switching procedure

There are two methods to switching video and audio in the Control window.

#### Instant Mode

1. Select the submenu you want to switch. The selected submenu is highlighted in red.
2. Select "Instant Mode". The selected mode is highlighted in red.
3. Left click the transmitter you want to switch. The information display area of the selected transmitter is highlighted in red. The information display area of already selected receiver is highlighted in red.
4. Left click the receiver you want to switch video and audio. Multiple receivers can be selected. The information display area of the selected receiver is highlighted in red.



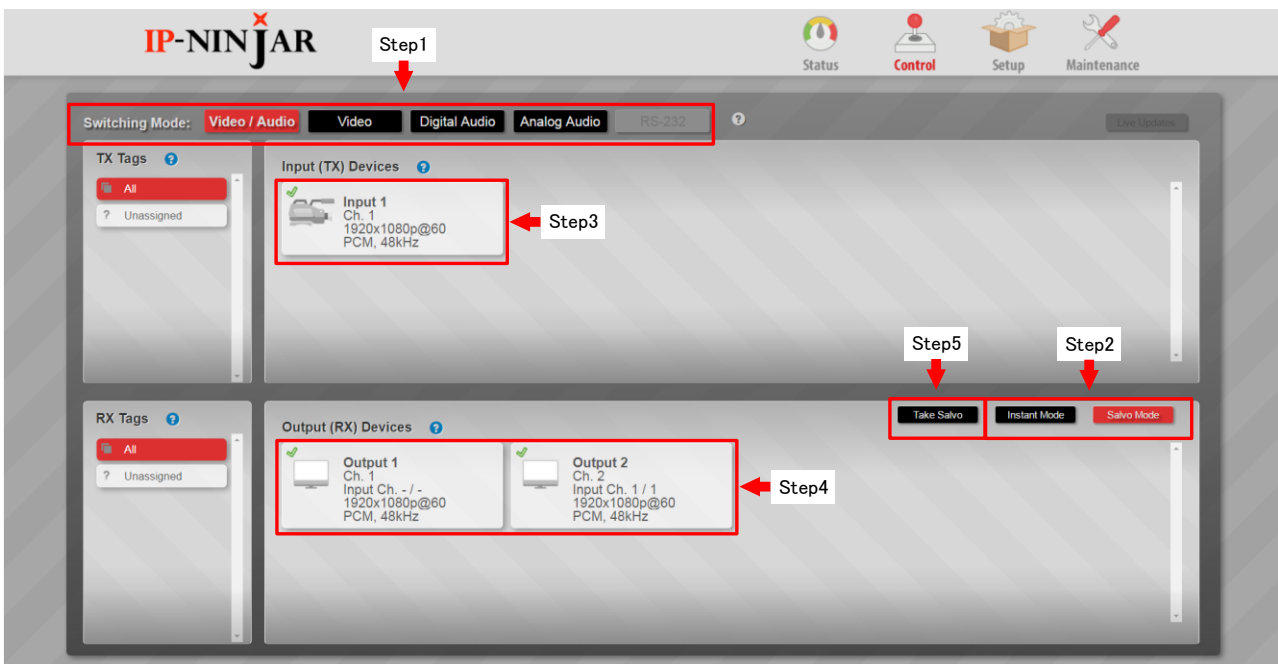
[Figure 10.7] Instant Mode

### Salvo Mode

1. Select the submenu you want to switch. The selected submenu is highlighted in red.
2. Select “Salvo Mode”. The selected mode is highlighted in red.
3. Left click the transmitter you want to switch. The information display area of the selected transmitter is highlighted in red. The information display area of already selected receiver is highlighted in red.
4. Left click the receiver you want to video and audio. Multiple receivers can be selected. The information display area of the selected receiver is highlighted in red. It is not switched yet at this point.
5. Left click “Take Salvo”.

**Note:**

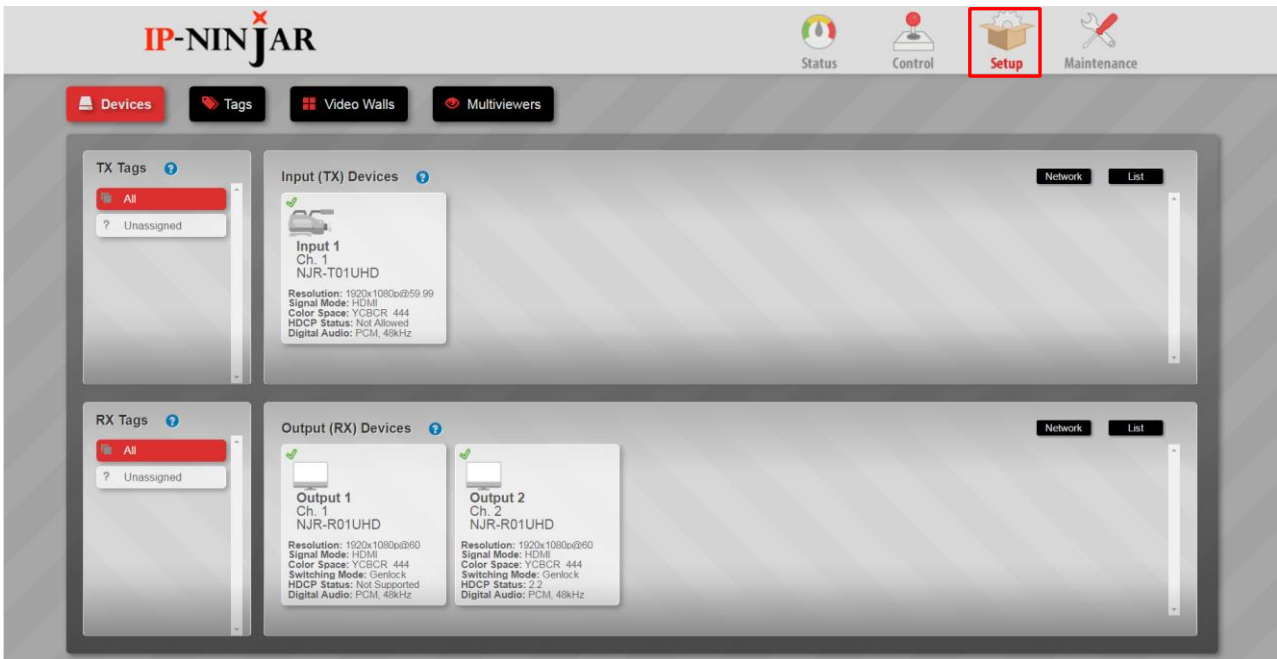
Videowall Channels cannot be selected or switched during Salvo Mode.



[Figure 10.8] Salvo Mode

## 10.4 Setup (Settings)

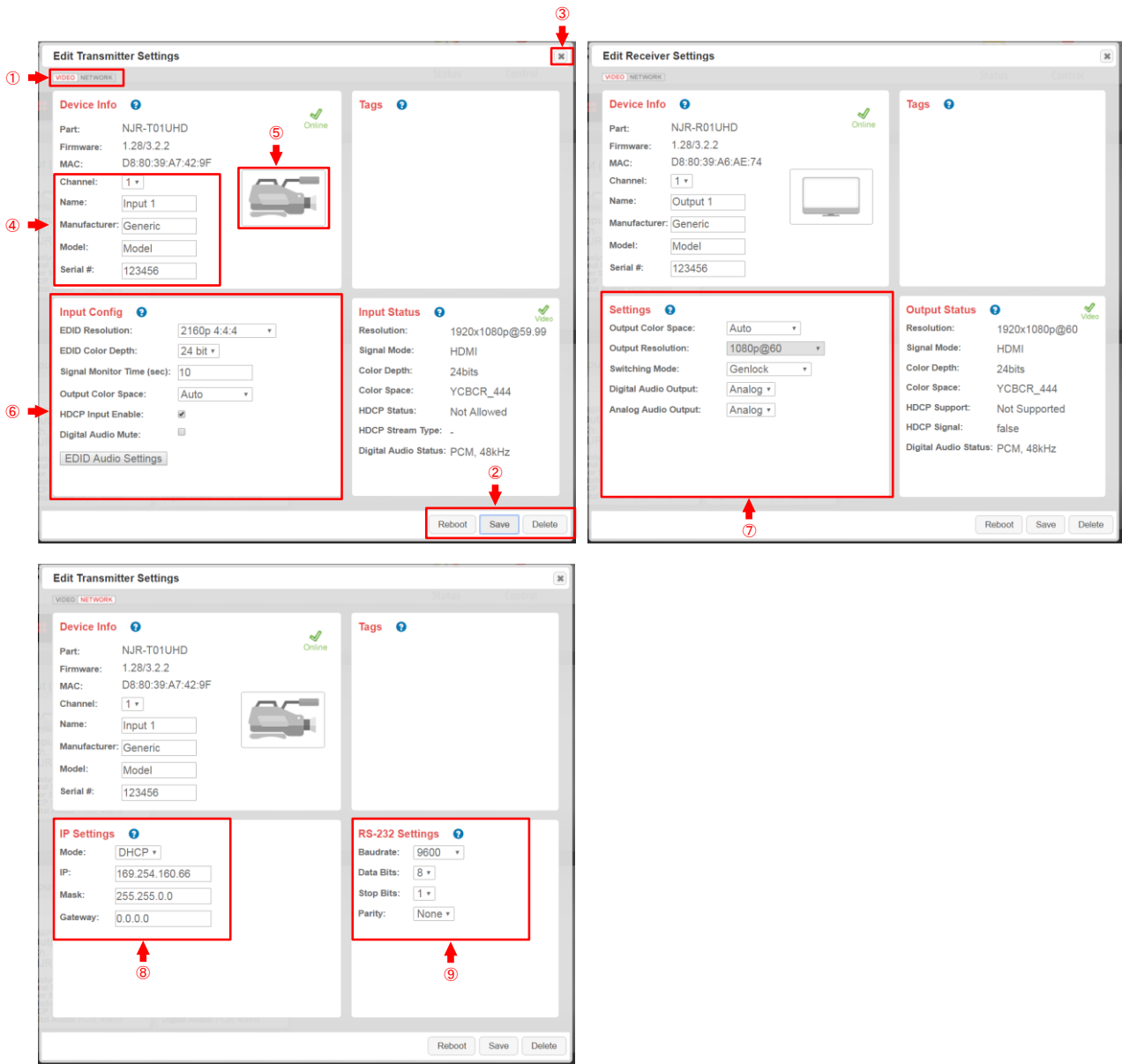
Sets basic information, video, audio, network, videowall, and multiview.



[Figure 10.9] Setup

### 10.4.1 Devices (Setting device)

Select “Devices” to set operation information, video, audio, and network. Left click the information display area of each device to open the detailed setting window.



[Figure 10.10] Setup window

[Table 10.4] Buttons and portion on Setup window

#	Name	Description
①	Display switching button	Switches VIDEO/NETWORK of displayed information.
②	Reboot button	Reboots the selected device.
	Save button	Saves changed settings.
	Delete button	Deletes information on the GUI. <b>Note:</b> All information linked to the channel is deleted.
③	Close button	Closes the window.



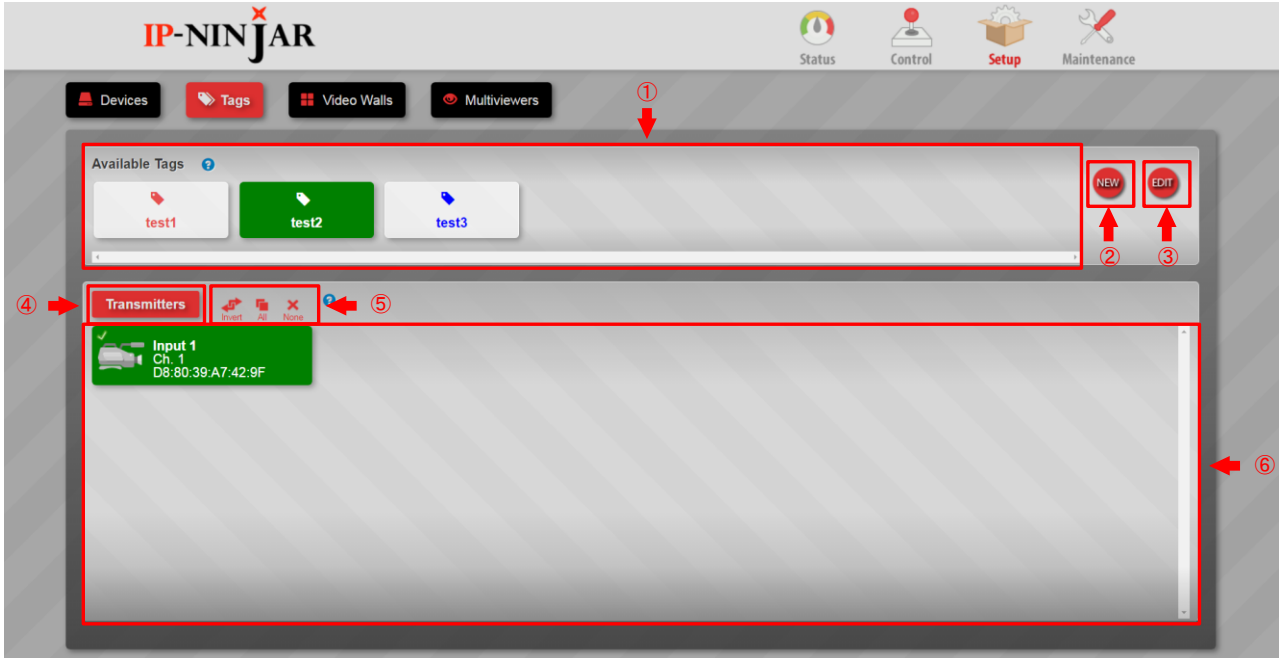
**[Table 10.5] Buttons and portion on Setup window (Cont'd)**

#	Name	Description	
④	Device Info	Channel	Channel number information
		Name	Channel name that can be edited by user
		Manufacturer	Manufacture name that can be edited by user
		Model	Model number that can be edited by user
		Serial #	Connected device's serial number that can be edited by user
⑤	Icon	Can be edited by users. When left clicked, another window appears.	
⑥	Input Config (Transmitter)	EDID Resolution	Sets the EDID resolution.
		EDID Color Depth	Sets the EDID color depth.
		Signal Monitor Time	Sets the Signal Monitor Time
		Output Color Space	Sets the color format when video is transmitted to a receiver.
		HDCP Input Enable	Enables or disables HDCP input.
		Digital Audio Mute	Mutes digital audio.
		EDID Audio Settings	Sets the EDID audio format and speaker configuration. When left clicked, another window appears.
⑦	Settings (Receiver)	Output Color Space	Sets the color format when video is transmitted to a receiver.
		Output Resolution	Sets output resolution when "Fast Switch" is selected for "Switching Mode".
		Switching Mode	Sets switching mode of the receiver.
		Digital Audio Output	Sets audio that is output from the HDMI connector.
		Analog Audio Output	Sets audio that is output from the analog audio.
⑧	IP Settings	Mode	Sets connection mode to the device's network
		IP	Device's IP address
		Mask	Device's subnet mask
		Gateway	Device's gateway
⑨	RS-232C Settings	Baud rate	Sets device's baud rate
		Data Bits	Sets device's data bit
		Stop Bits	Sets device's stop bit
		Parity	Sets device's parity

## 10.4.2 Tags (Setting and assigning Tags)

Creates, edits, and assigns Tags.

Assigning Tags enables status display and settings to be filtered for when multiple devices are displayed on the GUI.



[Figure 10.11] Tags window

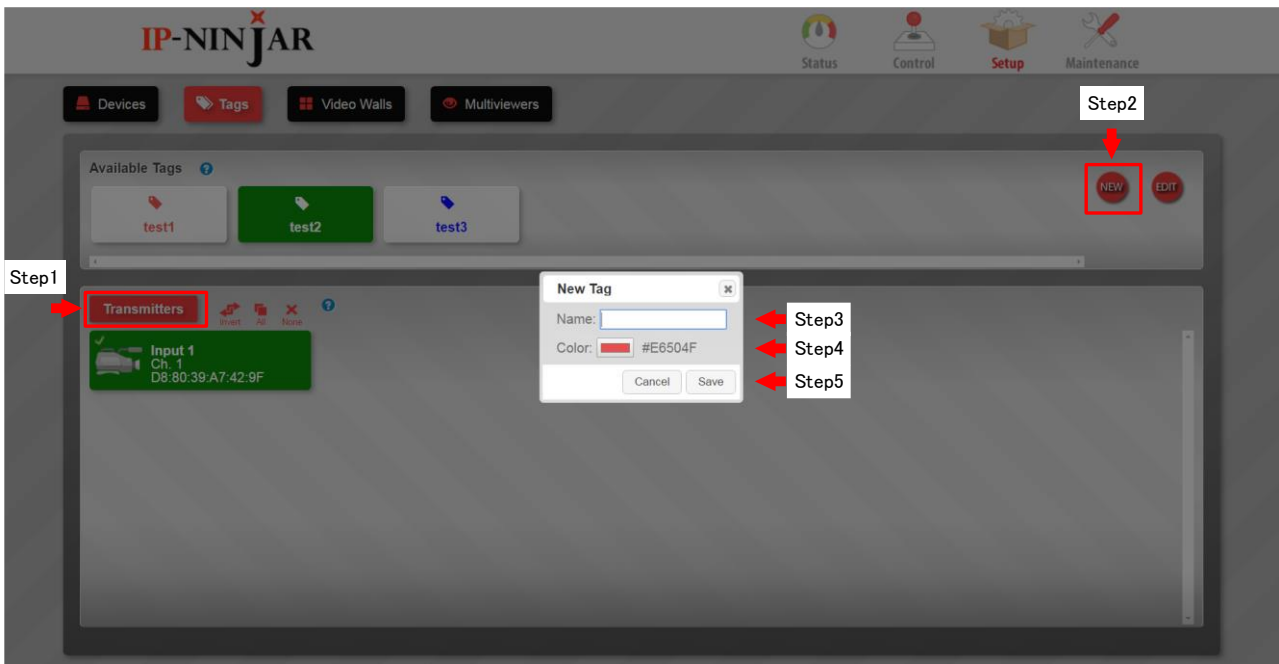
[Table 10.6] Buttons and portions on Tags window

Number	Name	Description
①	Available Tags	Displays assignable Tags.
②	NEW button	Creates a new Tag.
③	EDIT button	Edits or deletes existing Tags.
④	Switching transmitter ↔ receiver	Switches between a transmitter and receiver.
⑤	Invert button All button None button	Switches between Selected / Not selected Selects all. Cancel all selections.
⑥	Transmitter and receiver display area	Displays transmitters and receivers.

### 10.4.2.1 Tags (Creating new tag)

Procedure for creating a new tag:

1. Select the transmitter or receiver.
2. Click the “NEW” button.
3. Enter the name.
4. Select the color.
5. Click the “Save” button to save these settings.



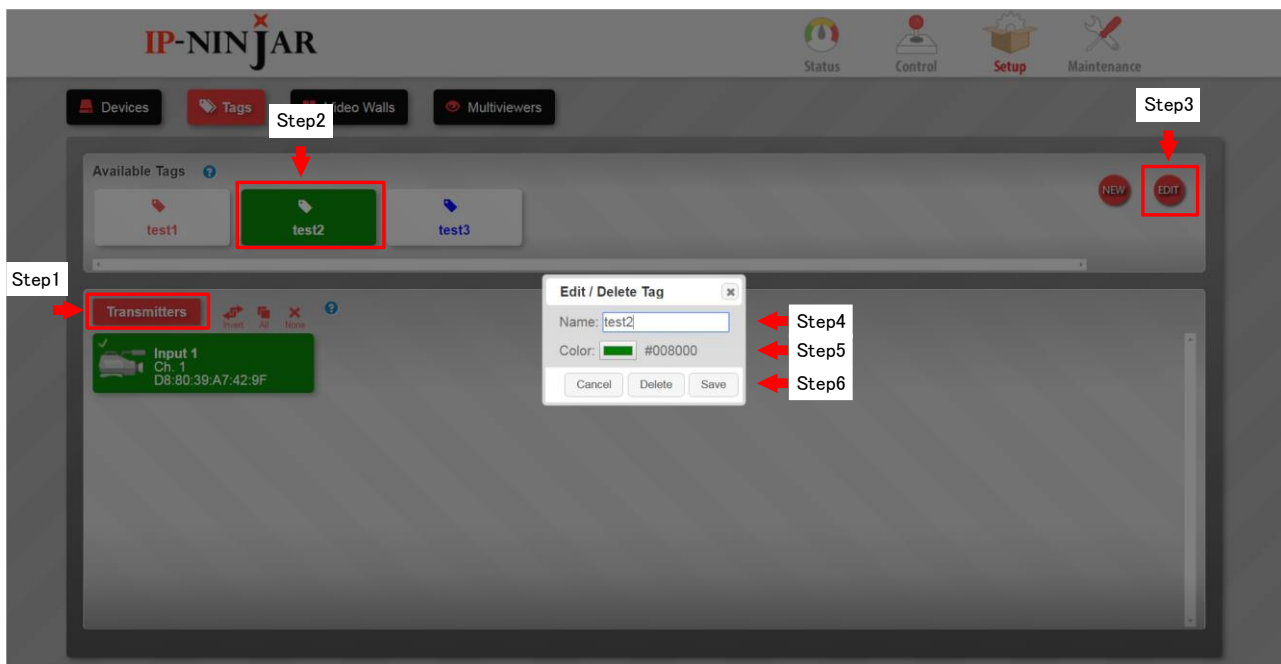
[Figure 10.12] Window for creating tag

### 10.4.2.2 Tags (Editing tag)

Procedure for editing a tag:

1. Select the transmitter or receiver.
2. Select the Tag you want to edit.
3. Click the “Edit” button.
4. Edit the Tag name.
5. Select the Tag color.
6. Click the “Save” button to save these settings.

To delete a Tag, left click the “Delete” button.



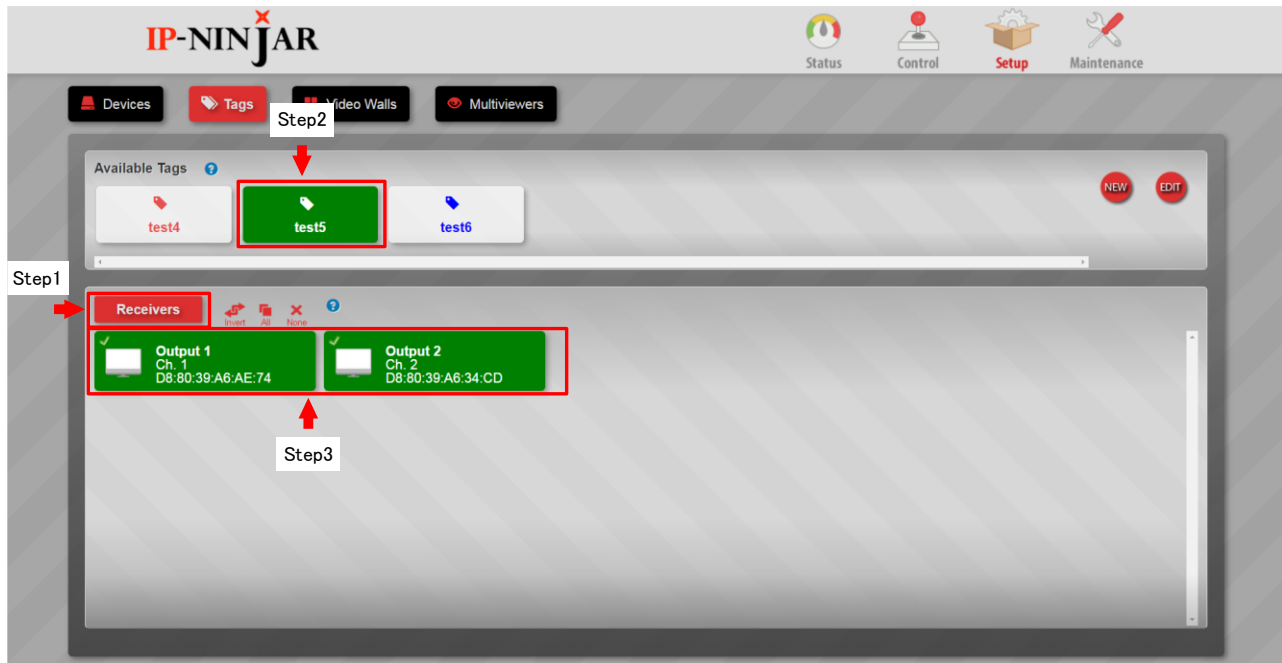
[Figure 10.13] Window for editing Tag

### 10.4.2.3 Tags (Assigning Tag)

Procedure for assigning a Tag to devices:

1. Select the transmitter or receiver.
2. Select the Tag you want to assign.
3. Select the device. If you want to assign multiple Tags, use Invert/All/None buttons to assign them collectively.

Devices have multiple Tags at the same time. You can check the assigned Tags in the detailed status of each device.



[Figure 10.14] Window for assigning Tags

### 10.4.3 Video Walls (Setting videowall)

Sets and saves videowall configuration.

A configured Videowall is added to the “Output (RX) Devices” area of the “Control” tab (“**10.3 Control (Device control)**”), and the configured Videowall will be switched as a receiver.

You can select a layout from four preset patterns and assign receivers to each display area. Video that is output from receivers is synchronized with input video. There may be a gap between upper and lower monitors.



[Figure 10.15] Window for setting Videowall

[Table 10.7] Buttons and portion on Videowall window

Number	Name	Description
①	Videowall Edit	Creates new videowalls, selects existing videowalls, names videowalls, and deletes videowalls.
②	Videowall Patterns	Selects a videowall pattern.
③	Videowall Receiver Layout By Row	Assigns receivers to the selected layout.

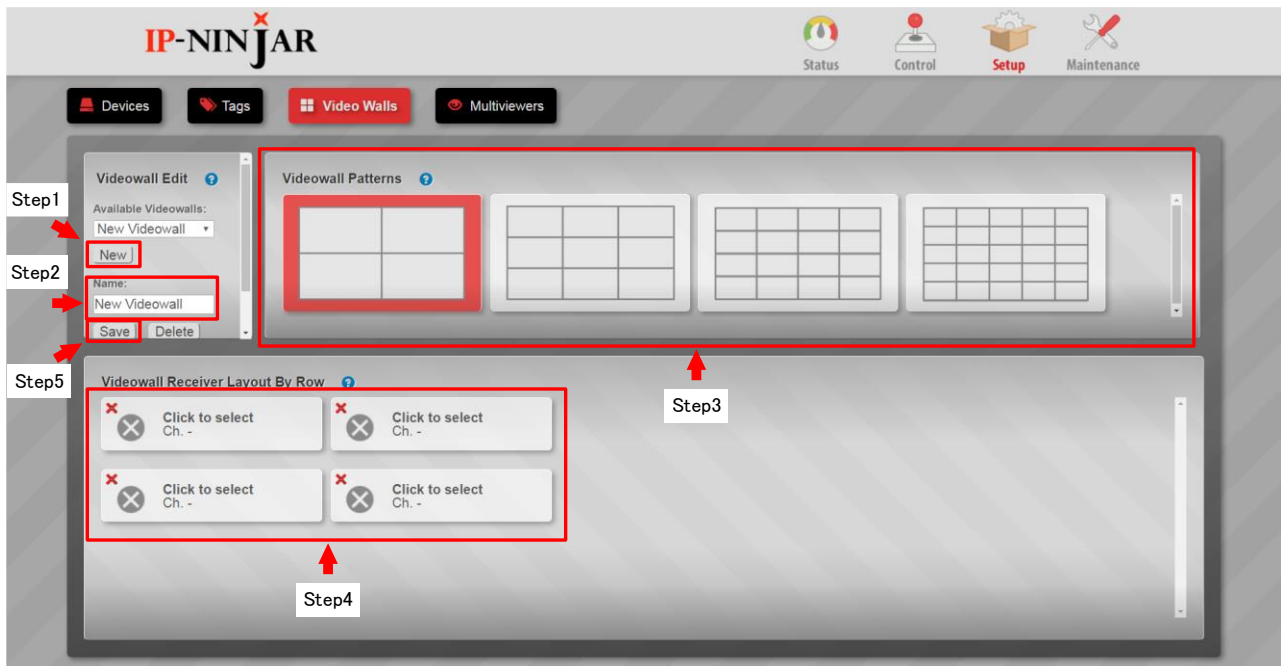


[Figure 10.16] Videowall layout patterns

### 10.4.3.1 Video Walls (Creating new videowall configuration)

Procedure for creating a new videowall configuration:

1. Click the “New” button.
2. Enter the desired name into the “Name” field.
3. Select a layout.
4. Left click the desired cell to open another window. Select the receiver you want to assign.  
Right click the cell (receiver) you want to cancel.
5. Left click the “Save” button to save configurations.  
Saved configurations are added to the Control window and can be switched.



[Figure 10.17] Window for creating new Videowalls

### 10.4.3.2 Video Walls (Editing Videowall configuration)

Procedure for editing videowall:

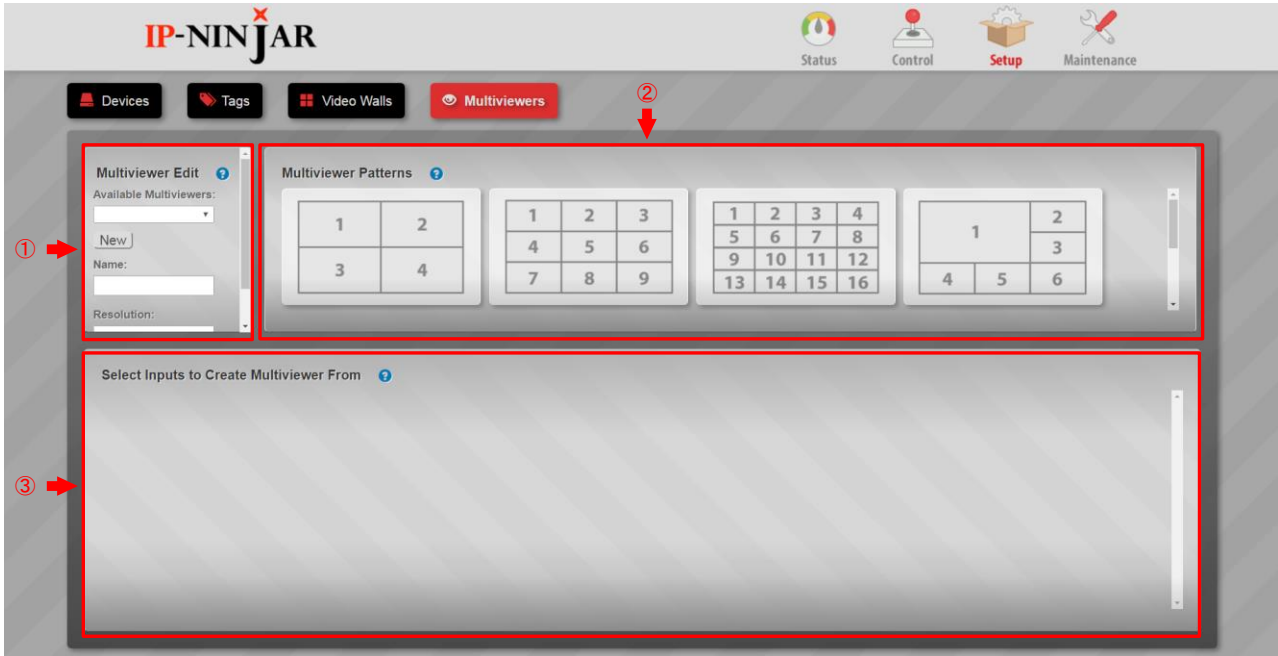
Videowall configuration can be selected from “Available Videowalls”, and the selected videowall configuration can be edited and deleted.

Left click the “Bezel Compensation” button for a window pane effect. Left click the “Save” button to save the setting.

### 10.4.4 Multiviewers (Setting multiview)

Sets and saves Multiview configuration. Saved configurations are added to the Control window and the video can be switched the same as a transmitter.

You can select a layout from eight preset patterns.



[Figure 10.18] Window for setting multiview

[Table 10.8] Buttons and portion on multiview window

Number	Name	Description
①	Multiviewer Edit	Creates a new Multiview configuration, selects an existing Multiview configuration, names and deletes Multiview configuration
②	Multiview Patterns	Selects a Multiview layout from eight patterns.
③	Select Inputs to Create Multiviewer From	Assigns transmitters to the selected layout.



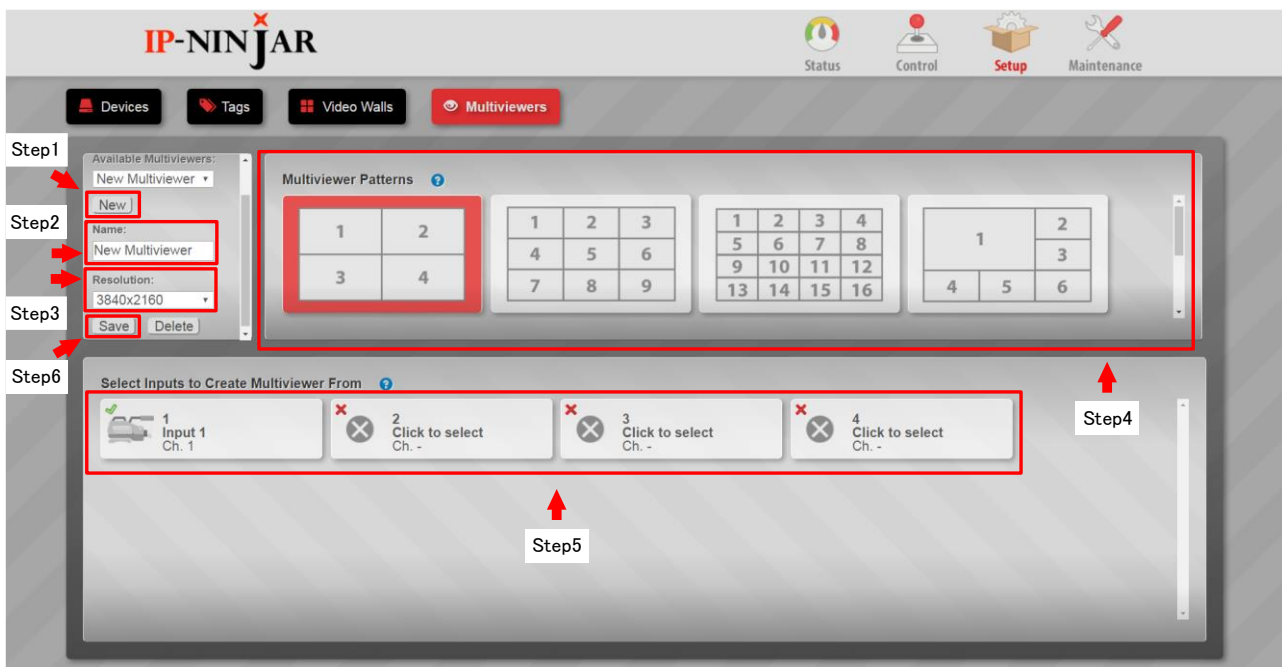
[Figure 10.19] Multiview layout patterns



### 10.4.4.1 Multiviewers (Creating new Multiview configuration)

Procedure for creating a new Multiview configuration:

1. Click the “New” button.
2. Enter the desired name into the “Name” field.
3. Select a desired resolution that is output from receivers.
4. Select a layout.
5. Left click the desired cell to open another window. Select the receiver you want to assign.  
Right click the cell (transmitter) you want to cancel.
6. Left click the “Save” button to save configurations.  
Saved configurations are added to the Control window and can be switched.



[Figure 10.20] Window for creating multiview

### 10.4.4.2 Multiviewers (Editing Multiview configuration)

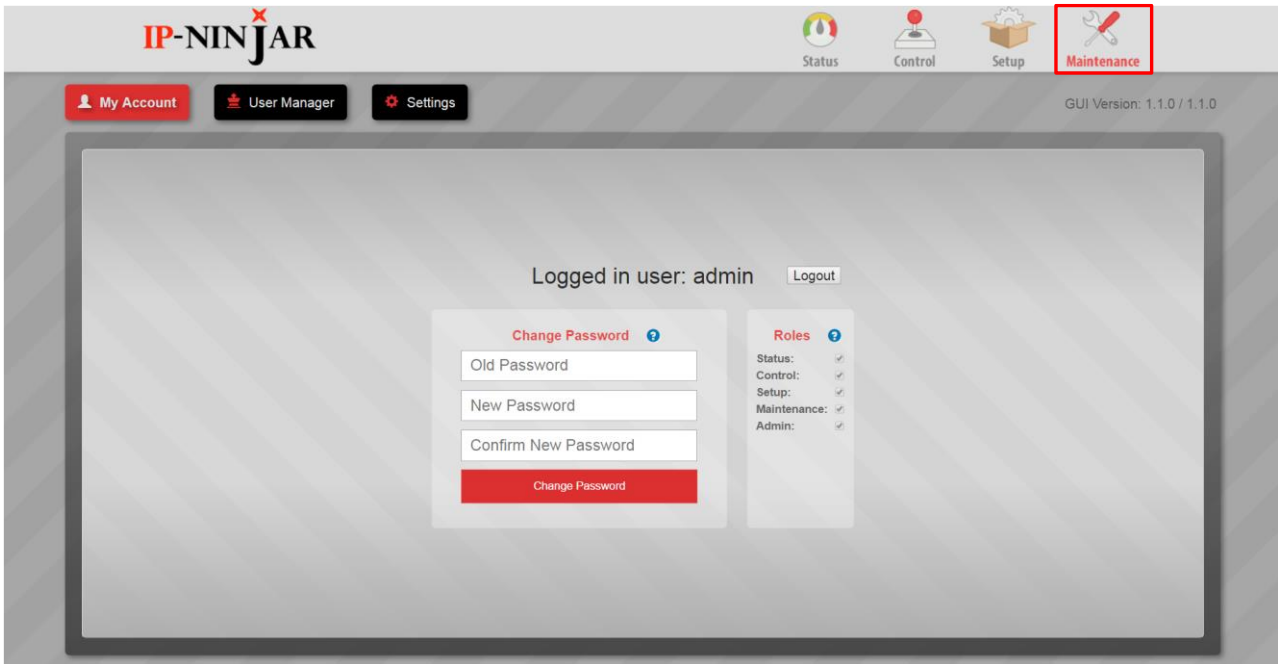
Procedure for editing a Multiview configuration:

Multiview configuration can be selected from “Available Videowalls”, and the selected videowall configuration can be edited and deleted.

Left click the “Save” button to save the setting.

## 10.5 Maintenance

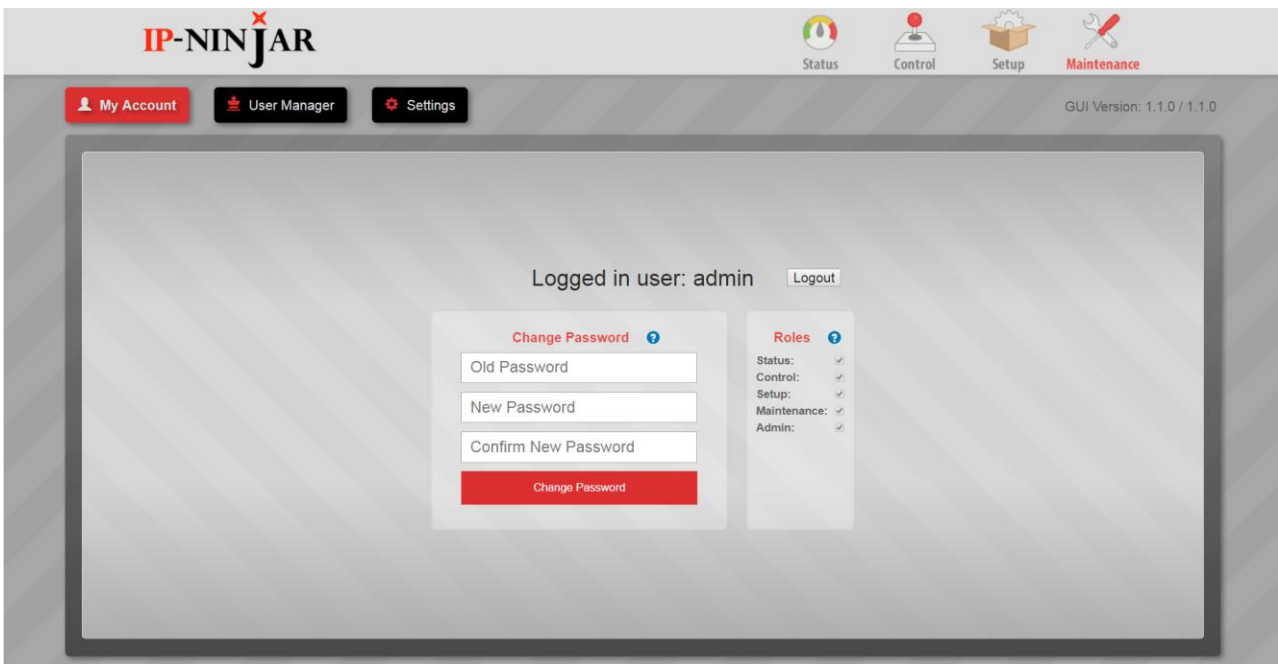
Logs out, adding administrators, changes password, the NJR-CTB's IP address and SSL.



[Figure 10.21] Maintenance window

### 10.5.1 Maintenance (My Account)

Changes password and logs out.

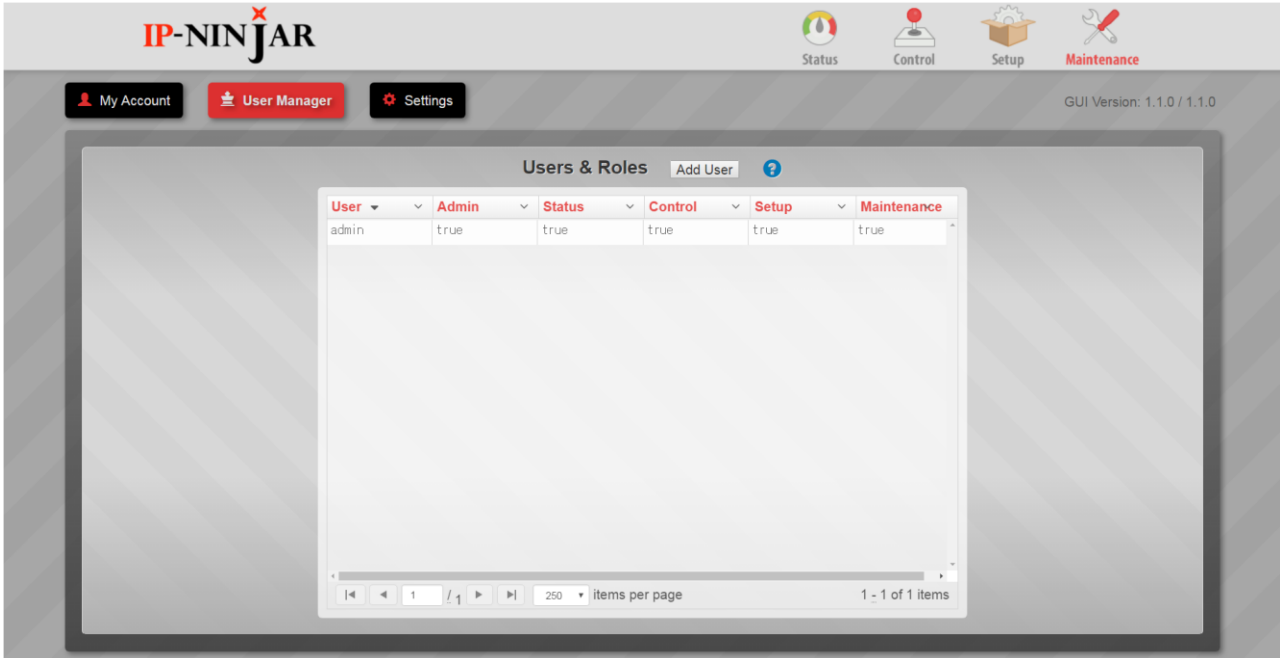


[Figure 10.22] My Account window

## 10.5.2 Maintenance (User Manager)

Adds and changes users. Left click the “Add User” button to add a user. Enter the desired User name and Password, and then select roles. Left click the “Save” button to save the settings.

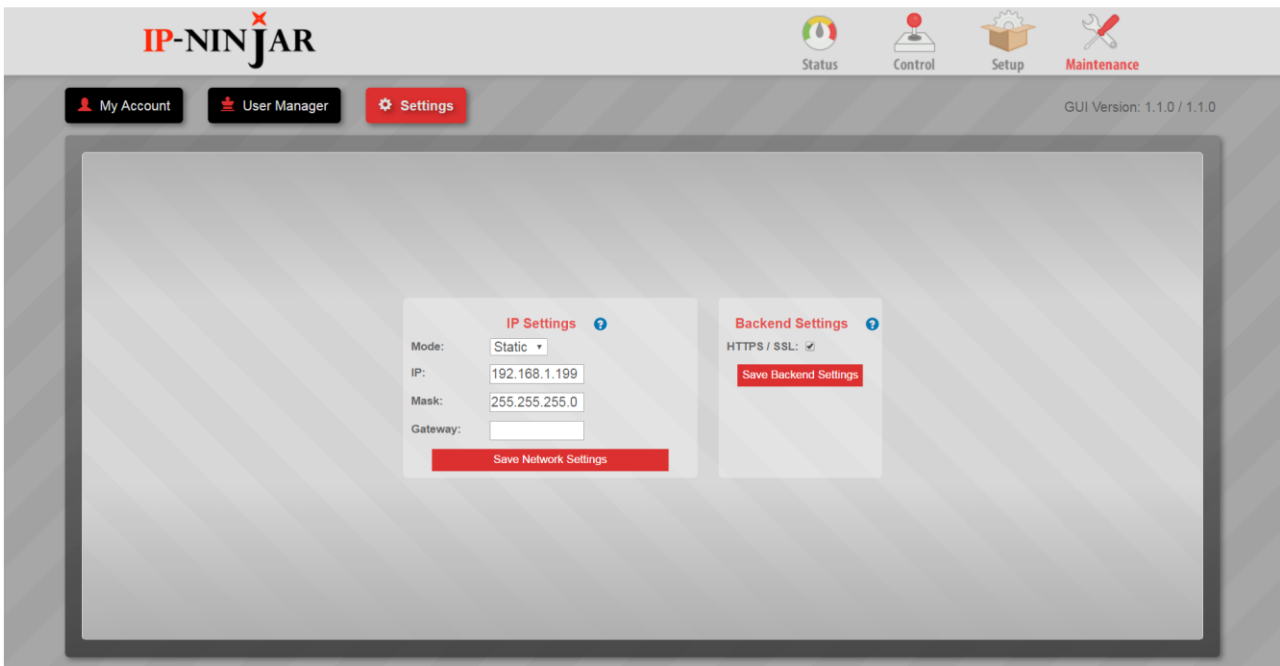
In order to change user settings, select the user.



[Figure 10.23] User Manager window

### 10.5.3 Maintenance (Settings)

Changes IP address and SSL of NJR-CTB's MAINTENANCE port.



[Figure 10.24] Maintenance window

# 11 Product specification

Item	Description	
IP-NINJAR management	Number of units	Up to 512 units
	Number of channels	Input: 4096 (including multiview), Output: 4096 (including videowall)
Display management capability	Videowall	10 pre-configured layout patterns
	Multiview	11 pre-configured layout patterns
Network	Protocol	TCP/IP, UDP/IP, HTTP, HTTPS, ICMP, DHCP, IGMP
	Connection	Up to 8 connections
Control	LAN	2 ports/RJ-45 10Base-T/100Base-TX/1000Base-T (Auto Negotiation), Auto MDI/MDI-X
	RS-232C	1 port/captive screw (3-pin), full duplex, up to 115.2 kbps
Maintenance	HDMI	2 outputs/female HDMI Type A (19-pin)
	USB	4 ports/2 female USB 3.0 Type-A, 2 female USB 3.0 Type-C
General	AC adapter	Input : 100 - 240 VAC±10%, 50 Hz/60 Hz±3 Hz Output : DC 12 V 3 A 36.0 W (A dedicated AC adapter is provided)
	Power consumption	About 18 W
	Dimensions	8.3 (W) × 1.7 (H) × 5.9 (D)" (210 (W) × 42 (H) × 150 (D) mm) (Excluding connectors and the like)
	Weight	2.4 lbs. (1.1 kg)
	Temperature	Operating : 32°F to 104°F (0°C to +40°C) Storage : -4°F to +140°F (-20°C to +60°C)
	Humidity	Operating/Storage: 20% to 90% (Non Condensing)

## 12 Troubleshooting

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This chapter recommends what to do if you have problems operating the NJR-CTB. Refer to manuals of connected devices as well, since they may possibly be the cause of the problem.

In case the NJR-CTB does not work correctly, please check the following items first.

- Are the NJR-CTB and all devices plugged in and powered on normally?
- Are cables connected correctly?
- Are there no loose connections?
- Are appropriate cables supported by devices being used?
- Are specifications of connected devices matched to each other?
- Are there any close objects that may cause noise?

If additional assistance is required, please perform the following tests and then contact us.

1. The problem occurs at all connectors?
2. Connect the devices using genuine cables without connecting the NJR-CTB. The problem still cannot be solved?

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## User Guide of NJR-CTB

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