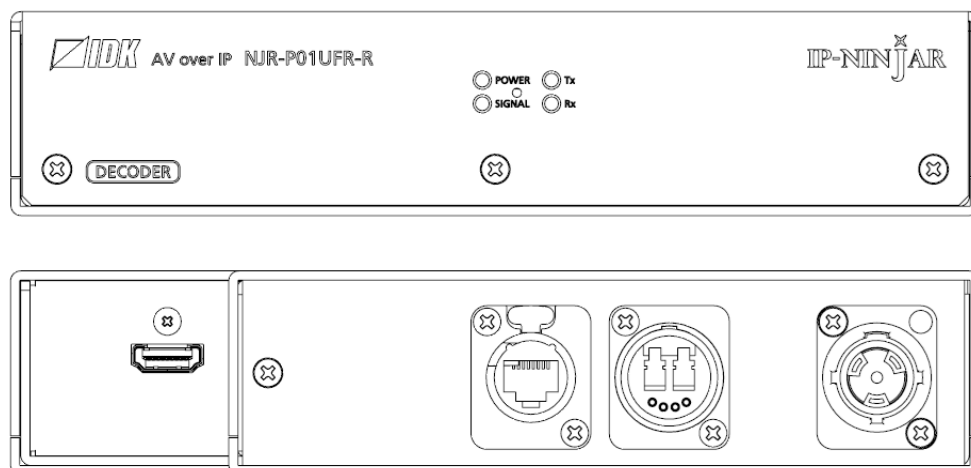


HDMI Decoder

NJR-P01UFR-R

<User Guide>

Ver.1.1.0



- 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

- Blu-ray Disc and Blu-ray are trademarks of Blu-ray Disc Association.
- 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.
- etherCON, opticalCON, and powerCON are registered trademarks of Neutrik AG.
- Connection Reset and IP-NINJAR are registered trademarks of IDK Corporation in Japan.
- All other company and product names mentioned in this manual are either registered trademarks or trademarks of their respective owners. In this manual, the “®” or “™” marks may not be specified.

Before reading this manual

- All rights reserved.
- Some information contained in this user guide such as exact product appearance, diagrams, 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

The reference manual consists of the following two volumes:

- User guide (this document)
- Command guide: Please download the command guide from the website above.

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: AV over IP

Model Name: NJR-P01UFR-R

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>	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.
	<h2>Caution</h2>	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.


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"> ● Lifting must be done by two or more personnel. <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"> ● Do not place the product in unstable place. <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"> ● Secure the product if installing in the locations with vibration. <p>Vibration may move or tip over the product unexpectedly, resulting in injury.</p>
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Warning

 Instruction	<ul style="list-style-type: none"> ● Installation work must be performed by professionals. 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. ● Insert the power plug into an outlet that is unobstructed. 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. ● Insert the power plug into an appropriate outlet completely. 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. ● Unplug the product from an AC power source during installation or service. When connecting peripheral devices to this product, unplug all involved devices from outlets. Ground potential differences may cause fire or other difficulties. ● The product must be electrically earthed/grounded. To reduce the risk of electric shock, ensure the product is connected to a mains socket outlet with a protective earthing connection. ● For PoE/PoH, use category cables meeting IEEE802.3af/at. Otherwise, it may cause problems or a fire.
---	--

For operating products:




 Prohibited	<ul style="list-style-type: none"> ● Keep out any foreign objects. 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. ● For power cable/plug and Category cable, <ul style="list-style-type: none"> • Do not scratch, heat, or modify, including splicing or lengthening them. • Do not pull, place heavy objects on them, or pinch them. • Do not bend, twist, tie or clamp them together forcefully. <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>
 Do not disassemble	<ul style="list-style-type: none"> ● Do not repair, modify or disassemble. 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.
 Do not touch	<ul style="list-style-type: none"> ● Do not touch the product and connected cables during electric storms. Contact may cause electric shock.
 Instruction	<ul style="list-style-type: none"> ● Clean the power plug regularly. If the plug is covered in dust, it may increase the risk of fire.

If the following problem occurs:

 Unplug	<ul style="list-style-type: none"> ● Unplug immediately if the product smokes, makes unusual noise, or produces a burning odor. ● Unplug immediately if the product is damaged by falling or having been dropped. ● Unplug immediately if water or other objects are directed inside. <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:

 <p>Prohibited</p>	<ul style="list-style-type: none"> ● Do not place the product in a location where it will be subjected to high temperatures. 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. ● Do not store or operate the product in dusty, oil smoke filled, or humid place. Placing the product in such environment may increase the risk of fire or electric shock. ● Do not block the vent holes. If ventilation slots are blocked, it may cause the product to overheat, affecting performance and reliability and may increase the risk of fire. ● Do not place or stack heavy items on the product. 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. ● Do not exceed ratings of outlet and wiring devices. Exceeding the rating of an outlet may increase the risk of fire and electric shock.
 <p>No wet hands</p>	<ul style="list-style-type: none"> ● Do not handle power plug with wet hands. Failure to observe this precaution may increase the risk of electric shock.
 <p>Instruction</p>	<ul style="list-style-type: none"> ● Use and store the product within the specified temperature/humidity range. If the product is used outside the specified range of temperature and humidity continuously, it may increase the risk of fire or electric shock. ● Do not place the product at elevations of 1.24 mi. (2,000 m) or higher above sea level. Failure to do so may shorten the life of the internal parts and result in malfunctions. ● When mounting the product into the rack, provide sufficient cooling space. 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. ● Never insert screws without the rubber feet into the threaded holes on the bottom of the product. 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.

For operating products:





 <p>Hot surfaces Caution</p>	<p>For products with the hot surfaces caution label only:</p> <ul style="list-style-type: none"> ● Do not touch the product's hot surface. <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>Prohibited</p>	<ul style="list-style-type: none"> ● Use only the supplied power cable and AC adapter. ● Do not use the supplied power cable and AC adapter with other products. <p>If non-compliant adapter or power cables are used, it may increase the risk of fire or electric shock.</p>
 <p>Unplug</p>	<ul style="list-style-type: none"> ● If the product won't be used for an extended period of time, unplug it. <p>Failure to observe this precaution may increase the risk of fire.</p> <ul style="list-style-type: none"> ● Unplug the product before cleaning. <p>To prevent electric shock.</p>
 <p>Instruction</p>	<ul style="list-style-type: none"> ● Do not prevent heat release. <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"> ● Keep vents clear of dust. <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 user guide explains how to use the NJR-P01UFR-R (hereafter referred to as “NJR-P”) and about external control through the IP-NINJAR Configurator and NJR-CTB. The NJR-P01UFR-R is a decoder. If other IP-NINJAR series products are connected, refer to each user guide.

■ Model

Model	Model number
Multimode fiber	NJR-P01UFR-R-MM
Singlemode fiber	NJR-P01UFR-R-SM

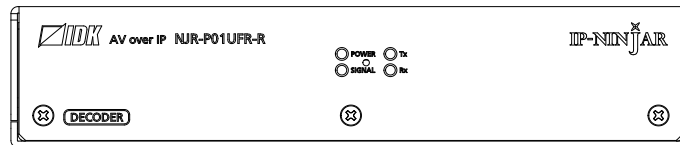
2 Included Items

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

Since the power cord is not included, use the power cord meeting the conditions below:

Connector: Neutrik’s “NAC3FX-W-TOP”

Cable and AC plug complying with the safety standard of your country



One (1) NJR-P01UFR-R

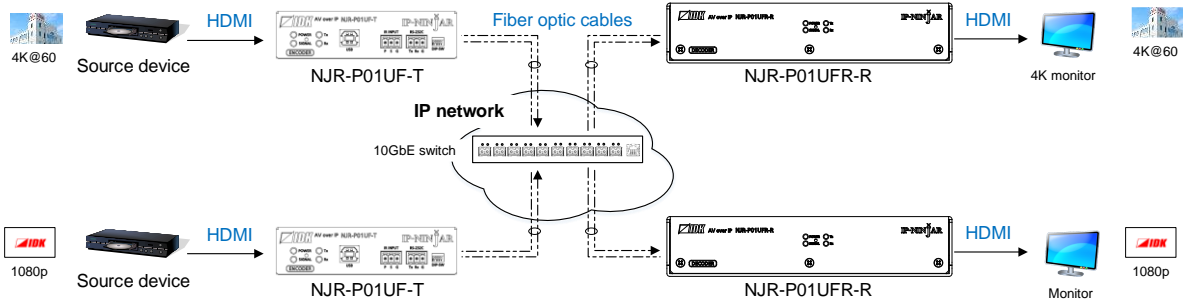
[Fig. 2.1] Included items

3 Product Outline

The NJR-P is an AV over IP decoder for long-haul HDMI signal transmission over fiber optic cables. HDMI video signals can be transmitted at resolutions up to 4K@60 (4:4:4) and supports HDCP 2.2 encryption. LAN transmission is also supported.

The decoder incorporates robust Neutrik connectors and a ruggedized chassis to accommodate event/staging market needs.

The NJR-P can be combined with other IP-NINJAR series products to create a versatile 10GbE AV over IP eco-system or used with a single IP-NINJAR encoder for point-to-point video extension.



[Fig. 3.1] HDMI signals transmission

Note:

Use the NJR-P with other IP-NINJAR series products.
The NJR-P cannot be combined with IDK’s OPF or FDX series products.

4 Features

■ Video

- Up to 4K@60 (4:4:4)
- HDCP 1.4/2.2
- HDR
- Transmission distances
 - Multimode fiber (OM3) : Up to 984 ft. (300 m)
 - Singlemode fiber (OS1) : Up to 6.21 mi. (10 km) (Up to 24.85 mi. (40 km, optional))

■ Communication

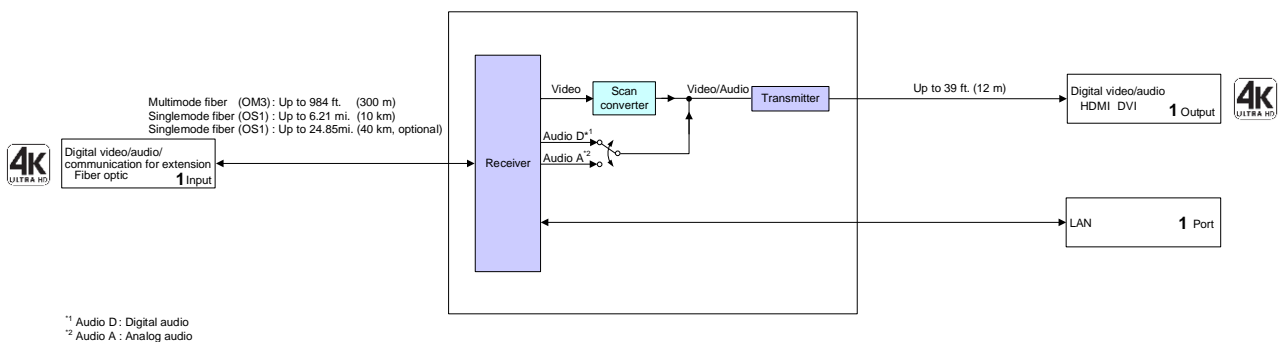
- LAN

■ Network

- 10 Gb switch allows; extension, distribution, matrix switching, videowall, and multiview
- Controllable through network using NJR-CTB
- IP-NINJAR encoders and decoders can easily be added and replaced

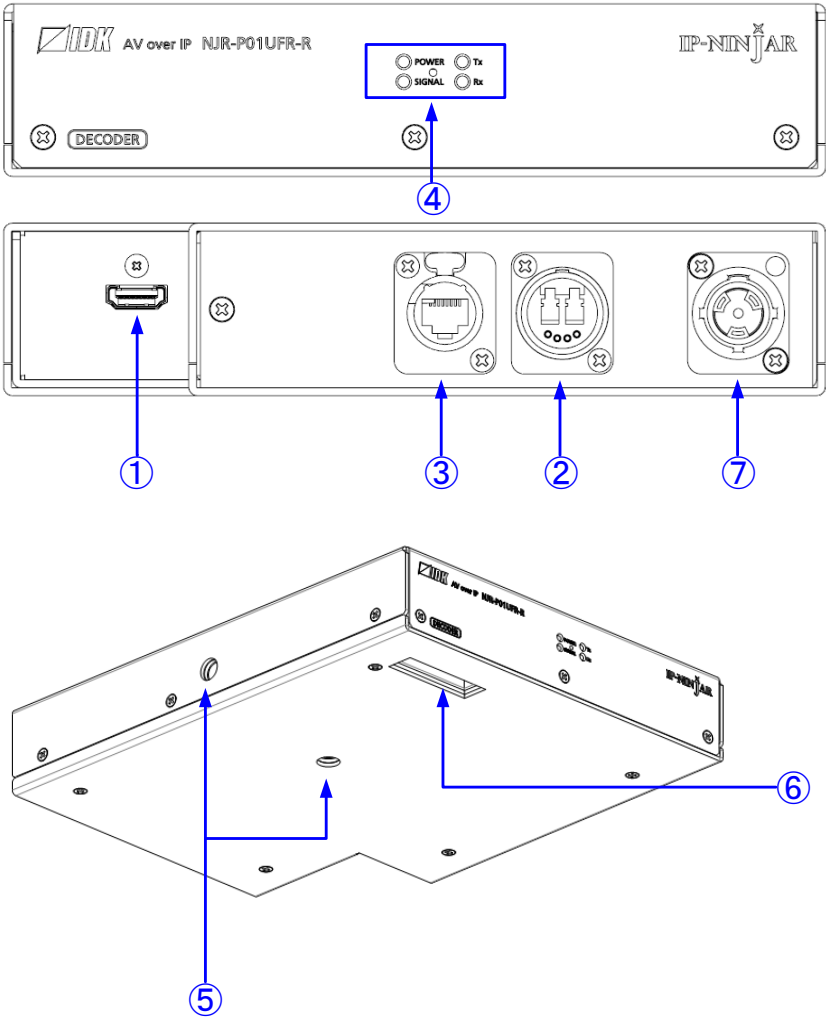
■ Others

- DDC buffer
- Connection Reset
- Neutrik’s robust connector with locking mechanism and rugged and lightweight chassis
- Fanless (No fan noise)



[Fig. 4.1] Diagram

5 Panels



[Fig. 5.1] Drawing

[Table 5.1] Features

[1/2]

#	Feature	Description
①	HDMI output connector	Output connector for HDMI signals Connects to a sink device, such as an LCD monitor.
②	I/O connector for extension	Neutrik’s opticalCON DUO series I/O connector of optical signal A fiber optic cable is used; connects to an IP-NINJAR fiber model encoder or 10GbE switch
③	LAN connector	Neutrik’s etherCON type LAN connector

#	Feature	Description
④	LEDs (green)	<p>POWER : Illuminates when power is ON</p> <p>SIGNAL : Illuminates when video signals are valid; blinks when video signals cannot be transmitted correctly</p> <p>TX : Blinks when a valid code is being sent to an IP-NINJAR encoder or 10GbE switch</p> <p>RX : Blinks when a valid code is being received from an IP-NINJAR encoder or 10GbE switch</p>
⑤	Fixing hole	<p>M10-size hole for fixing the NJR-P</p> <p>Up to 1.2 in. (30 mm) bolt can be used</p>
⑥	Security slot	Keeps the NJR-P from any risk of falling over
⑦	Power supply connector	<p>Neutrik's powerCON connector</p> <p>Connects to AC adapter</p>

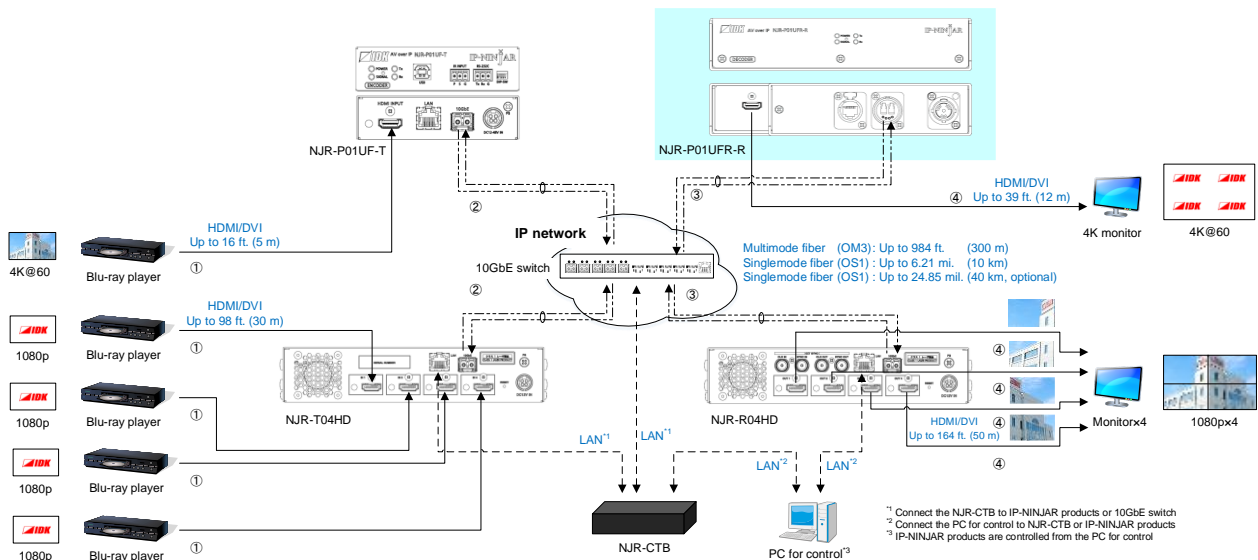
6 System Configuration Example

This chapter cites two system configuration examples.

6.1 Used as Network Extender

Using the NJR-P and other IP-NINJAR encoders/decoders with a 10GbE switch enables extending, distributing, matrix switching, videowall, and multiview.

- ① Video and audio signals are input from the Blu-ray player to the HDMI input connector of NJR-P01UF-T/ NJR-T04HD.
- ② NJR-P01UF-T/NJR-T04HD outputs these signals over a fiber optic cable.
- ③ 10GbE switch sends video and audio signals to the NJR-P01UFR-R/NJR-R04HD according to the setting of NJR-CTB.
- ④ NJR-P01UFR-R/NJR-R04HD outputs received video and audio signals from the HDMI output connector to the monitor.



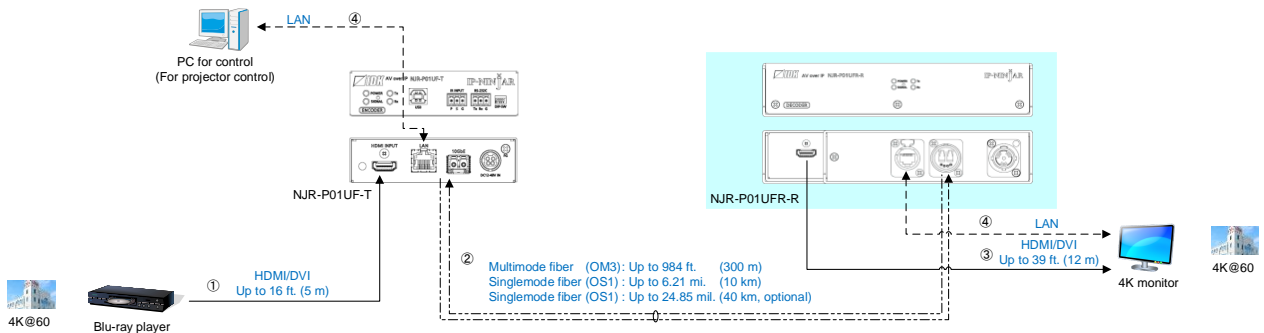
[Fig. 6.1] Used as Network extender

6.2 Used as Extender

The NJR-P and other IP-NINJAR encoders are connected as point-to-point.

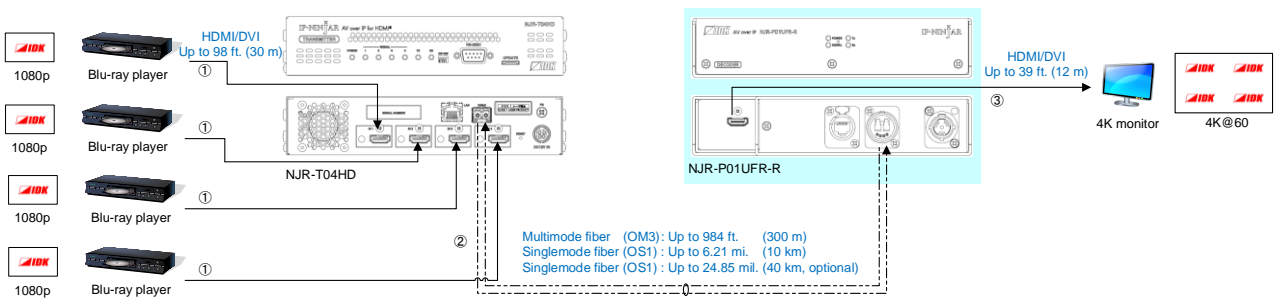
- ① Video and audio signals are input from the Blu-ray player to the HDMI input connector of NJR-P01UF-T/ NJR-T04HD.
- ② NJR-P01UF-T/NJR-T04HD outputs these signals to NJR-P01UFR-R over a fiber optic cable.
- ③ NJR-P01UFR-R outputs received video and audio signals from the HDMI output connector to the monitor.
- ④ NJR-P01UF-T/NJR-T04HD/NJR-P01UFR-R enables LAN communication for peripheral device control (such as projectors).

Using NJR-P01UF-T and NJR-P01UFR-R



[Fig. 6.2] NJR-P01UF-T and NJR-P01UFR-R

Multiview using NJR-T04HD and NJR-P01UFR-R



[Fig. 6.3] NJR-T04HD and NJR-P01UFR-R: Multiview

7 Precautions

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

7.1 Installation

When installing the NJR-P, please observe the following precautions; otherwise, the internal temperature increases and it may affect the product lifetime and operation.

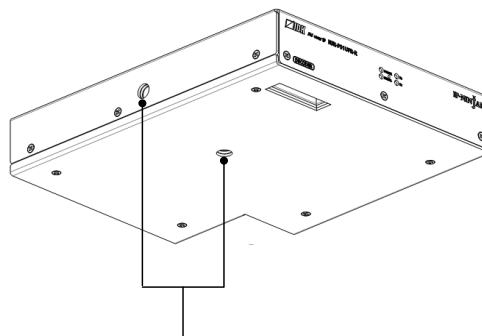
- Do not stack or place one NJR-P directly on top of another NJR-P.
- Do not block vent holes.
- To provide adequate ventilation, maintain sufficient clearances around the NJR-P (1.2 in. (30 mm) or more).
- Consider installing the NJR-P in an environment compatible with the maximum temperature indicated in the specification sheet 32°F to 104°F (0°C to +40°C).

Tip:

For installing the NJR-P in an EIA rack, we offer optional rack mounting hardware. Please contact us as needed.

■ **Attaching truss bracket and the like (e.g. For event/staging)**

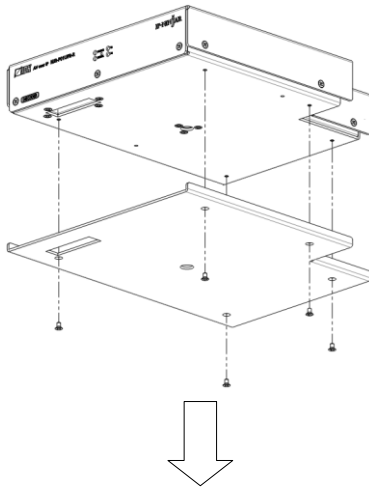
Attach a truss bracket. Please prepare the truss bracket and its bolts (Not included in the NJR-P).



Fixing hole
(M10 screws, Up to 1.2 in. (30 mm) from the surface)

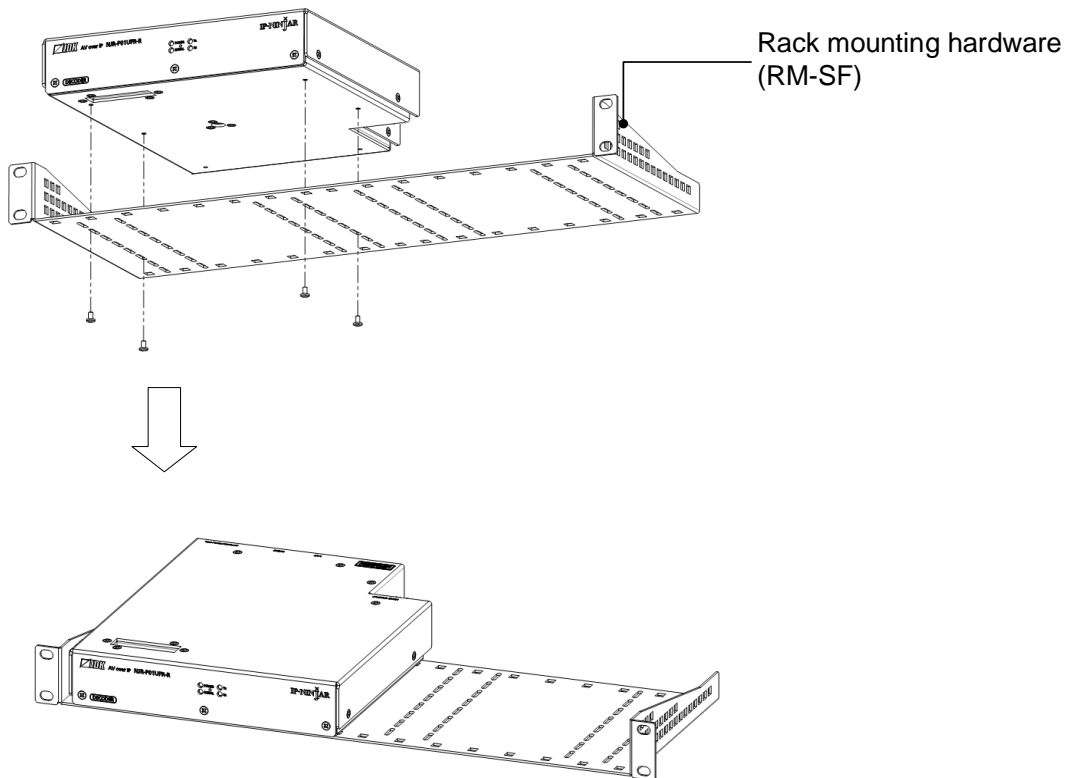
[Fig. 7.1] Removing original bolts

■ Attaching rack mounting hardware (RM-SF)



1. Remove the bottom plate by unscrewing five (5) original screws from the bottom plate of the NJR-P.

2. Mount the NJR-P on the rack shelf and secure the device using the provided screws.
The appropriate screw tightening torque: 0.59 N·m (6.1 kgf·cm, approx.)



[Fig. 7.2] Attaching RM-SF

7.2 Cabling

When connecting the NJR-P to external devices, please observe the following precautions.

- Read manuals for the external devices.
- Before connecting cables to the NJR-P or an external device, dissipate static electricity by touching grounded metal such as equipment racks before handling signal cables. Failure to observe this precaution may result in ESD (electrostatic discharge) damage.
- Power all units off before connecting cables.
- Be sure to fully seat all plugs and connections and dress cables to reduce stress on connectors.

7.2.1 HDMI cable

When the video is 4K format, the maximum TMDS data rate (transmission speed) is 18 Gbps. If a high-speed HDMI cable is used, the maximum TMDS data rate of 10.2 Gbps can be transferred, and the video cannot be displayed stably.

Please select an 18 Gbps high-speed cable depending on the 4K format. The maximum transmission distance depends on the cable type, source and sink devices. You are recommended to use high quality cables.

[Table 7.1] 18 Gbps high-speed cable for 4K format

	TMDS data rate (Gbps)								
	RGB, YCbCr 4:4:4			YCbCr 4:2:2			YCbCr 4:2:0		
4K format	24 bit	30 bit	36 bit	24 bit	30 bit	36 bit	24 bit	30 bit	36 bit
3840x2160 (24/25/30)	10.2 Gbps	18 Gbps	18 Gbps	10.2 Gbps	10.2 Gbps	10.2 Gbps	—	—	—
4096x2160 (24/25/30)	10.2 Gbps	18 Gbps	18 Gbps	10.2 Gbps	10.2 Gbps	10.2 Gbps	—	—	—
3840x2160 (50/59.94/60)	18 Gbps	—	—	18 Gbps	18 Gbps	18 Gbps	10.2 Gbps	18 Gbps	18 Gbps
4096x2160 (50/59.94/60)	18 Gbps	—	—	18 Gbps	18 Gbps	18 Gbps	10.2 Gbps	18 Gbps	18 Gbps

18 Gbps: 18 Gbps high-speed cable, 10.2 Gbps: 10.2 Gbps transmission cable, —:N/A

Note:

If a cable joint (JJ) or the like is used to extend the distance, the video may not be displayed correctly.

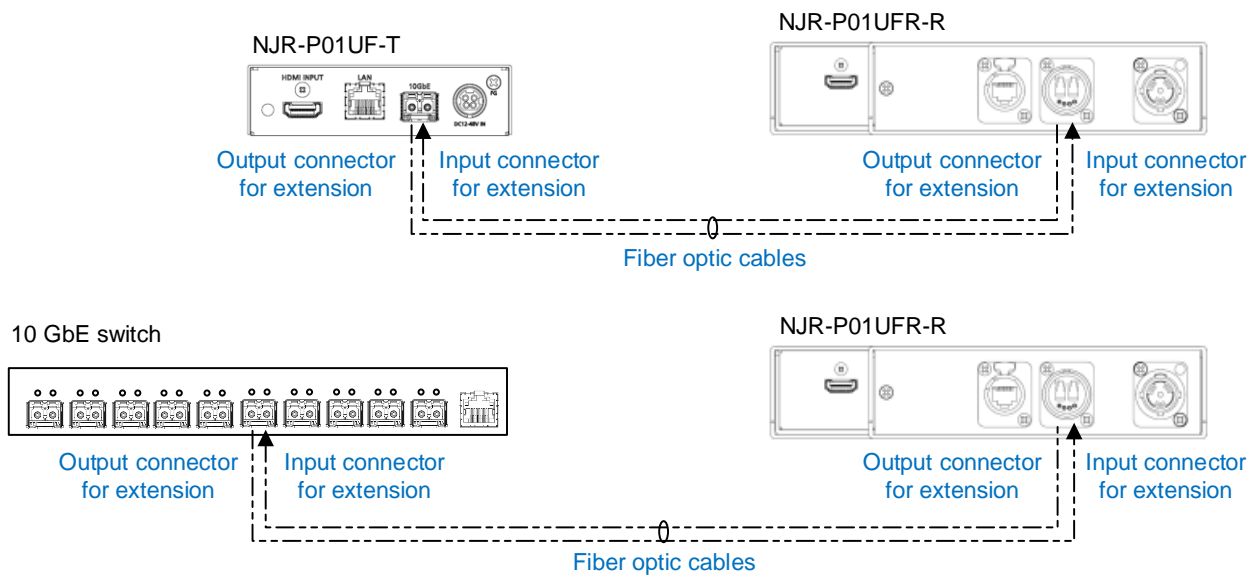
7.2.2 Fiber optic cable for extension

The NJR-P can reach their full potential by selecting appropriate fiber optic cables for long-haul extension and installing the cable correctly.

Connect the output connector of this device to the input connector of the target device.

Connect the input connector of this device to the output connector of the target device.

The target device should be an IP-NINJAR fiber model encoder or 10GbE switch.



[Fig. 7.3] Connecting fiber optic cable

Note:

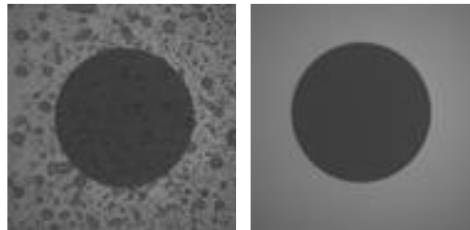
For the connectors of 10GbE switch, refer to the switch's manual.

- To polish connectors:
 For SFP+ optical transceiver for multimode : PC polishing is recommended.
 For SFP+ optical transceiver for singlemode : UPC polishing is recommended.
Note: APC polishing is not supported.
- Transmission distance varies depending on attenuation of the fiber, connector and other contact portions.
- Make sure not to exceed the allowable tension and bend radius of fiber optic cable or the performance of the product and the life of the fiber optic cable may be affected.
- Plug the dust caps to both faces of the fiber optic cable when connecting the fiber optic cable and when not in use.
- Before inserting a fiber optic cable, make sure there is no damage or dirt on the end-face of the optical connector. Clean up it or NJR-P may not operate correctly.



Left : without dust cap
 Right : with dust cap

[Fig. 7.4] Dust caps



Before cleaning After cleaning

[Fig. 7.5] Cleaning connector

7.2.3 Optical signal

The fiber type and transmission distance vary depending on the optical signal.

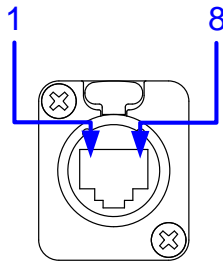
[Table 7.2] Specification of optical signal

Item	NJR-P01UFR-R-MM	NJR-P01UFR-R-SM	NJR-P01UFR-R-SM40 (Optional)
Fiber	Multimode fiber	Singlemode fiber	Singlemode fiber
Wave length	850 nm (VCSEL laser)	1310 nm (DFB laser)	1550 nm (EML laser)
Laser safety	Class 1 (JIS C 6802, IEC60825-1)		
Max. transmission distances	OM3: 984 ft. (300 m)	OS1: 6.21 mi. (10 km)	OS1: 24.85 mi. (40 km)
Receiver sensitivity (OMA) @10.3Gbps	-11.1 dBm or higher	-12.6 dBm or higher	-16 dBm or higher
Average Launch Power	-5 dBm to -1 dBm	-8.2 dBm to +0.5 dBm	-1 dBm to +2 dBm
Max. input power	+0.5 dBm	+0.5 dBm	-1 dBm
Connector	LC (Duplex)		

7.2.4 Connecting LAN cable

Pin assignment of the LAN connector is as follows.

Auto MDI/MDI-X that detecting and switching straight cable/cross cable is supported.



Pin no.	Signal name			
	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. (Not connected)*	TRX+ (Transmitted & Received data +)	N.C. (Not connected)*
5	TRX- (Transmitted & Received data -)	N.C. (Not connected)*	TRX- (Transmitted & Received data -)	N.C. (Not connected)*
6	TRX- (Transmitted & Received data -)	RX- (Received data -)	TRX- (Transmitted & Received data -)	TX- (Transmitted data -)
7	TRX+ (Transmitted & Received data +)	N.C. (Not connected)*	TRX+ (Transmitted & Received data +)	N.C. (Not connected)*
8	TRX- (Transmitted & Received data -)	N.C. (Not connected)*	TRX- (Transmitted & Received data -)	N.C. (Not connected)*

*Not used

[Fig. 7.6] LAN connector

Make sure not to form a loop by NJR-P when connecting a LAN cable to NJR-P.

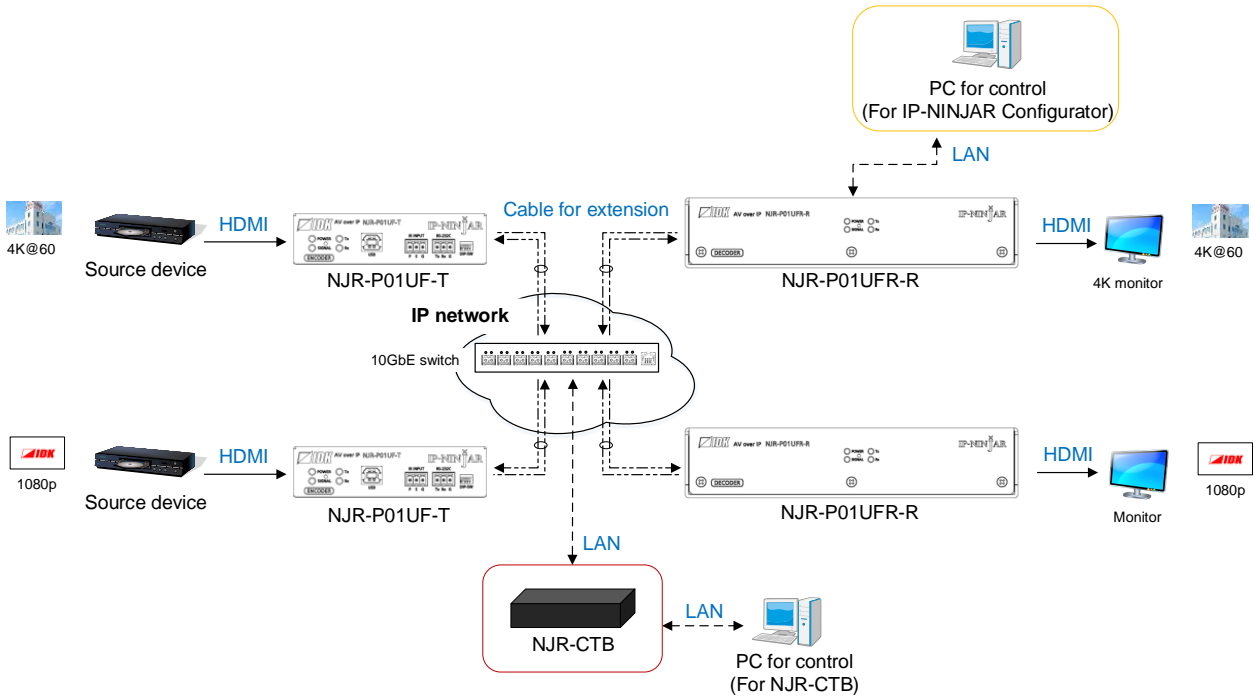
NJR-P constantly send broadcast packet in order to notify status.

If adding the LAN cable to the existing network, avoid problems, such as broadcast storm caused by broadcast traffic.

Broadcast storm: This problem occurs when a network system is overwhelmed by continuous broadcast traffic or the like.

8 Basic Operation

The NJR-P can be set from NJR-CTB or IP-NINJAR Configurator over LAN communication.



[Fig. 8.1] Setting NJR-P

8.1 Controlled by IP-NINJAR Configurator

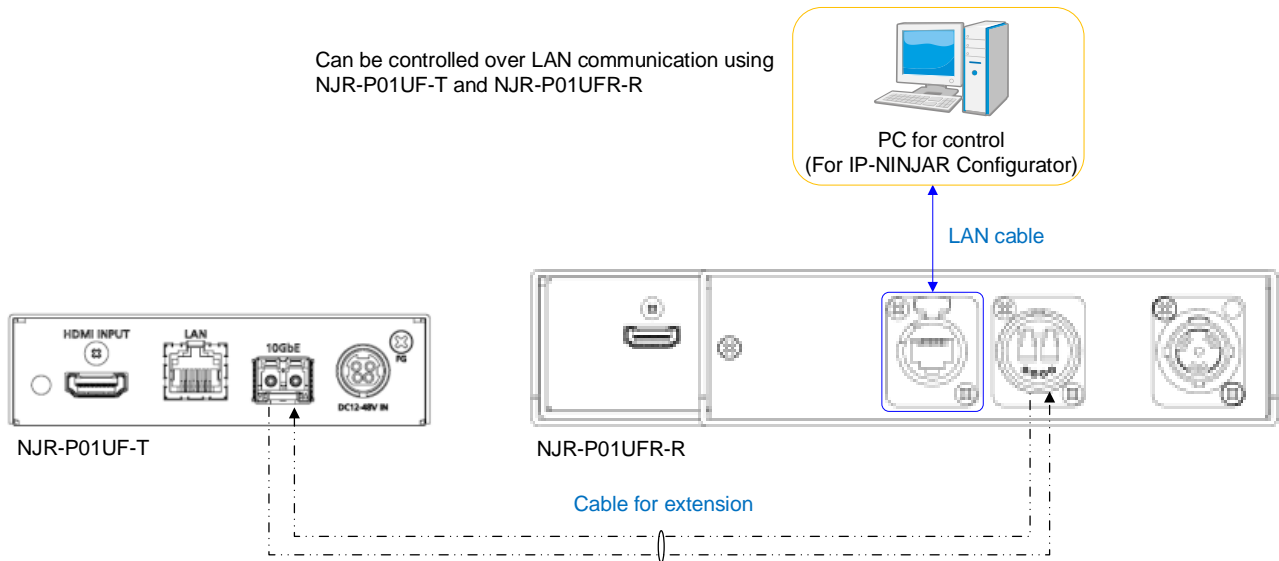
The NJR-P connected to LAN can be set from the IP-NINJAR Configurator remotely over LAN communication.

The following settings can be set from the GUI: selecting output audio, setting LAN, resetting settings, and rebooting NJR-P. For other settings, communication commands can be input from the command line.

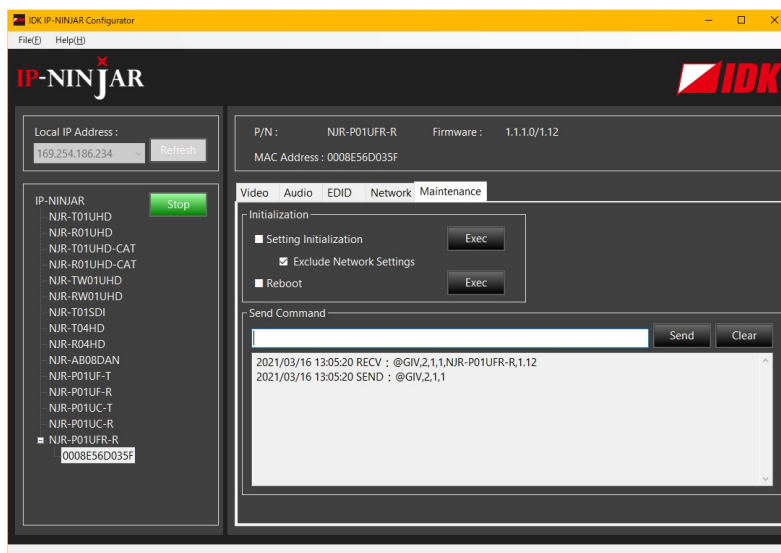
Refer to the IP-NINJAR Configurator user guide for operations from the IP-NINJAR Configurator.

Refer to the command guide for NJR-P for details of communication commands.

Please contact us to download the IP-NINJAR Configurator.



[Fig. 8.2] Control from IP-NINJAR Configurator



[Fig. 8.3] IP-NINJAR Configurator's GUI

8.3 Setting Items

Some setting items can be controlled over commands/GUI operation; the others cannot be controlled.

[Table 8.1] Setting items

Command: Command input, GUI: GUI operation, WEB&C: WEB browser and command input, No: Not supported

Setting item	NJR-P01UFR-R	NJR-CTB	Page
	LAN (IP-NINJAR Configurator)	LAN	
Output mode	Command	WEB&C	29
HDCP output	Command	WEB&C	29
Hot plug ignoring duration	Command	WEB&C	30
Muting digital audio	Command	WEB&C	31
Selecting output audio	GUI	WEB&C	31
LAN	GUI	WEB&C	32
MAC address	GUI	WEB&C	32
Output status	Command	WEB&C	33
Monitor EDID	Command	WEB&C	34
Version	Command	WEB&C	35
Initialization	GUI	WEB&C	27
Reboot	GUI	WEB&C	27
Setting channel information*	No	WEB&C	-
Selecting I/O channel*	No	WEB&C	-
Operating preset memory*	No	WEB&C	-
Videowall*	No	WEB&C	-
NJR-CTB LAN*	No	WEB&C	-

*: In this manual, only settings of NJR-P are explained. Refer to NJR-CTB user guide for the following operations: Using as Network Extender base on 10GbE Switcher, setting channel information, selecting input/output channel, operating preset memory, setting videowall, and setting NJR-CTB LAN.

8.4 Initialization

You can initialize settings to factory defaults using IP-NINJAR Configurator or NJR-CTB over LAN communication.

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

Note:

Once values are initialized, they cannot be restored.

【See: 8.1 Controlled by IP-NINJAR Configurator】

【See: 8.2 Controlled by NJR-CTB】

8.5 Reboot

You can reboot NJR-P using IP-NINJAR Configurator or NJR-CTB over LAN communication.

【See: 8.1 Controlled by IP-NINJAR Configurator】

【See: 8.2 Controlled by NJR-CTB】

9 Setting

The following items of NJR-P can be set using the IP-NINJAR Configurator, or NJR-CTB.

In this manual, only settings of NJR-P are explained. Refer to NJR-CTB user guide for the following operations: Using as Network Extender base on 10GbE Switcher, setting channel information, selecting input/output channel, operating preset memory, setting videowall, and setting NJR-CTB LAN.

[Table 9.1] Setting items

Item	Setting value		Page
	Value	Default	
Output mode	AUTO/DVI/RGB/YCbCr 4:2:2/ YCbCr 4:4:4/YCbCr 4:2:0	AUTO	29
HDCP output	ALWAYS/HDCP INPUT ONLY/ HDCP 2.2	ALWAYS	29
Hot plug ignoring duration	OFF/2 to 15 [sec.]	OFF (Not ignoring request signals)	30
Muting digital audio	Mute OFF/Mute ON	Mute OFF	31
Selecting output audio	Analog input audio/ Digital input audio	Digital input audio	31
LAN	Automatic/Fix	Automatic	32

9.1 Output

9.1.1 Output mode

You can set the color space to be sent to the sink device.

The sink device selects the best color space for the color space of the input video automatically, but if for some reason the sink device cannot select the color space, set the desired color space.

Setting value

- AUTO [Default]
- DVI output
- RGB output
- YCbCr 4:2:2 output
- YCbCr 4:4:4 output
- YCbCr 4:2:0 output

Note:

This setting is enabled when HDMI signal is input.

9.1.2 HDCP output

You can set the HDCP output for when a HDCP-compliant device is connected.

Normally select "ALWAYS" to output HDCP at all times regardless of input signal status.

If you select "HDCP INPUT ONLY", HDCP will be output only if the input signal has HDCP. However, some sink devices fails HDCP authentication when HDCP is switched from OFF to ON; this results in that video and audio may not be output temporarily.

Setting value

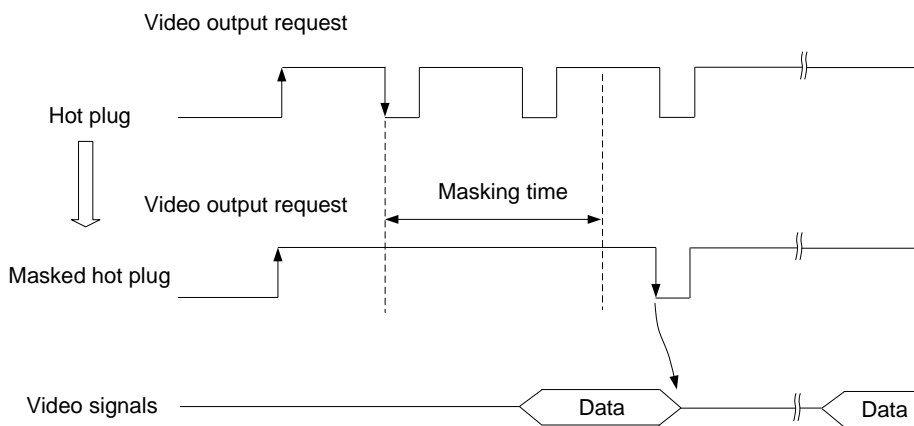
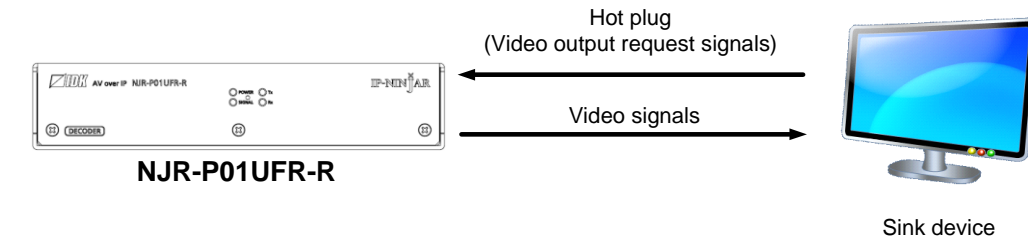
- ALWAYS [Default]
- HDCP INPUT ONLY
- HDCP 2.2

9.1.3 Hot plug ignoring duration

Time for ignoring the video output request signals sent from the sink device.

If the request signals are repeated in a short cycle, the NJR-P processes video output from the first cycle.

As a result, video may not be output. This problem can be solved by setting the ignoring time.



[Fig. 9.1] Hot plug mask

Setting value

OFF (Not ignoring request signals) [Default]

2 to 15 [sec.]

9.2 Audio

9.2.1 Muting digital audio

You can enable or disable the audio output mute.

Output audio from the HDMI output connector is muted.

Setting value

Mute OFF [Default]

Mute ON

9.2.2 Selecting output audio

You can select analog or digital audio that is embedded to output video.

Commands for analog input audio can be used when using the NJR-P with other IP-NINJAR encoders.

Setting value

Analog input audio

Digital input audio [Default]

9.3 LAN

9.3.1 LAN

The IP address can be obtained automatically by DHCP (Dynamic Host Configuration Protocol). Static IP address, subnet mask, and default gateway can also be configured manually.

Setting value

[Table 9.2] LAN setting items

Setting item	Setting value	Default
IP address	0.0.0.0 to 255.255.255.255	Automatic
Subnet mask	0.0.0.0 to 255.255.255.254	
Default gateway	0.0.0.0 to 255.255.255.255	

9.3.2 MAC address

You can display the MAC address.

Information to be displayed

[Table 9.3] MAC address

Item	Example
MAC address	0008E5690000

9.4 Information

9.4.1 Output status

You can display the status of the sink device connected to the HDMI output connector.

Information to be displayed

[Table 9.4] HDCP authentication status

Value	Description
HDCP 1.4 SUPPORT	Authenticated with HDCP 1.4
HDCP 2.2 SUPPORT	Authenticated with HDCP 2.2
HDCP NOT SUPPORT	Not authenticated, because device that does not support HDCP is connected or input signal does not have HDCP.
HDCP ERROR	Device with HDCP is connected, but the authentication failed.
HDCP CHECK NOW	Connection status of sink device was changed, and the status is being checked.
UNCONNECTED	No sink device is connected.

[Table 9.5] Output signal type

Value	Description
Hxx	HDMI signal is output. xx stands for the color depth, 24, 30 or 36.
D	DVI signal is output.
N	No sink device is connected.

HDMI output connector status of video output is displayed and then the status of audio output is displayed.

[Table 9.6] Error code

Value	Video output	Audio output
0	Video is output correctly.	Audio is output correctly.
1	—	“9.2.1 Muting digital audio” is set to “ON”.
2	No source device is connected.	
3	No video signal is input.	No audio signal is input.
4	Video output or audio output of the source device is muted.	
5	Signal with HDCP is input but the sink device does not support HDCP.	
6	The source device does not output the needed information (packets) for outputting video or audio.	
7	Signal that is not supported by NJR-P is input.	Since compressed audio is input, audio cannot be output.
9	—	The sink device that does not support audio is connected.
B	No sink device is connected.	
C	HDCP is being authenticated.	
D	HDCP authentication failed	

9.4.2 Monitor EDID

You can display the EDID of the sink device connected to the HDMI output connector.

Information to be displayed

[Table 9.7] Monitor's EDID

Item	Displayed value	Example	Remarks
Monitor name	—	NJR-P01UF-T	If no monitor is connected, "UNCONNECTED" is displayed and parameter is not displayed any more.
Resolution and pixel clock	—	1920x1080 148.50MHz	—
Supported HDMI	HDMI/DVI	HDMI	If the sink device does not support HDMI, "DVI" is displayed.
Sampling configuration ^{*1}	RGB/YCbCr422/ YCbCr444/YCbCr420	YCbCr444	All supported sampling configurations are displayed. If the sink device resolution is 4K@50/59.94/60 and only up to YCbCr 4:2:0 is supported, "YCbCr420" is displayed.
Color depth ^{*1}	24/30/36 BIT COLOR	24BIT COLOR	All supported color depths are displayed.
Supported audio	LINEAR PCM/ AUDIO NOT SUPPORT	LINEAR PCM	If the sink device is not support audio, "AUDIO NOT SUPPORT" is displayed.
Sampling frequency ^{*2}	32/44.1/48/88.2/96/176.4/ 192 kHz	32/44.1/48kHz	All supported sampling frequencies are displayed.
Bit length ^{*2}	16/20/24 BIT	16/20/24BIT	All supported bit lengths are displayed.
Number of channels ^{*2}	1 to 8 CHANNEL	2CHANNEL	—
Supported compressed audio ^{*2}	COMPRESSED AUDIO SUPPORT	COMPRESSED AUDIO SUPPORT	If only compressed audio is supported, "COMPRESSED AUDIO SUPPORT" is displayed.

^{*1} Displayed only if a sink device supporting HDMI is connected.

^{*2} Displayed only if a sink device supporting audio is connected.

9.4.3 Version

You can display the model number and firmware version.

Information to be displayed

[Table 9.8] Version

Item	Example
Model number	NJR-P01UFR-R
Firmware version	1.00

10 Product specification

Item		Description
Input		1 input Digital signal for extension Format: IP-NINJAR protocol LAN Connector: 2 Neutrik's LC (opticalCON DUO series)
Output		1 output HDMI/DVI 1.0 TMDS single link, HDCP 1.4/2.2 HDR (*1) x.v.Color/3D/ARC/HEC/CEC are not supported. Connector: 1 female HDMI Type A (19-pin) Transmission distances: Up to 98 ft. (30 m) (1080p@60), Up to 39 ft. (12 m) (4K@60) (*2)
Format		VGA / SVGA / XGA / WXGA (1280x768) / WXGA (1280x800) / Quad-VGA / SXGA / WXGA (1360x768) / WXGA (1366x768) / SXGA+ / WXGA+ / WXGA++ / UXGA / WSXGA+ / VESAHD / WUXGA / QWXGA / 4K 480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K For 4K formats, 24 Hz/25 Hz/30 Hz/50 Hz (4:4:4)/60 Hz (4:4:4) are supported.
Color depth		24 bit, 30 bit, 36 bit Deep Color For 4K formats, only 24 bit is supported.
Dot clock		25 MHz to 600 MHz
TMDS clock		25 MHz to 300 MHz
TMDS data rate		0.75 Gbps to 18 Gbps
Digital audio output		Multi-channel LPCM up to 8 channels Sampling frequency: 32 kHz to 192 kHz Sample size: 16 bit to 24 bit
Cable for extension	Polishing	- SFP+ optical transceiver for Multimode : PC polishing (Recommended) - SFP+ optical transceiver for Singlemode : UPC polishing (Recommended), SPC *APC is not supported.
	Transmission distances (*3)	- Multimode fiber (OM3) : Up to 984 ft. (300 m) - Singlemode fiber (OS1) : Up to 6.21 mi. (10 km) - Singlemode fiber (OS1) : Up to 24.85 mi. (40 km, optional)
Control	LAN	1 port/Neutrik's RJ-45 (etherCON type) 10Base-T/100Base-TX/1000Base-T (Auto Negotiation), Auto MDI/MDI-X
Functions		DDC buffer, Connection Reset (*4)
General	Power	100 - 240 VAC ±10%, 50 Hz/60 Hz ±3 Hz Neutrik's powerCON type
	Power consumption	About 8 Watts
	Dimensions	8.3 (W) × 1.7 (H) × 10.2 (D)" (210 (W) × 44(H) × 260 (D) mm) (Excluding connectors and the like)
	Weight	3.7 lbs. (1.7 kg)
	Temperature	Operating : 32°F to 104°F (0°C to +40°C) Storage : -4°F to +176°F (-20°C to +80°C)
	Humidity	Operating/Storage: 20% to 90% (Non Condensing)

*1 HDR is supported if the connected sink device supports HDR and its copied EDID is set for EDID setting.

*2 The maximum cable distance varies depending on the connected devices and was measured under following conditions:

- 1080p@60: When IDK's 24 AWG cable was used and signals of 1080p@60 24 bit/pixel (8 bit/component) was output.
- 4K@60 : When IDK's 18 Gbps supported cable was used and signals of 4K@60 24 bit/pixel (8 bit/component) was output.

The maximum cable distance depends on the connected devices. The distance may not be extended with some device combinations, cabling method, or other manufacturer's cable. Video may be disturbed or may not be output even if signals are within the range mentioned above.

*3 The maximum transmission distance is measured under the following conditions: Fiber that is polished by a recommended method is used; there is no interconnection; it does not exceed the allowable bending radius.

*4 For digital systems, some problems, such as an HDCP authentication error, can often be recovered by physically disconnecting and reconnecting the digital cables. However, the Connection Reset feature will fix these problems automatically without the need to physically plug and unplug the cables. It creates the same condition as if the cable were physically disconnected and reconnected. This feature only works for the NJR-P's output. If other devices are connected between the NJR-P's output and sink device, this feature may be invalid.

11 Troubleshooting

In case the NJR-P does not work correctly, please check the following items first. Also refer to manuals for connected devices as well, since they may possibly be the cause of the problem.

- Are the NJR-P and all devices connected to power and powered on?
- Are signal cables connected correctly?
- Are there any loose or partially mated connections?
- Are the interconnecting cables specified correctly to support adequate bandwidth?
- For 4K format, is an 18 Gbps high-speed cable used?
- Are specifications of connected devices matched to each other?
- Are configuration settings for the connected devices correct?
- Is there any nearby equipment that may cause electrical noise/RF interference?

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

No.	Checking items	Result
1	The problem occur at all connectors?	Yes or No
2	Connect the devices using genuine cables without connecting the NJR-P. The problem still cannot be solved? Please contact us for assistance.	Yes or No

User Guide of NJR-P01UFR-R

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