Dante Audio Bridge Interface
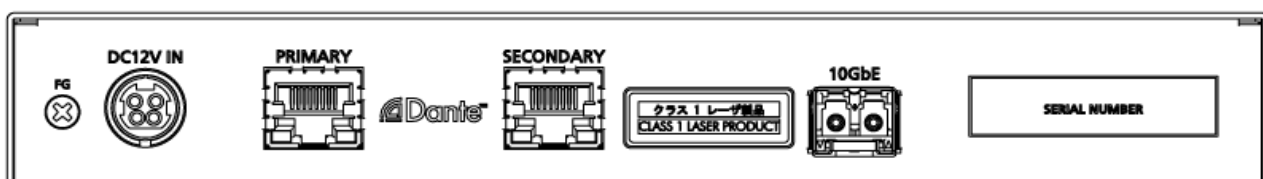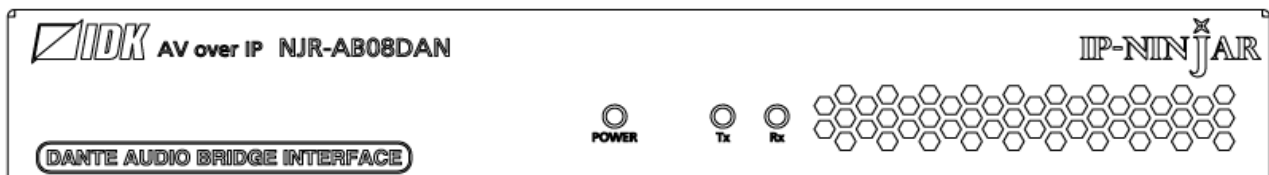
NJR-AB08DAN

<User Guide>

<Command Reference Guide>

Ver.1.4.0

- 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.

IDK Corporation

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Before reading this manual

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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: Dante Audio Bridge Interface

Model Name: NJR-AB08DAN

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.

⚠ **Warning**	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.
⚠ **Caution**	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**	● **Lifting must be done by two or more personnel.** To avoid injury: When lifting the product, bend your knees, keep your back straight and get close to it with two or more persons.

For installing and connecting products:

🚫 **Prohibited**	● **Do not place the product in unstable place.** Install the product in a horizontal and stable place, as this may fall or tip over and cause injury. ● **Secure the product if installing in the locations with vibration.** Vibration may move or tip over the product unexpectedly, resulting in injury.

⚠ Warning

Instruction	**● 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, arching 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	**● 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,** ・ **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.** Misuse of the power cable and plug may cause fire or electric shock. If power cables/plugs become damaged, contact your IDK representative.
Do not disassemble	**● 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	**● Do not touch the product and connected cables during electric storms.** Contact may cause electric shock.
Instruction	**● 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	**● 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.** 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.

⚠ **Caution**

For installing and connecting products:

🚫 **Prohibited**	● **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.
🚫 **No wet hands**	● **Do not handle power plug with wet hands.** Failure to observe this precaution may increase the risk of electric shock.
❗ **Instruction**	● **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:

Hot surfaces Caution	**For products with the hot surfaces caution label only:** ● **Do not touch the product's hot surface.** 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.
Prohibited	● **Use only the supplied power cable and AC adapter.** ● **Do not use the supplied power cable and AC adapter with other products.** If non-compliant adapter or power cables are used, it may increase the risk of fire or electric shock.
Unplug	● **If the product won't be used for an extended period of time, unplug it.** Failure to observe this precaution may increase the risk of fire. ● **Unplug the product before cleaning.** To prevent electric shock.
Instruction	● **Do not prevent heat release.** 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. ● **Keep vents clear of dust.** 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.

Table of Contents

1 About this Guide

This user guide explains how to use the Dante Audio Bridge Interface, NJR-AB08DAN.
If other IP-NINJAR series products are connected, refer to each User Guide.

2 Included items

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

One (1) NJR-AB08DAN
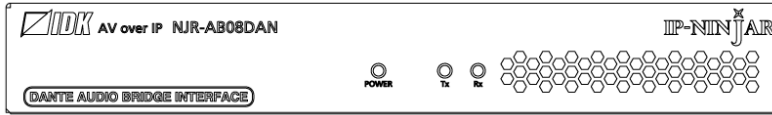
One (1) AC adapter (4 ft. (1.2 m))

[Fig. 2.1] Included items

Tip:
Dust caps are attached to SFP+ optical transceiver and the connector.
These caps will be used for shipping or repairing the NJR unit.
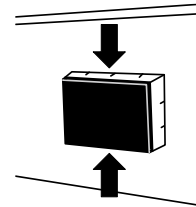
3 Precautions for shipping

SFP+ optical transceiver is vulnerable to damage caused by mishandling during shipment if it is improperly packaged.

If, for any reason, you need to ship the device, remove the transceiver from the device and plug the dust cap into the transceiver and the connector. Put the removed transceiver in an electrostatic bag with enough cushion.

To install a transceiver:

Make sure the bale clasp is closed.

Line up the transceiver with the port and slide it into the port until you hear a click.

Removing a transceiver:

Open the bale clasp and pull the transceiver out of the port.

SFP+ transceiver

Bale clasp

Installing   Removing
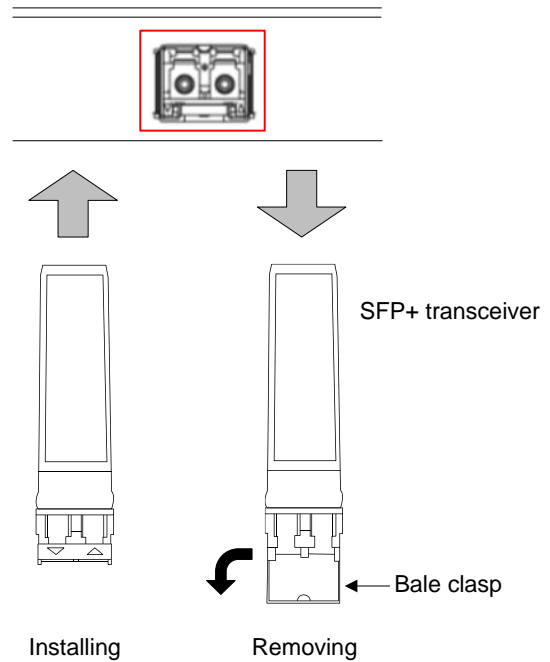
[Fig. 3.1] Removing and installing SFP+ optical transceiver

Note:

When installing the SFP+ transceiver, push it firmly and ensure that it is completely seated and the bale clasp is locked. Do not open the bale clasp except for removing the transceiver.

4 Product outline

The NJR-AB08DAN transcodes audio signal directly between the IP-NINJAR and Dante protocol environments. Audio signal transport is enabled from NJR encoders to Dante devices and from Dante device to NJR decoders.

The NJR-AB08DAN can receive up to four audio streams from IP-NINJAR encoders and output up to eight channels in Dante protocol. The bridge can also accept up to 8-channel audio from Dante sources, outputting IP-NINJAR protocol in up to four audio streams.

Audio can be set from the NJR-CTB.
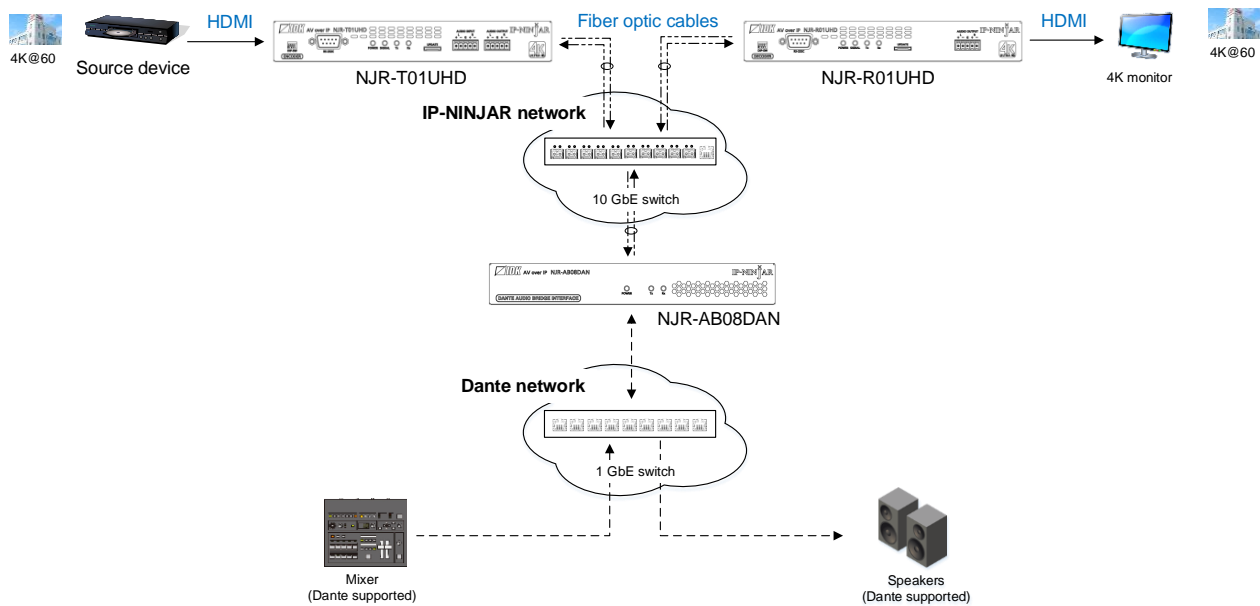
[Fig. 4.1] HDMI signals transmission

Note:

Please use the NJR-AB08DAN with a combination of IP-NINJAR products.

The NJR-AB08DAN cannot be connected to OPF or FDX series products.

5 Features

■ Audio
- Transcoding audio signal between IP- NINJAR and Dante protocols
- Receiving up to four (4) audio streams from IP-NINJAR encoders and outputting as Dante protocol up to eight (8) channels
- Receiving up to 8-channel Dante audio from Dante devices and outputting as IP-NINJAR protocol up to four (4) audio streams
- Dante audio can be embedded to HDMI signal at IP-NINJAR decoder
- Dante audio can be de-embedded to analog audio signal at IP-NINJAR decoder

■ Network
- Controllable through network using NJR-CTB
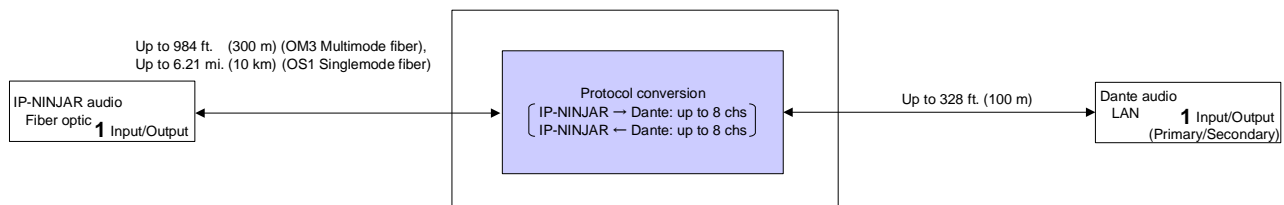
[Fig. 5.1] NJR-AB08DAN

6 Panels
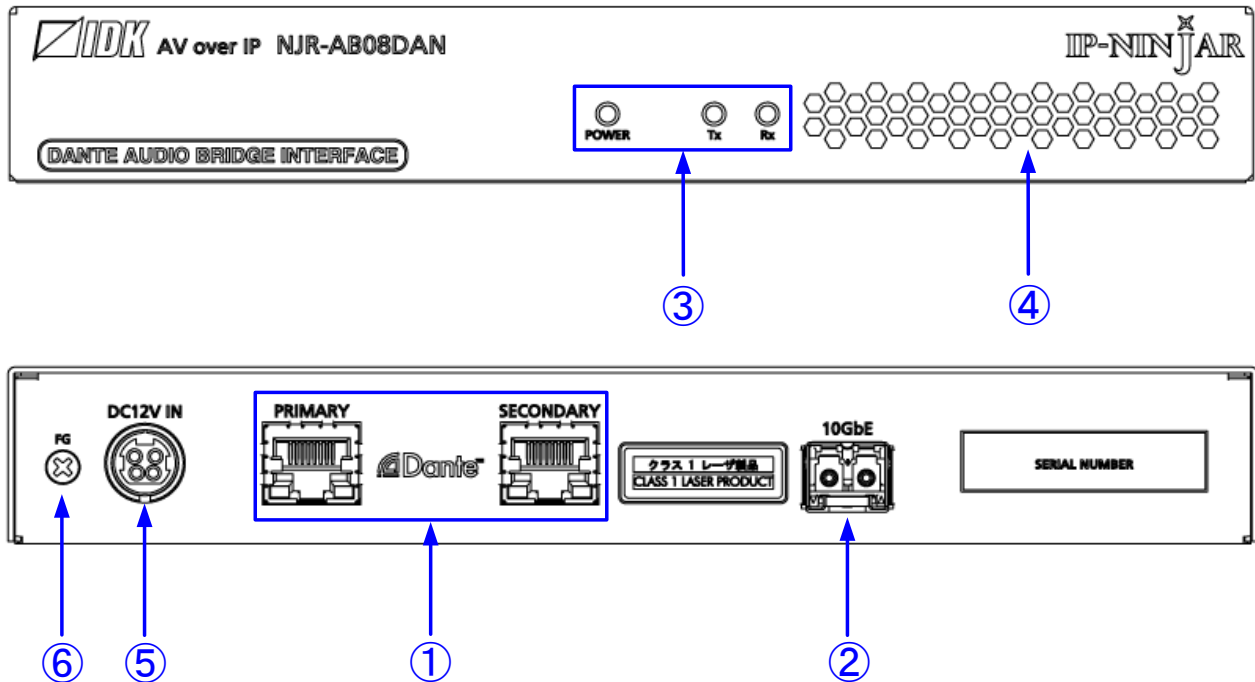
[Fig. 6.1] NJR-AB08DAN drawing

[Table 6.1] NJR-AB08DAN features

#	Feature	Description
①	Dante connectors (PRIMARY/SECONDARY)	Dante protocol connector Connects to the network switch that is connected to Dante devices
②	IP-NINJAR connector	IP-NINJAR protocol connector Connects to a 10 GbE switch that is connected to IP-NINJAR devices via a fiber optic cable SFP+ optical transceivers are sold separately.
③	Status LEDs	POWER : Illuminates when power is supplied from the AC adapter TX : Blinks when a valid code is being sent to 10 GbE switch RX : Blinks when a valid code is being received from 10 GbE switch
④	Vent holes	Prevents internal temperature raise Do not block ventilation holes
⑤	Power supply connector	For the provided AC adapter
⑥	FG (Frame ground)	Use for bonding chassis to local ground. An M3 screw is used

7   System Configuration Example

Configuration example: Connecting the NJR-AB08DAN to IP-NINJAR and Dante networks

① Audio signal that is input from source device to the NJR-T01UHD is transmitted to the NJR-AB08DAN. The NJR-AB08DAN transcodes the audio signal to Dante protocol and outputs the signal to Dante network.

② Audio signal that is input from Dante network to the NJR-AB08DAN is transcoded to IP-NINJAR protocol. The audio signal is transmitted from IP-NINJAR network to the NJR-R01UHD, and the signal can be output from the NJR-R01UHD HDMI output connector or analog audio output connector.
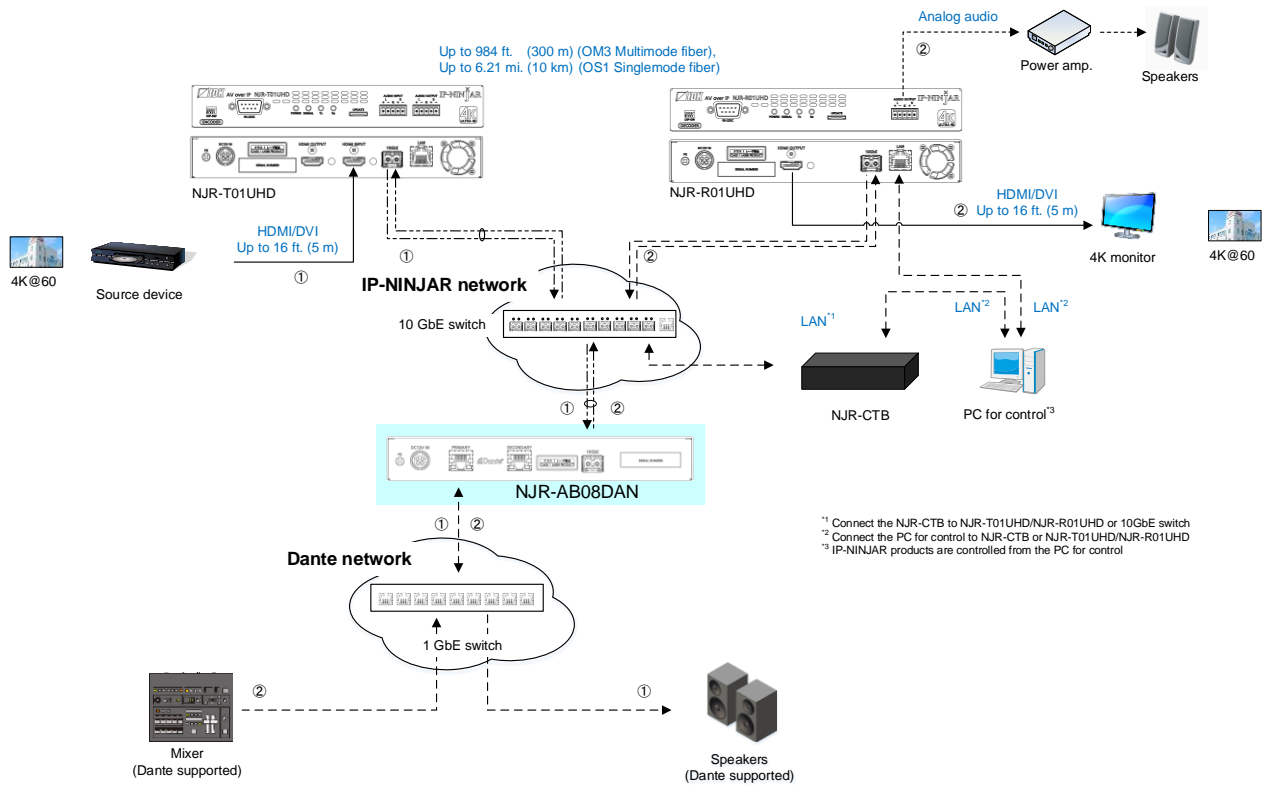
[Fig. 7.1] NJR-AB08DAN is connected to IP-NINJAR and Dante networks

8 Precautions

Before connecting to external devices, follow the precautions below.

8.1 Installation

When installing the NJR-AB08DAN, please observe the following precautions.

- ・ Do not stack or place one NJR-AB08DAN directly on top of another NJR-AB08DAN
- ・ Do not block vent holes. To provide adequate ventilation, maintain sufficient clearances around the NJR-AB08DAN (1.2 in. (30 mm) or more)
- ・ When the NJR-AB08DAN needs to be mounted in an enclosed space or an EIA rack without using IDK's rack mounting hardware (RM-SF and RM-SH), ensure that a sufficient ventilation/cooling system is provided to keep the ambient temperature at 104°F (40°C) or lower. If inadequately vented, the product's service life, operation, and reliability may be affected.

Maintain adequate clearances (1.2 in. (30 mm) or more) as shown below.

Bad example   **Good example**

Good example
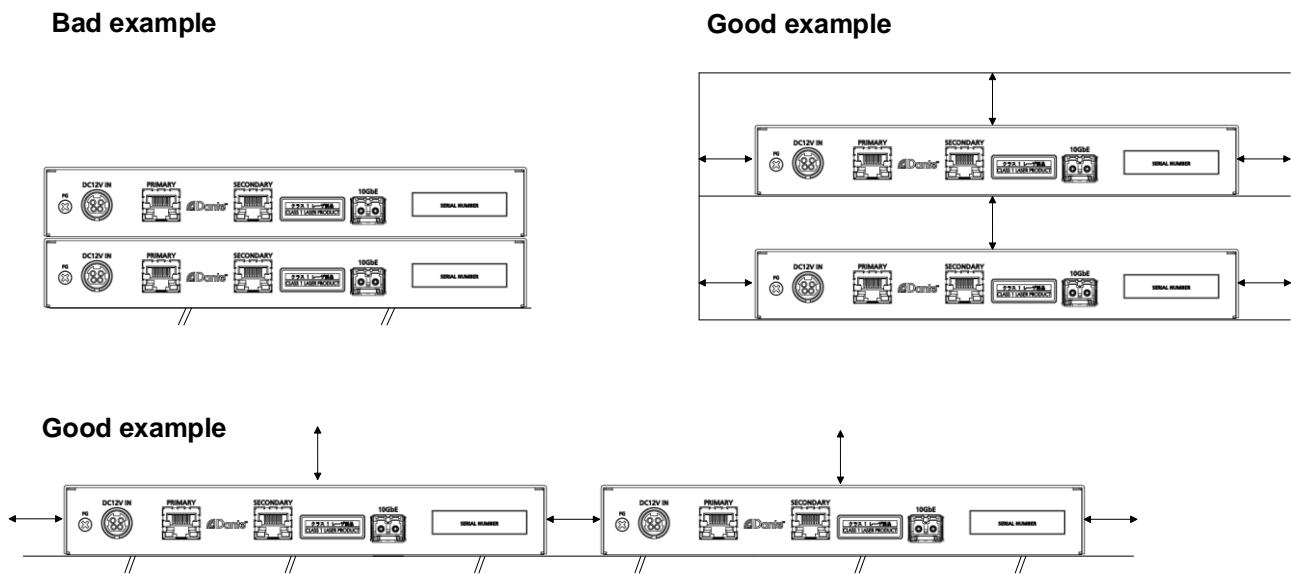
[Fig. 8.1] Necessary clearances

8.2 Cabling

When connecting the NJR-AB08DAN to external devices, please observe the following precautions.

・ Read manuals for the external devices
・ Before connecting cables to the NJR-AB08DAN 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

8.2.1 Fiber optic cable for extension

The NJR-AB08DAN 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 10 GbE switch.
Connect the input connector of this device to the output connector of the 10 GbE switch.
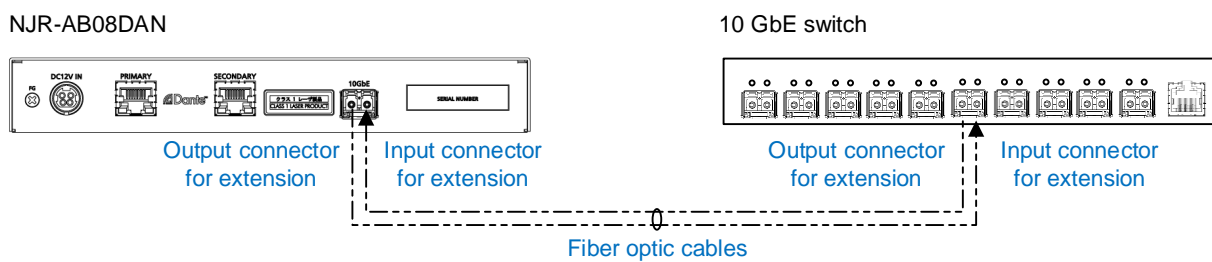
[Fig. 8.2] Connecting fiber optic cable

Note:
For the connectors of 10 GbE 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.
・ Extension 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-T01SDI may not operate correctly

Left   : without dust cap
Right : with dust cap

[Fig. 8.3] Dust caps
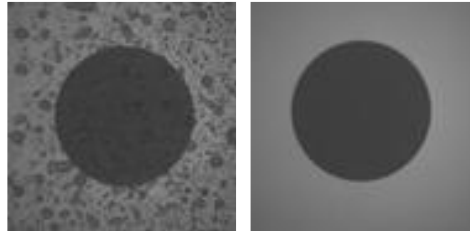
Before cleaning   After cleaning

[Fig. 8.4] Cleaning connector

8.2.2 DIN plug AC adapter with locking mechanism

The shapes of AC plugs with screw locking mechanism vary from country to country. The AC plug can be removed from the AC adapter.

Removing AC plug:
Slide the AC plug (②) from the AC adapter while holding down the portion mentioned below (①)
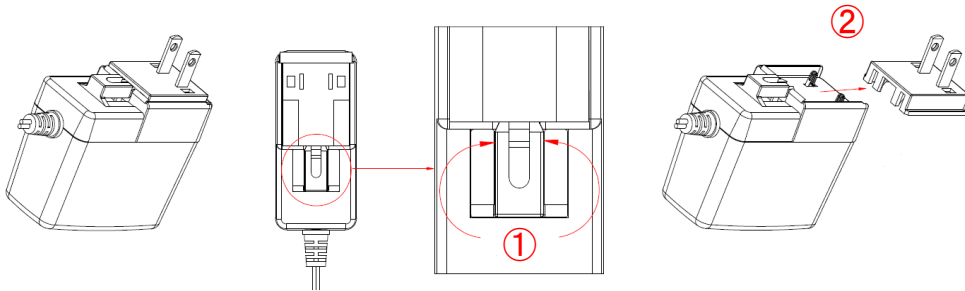
[Fig. 8.5] Removing AC plug (Example: Plug type A)

Attaching AC plug:
Gently slide the AC plug into the AC adapter (③) until it clicks (④)
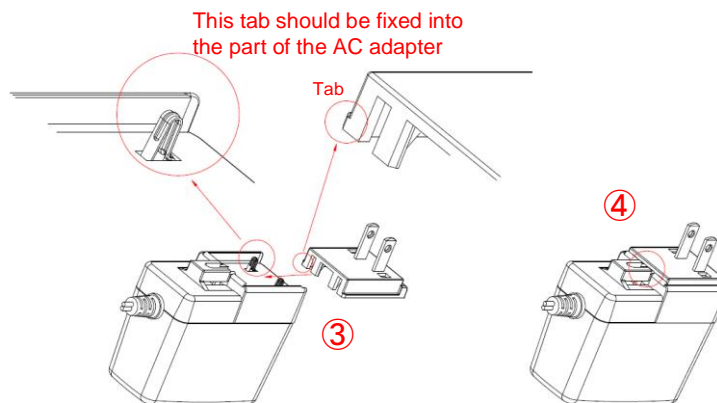
[Fig. 8.6] Attaching AC plug (Example: Plug type A)

■ **Plugging and unplugging DC plug**

Plug the DC plug to the power supply connector of the unit until it clicks

Hold the portion mentioned below when unplugging the DC plug

Hold this part and pull the DC plug

Plugging　　　Unplugging
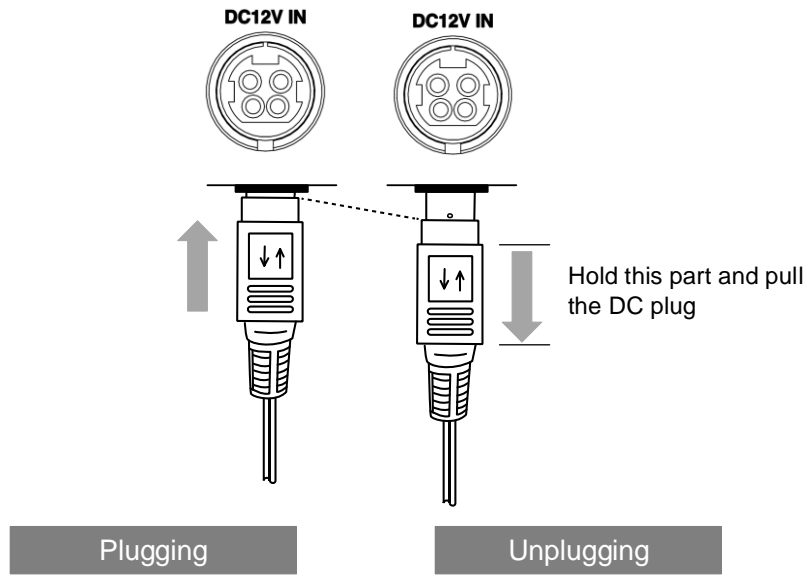
[Fig. 8.7] Plugging and unplugging DC plug

9 Basic Operation

IP-NINJAR network can be controlled from the NJR-CTB, and Dante network can be controlled from the Dante Controller.

【See: 9.2.2 Dante Controller】
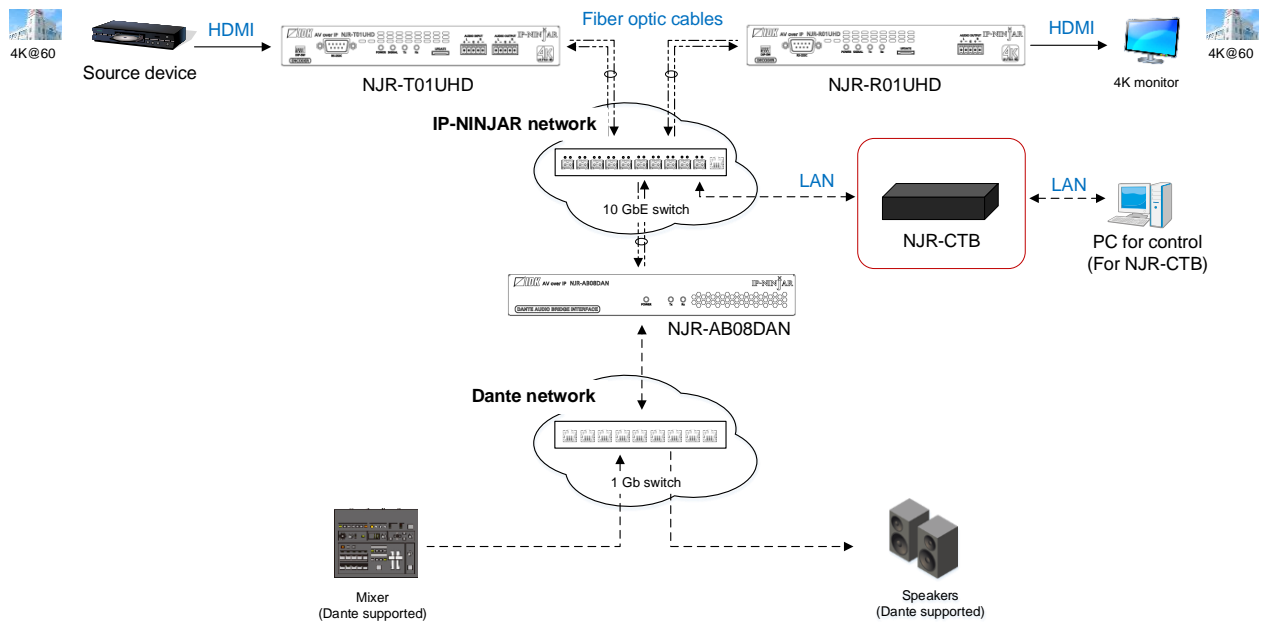
[Fig. 9.1] Setting NJR-AB08DAN

9.1 Controlled by NJR-CTB

The NJR-CTB is the control device to command comprehensively IP-NINJAR devices via a 10 GbE switch. All IP-NINJAR devices that are connected to the network can be controlled using WEB browser or LAN communication commands by connecting the NJR-CTB to a 10 GbE switch or IP-NINJAR encoders/decoders.

For details of operations from WEB browser and communication commands, refer to the NJR-CTB User Guides.
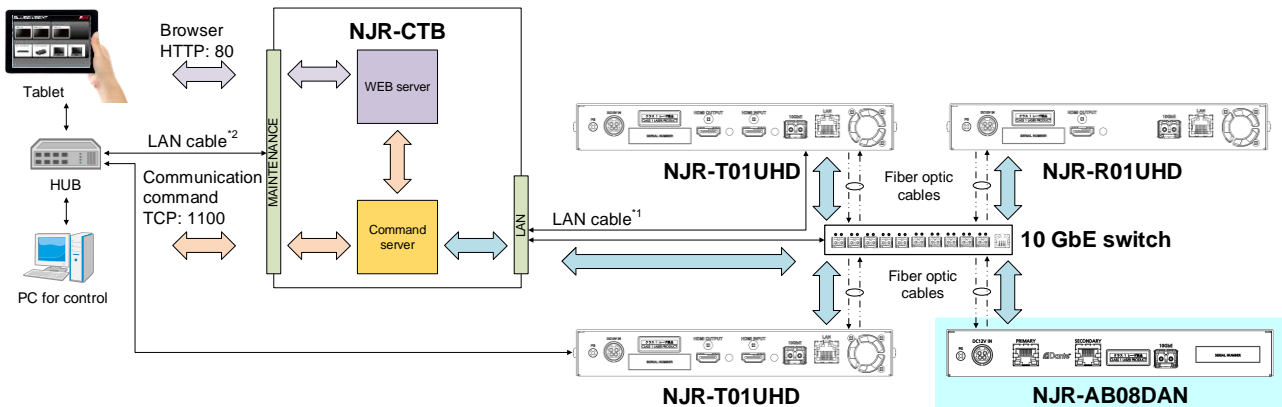
*1 LAN connector on NJR-CTB should be connected to the LAN connector on NJR-T01UHD/NJR-R01UHD or 10 GbE switch.
*2 PC for control should be connected to the MAINTENANCE connector on NJR-CTB or the LAN connector on NJR-T01UHD/NJR-R01UHD.

[Fig. 9.2] Controlled by NJR-CTB

9.2 Dante

Dante (Digital Audio Network Through Ethernet) is an audio networking technology developed by Audinate. The NJR-AB08DAN converts digital and analog audio signals from IP-NINJAR encoders into Dante format with 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, or 192 kHz sampling frequency and 24-bit sample size. Audio that is input from Dante network can be output to a decoder in IP-NINJAR network.

9.2.1 Dante network connection

Redundant connection and Daisy chain connection (Redundant connection is set by default) are supported for Dante devices.
The IP address for Dante connectors (Primary and Secondary) is automatically obtained over IP network. Use a Cat5e or better cable.
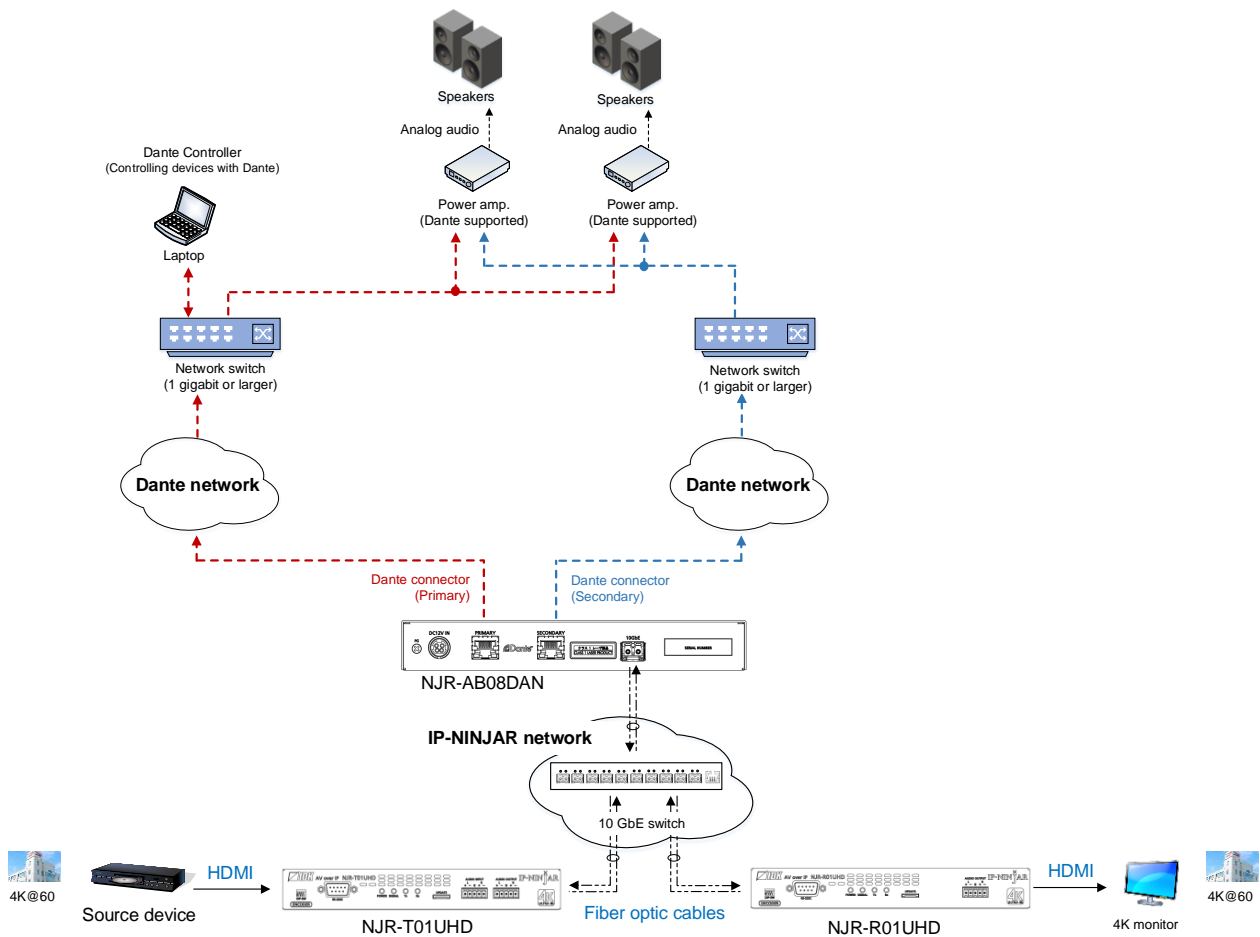
[Fig. 9.3] Redundant connection

Note:

For redundant operation, do not connect the Dante primary and secondary connectors to the same IP network.
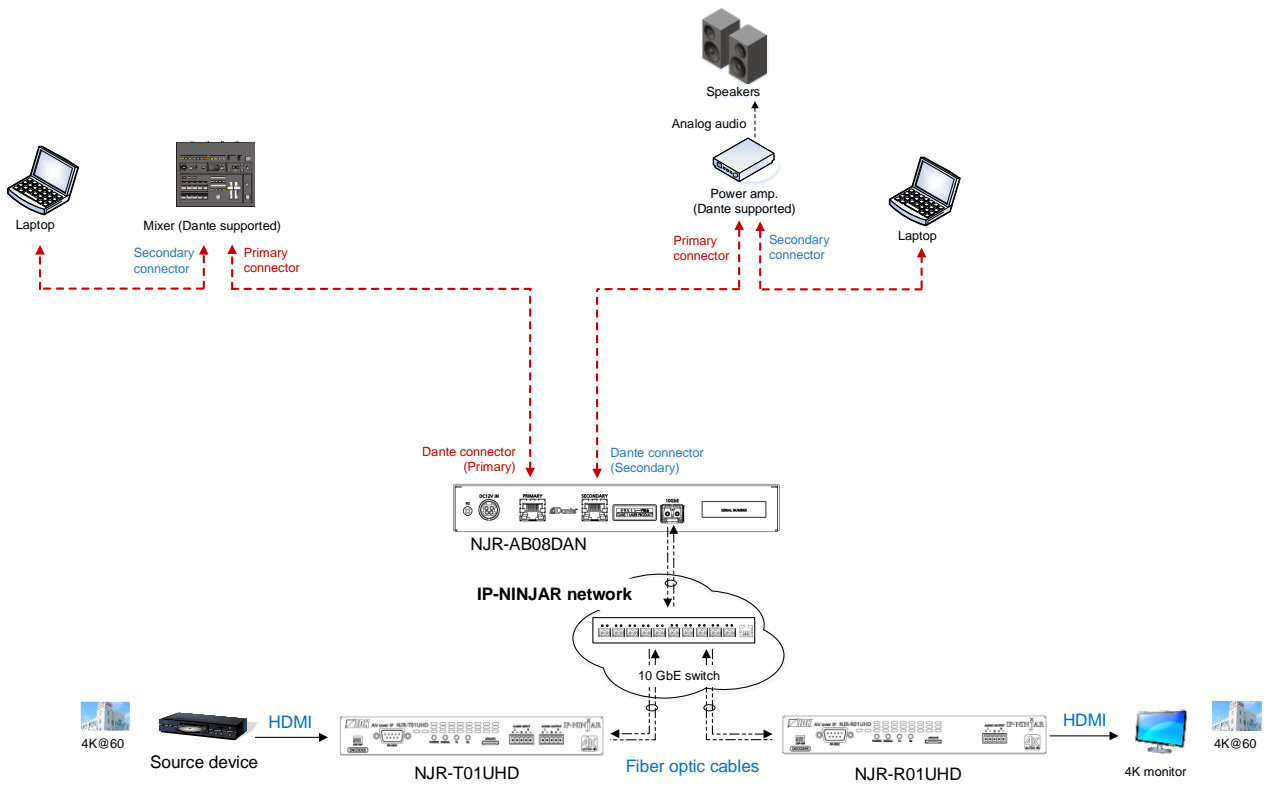
[Fig. 9.4] Daisy chain connection

9.2.2 Dante Controller

Dante Controller is software released by Audinate for controlling Dante output functions and audio routing with Dante devices. These settings are saved in each Dante device.

For "Dante Controller" details and to download the software, visit the website below:
https://www.audinate.com/

9.3 Initialization

All user configurable settings can be reset to their respective factory default values using NJR-CTB over LAN. When initialization completes, the NJR-AB08DAN reboots with new settings automatically.

Note:
Once setting values are initialized, they cannot be restored.

【See: 9.1 Controlled by NJR-CTB】

Communication command

　　　@CLRC   Initialization

9.4 Reboot

You can reboot the NJR-AB08DAN using NJR-CTB over LAN communication.

【See: 9.1 Controlled by NJR-CTB】

Communication command

　　　@RBTC   Reboot

10 Setting

The following items of the NJR-AB08DAN can be set using the NJR-CTB.
Refer to NJR-CTB User Guide for the following operations: Setting channel information, selecting input/output channel, and operating preset memory.

[Table 10.1] Setting items

Item	NJR-AB08DAN		Page
	Setting value	Default	
Audio crosspoint mode	2/2/2/2 mode 4/2/2/- mode 4/4/-/- mode 6/2/-/- mode 8/-/-/- mode	2/2/2/2 mode	28
Assigning audio channel	2 Channels (FL-FR), 2.1 Channels (FL-FR-LFE), 3.1 Channels (FL-FR-LFE-FC), 4.1 Channels (FL-FR-LFE-X-RL-RR), 5.1 Channels (FL-FR-LFE-FC-RL-RR), 6.1 Channels (FL-FR-LFE-FC-RL-RR-RC), 7.1 Channels (FL-FR-LFE-FC-RL-RR-RLC-RRC)	2 Channels (FL-FR)	30
LAN	Automatic/Fix	Automatic	31

10.1 Setting audio

10.1.1 Audio crosspoint mode

You can set the audio crosspoint mode for converting IP-NINJAR and Dante network audio signal protocols. Set the crosspoint mode based on the number of encoders/decoders and their output audio channels.

The NJR-AB08DAN transcodes IP-NINJAR and Dante protocols of up to eight channels and supports up to four encoders and decoders simultaneously.

■ **Application example (Encoder)**
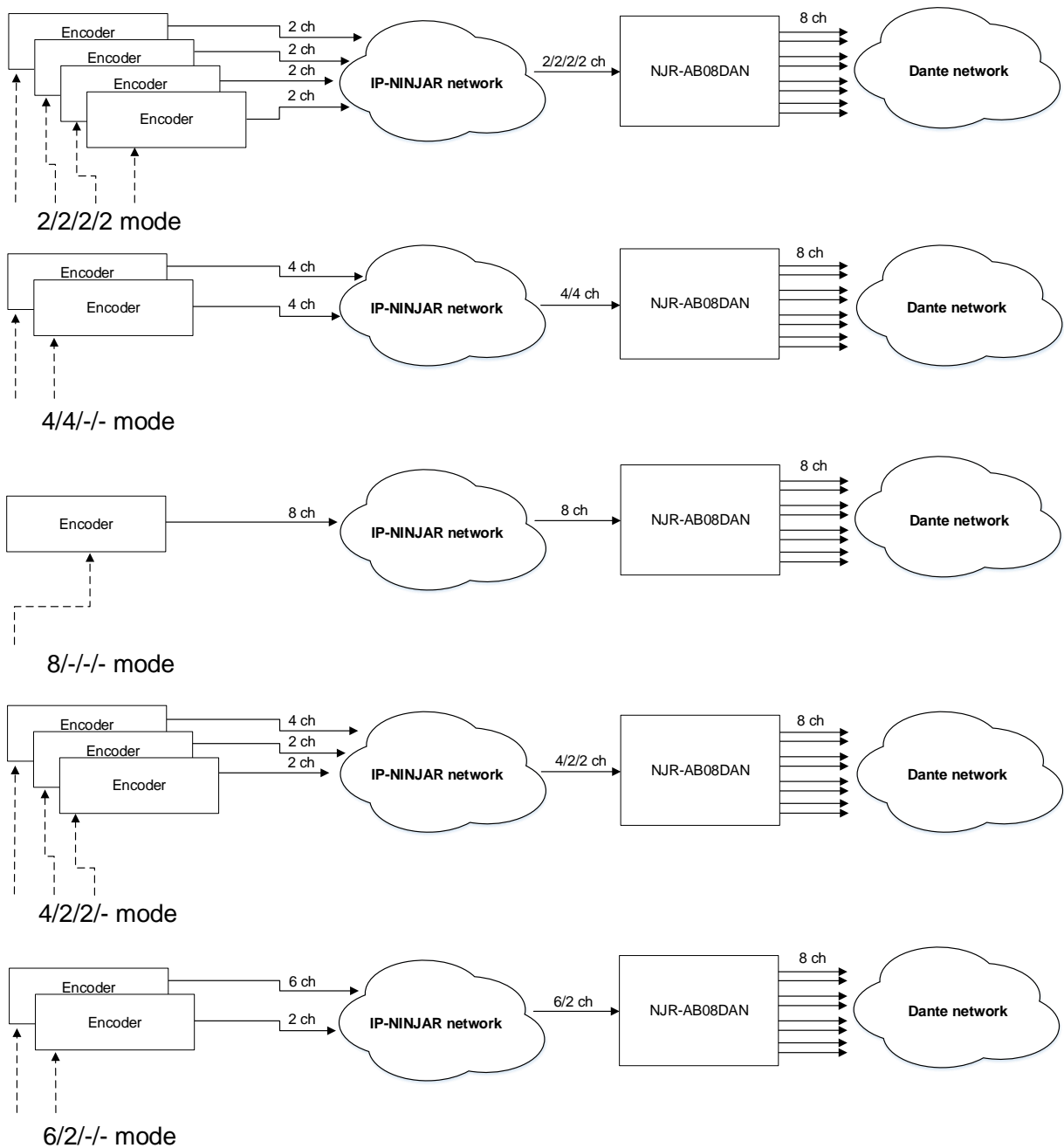
[Fig. 10.1] Crosspoint modes (Encoder)

■ Application example (Decoder)
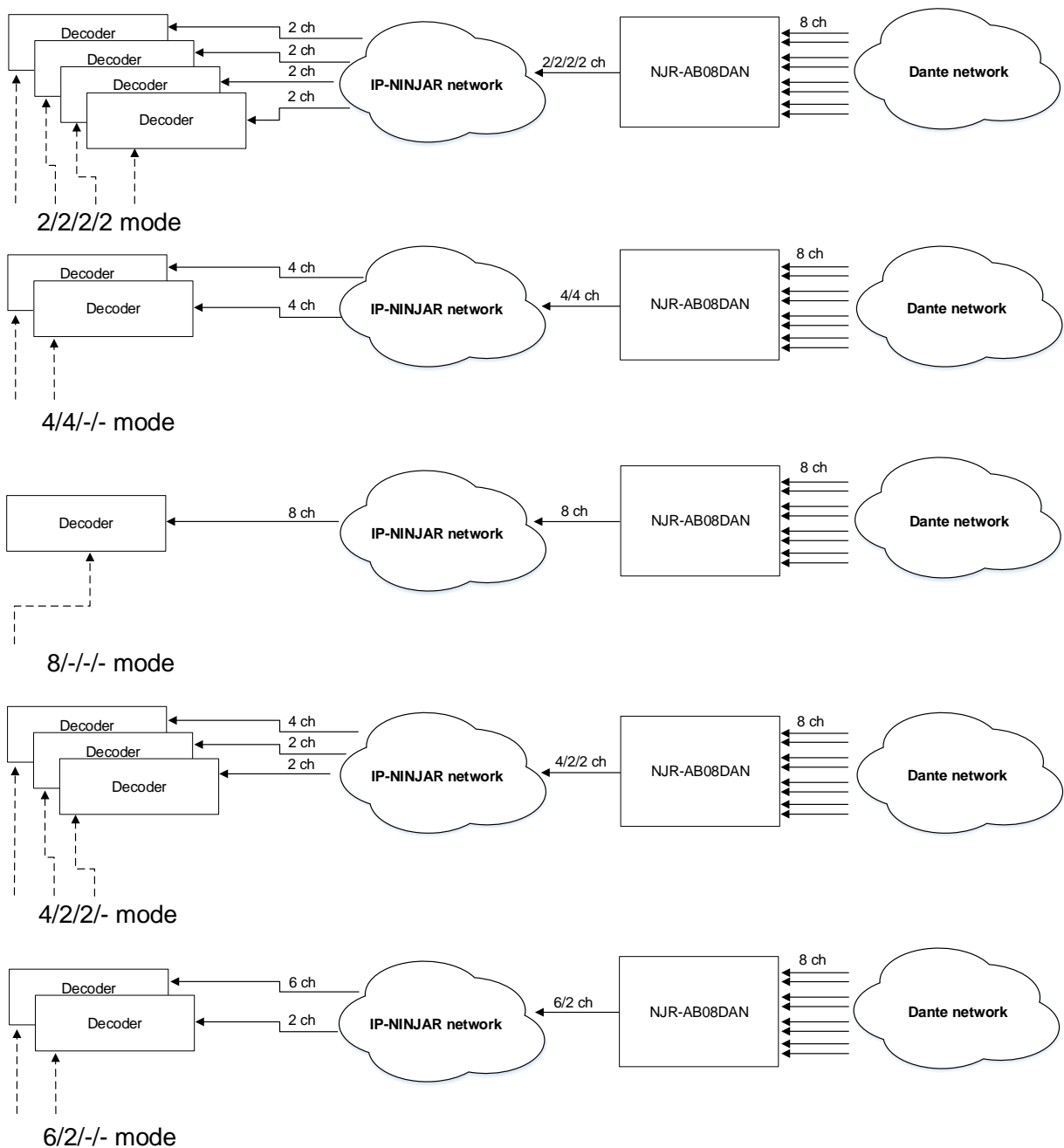
[Fig. 10.2] Crosspoint mode (Decoder)

Setting value

・2/2/2/2 mode   [Default]   ・4/4/-/- mode   ・8/-/-/- mode

・4/2/2/- mode   ・6/2/-/- mode

Communication command

@SACP   Setting crosspoint mode
@GACP   Getting crosspoint mode

10.1.2 Assigning audio channel

You can assign audio that is output from Dante network to IP-NINJAR network.

Setting value

    ・2 Channels　(FL-FR)　[Default]
    ・2.1 Channels (FL-FR-LFE)
    ・3.1 Channels (FL-FR-LFE-FC)
    ・4.1 Channels (FL-FR-LFE-X-RL-RR)
    ・5.1 Channels (FL-FR-LFE-FC-RL-RR)
    ・6.1 Channels (FL-FR-LFE-FC-RL-RR-RC)
    ・7.1 Channels (FL-FR-LFE-FC-RL-RR-RLC-RRC)

Communication command

    @SACA　　Assigning audio channel
    @GACA　　Getting audio channel assignment

10.2 Setting LAN

10.2.1 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 10.2] Setting items of LAN communication

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

Communication command

@SIPS   Setting LAN
@GIPS   Getting LAN setting

10.2.2 MAC address

You can display the NJR-AB08DAN's MAC address.

Information to be displayed

[Table 10.3] MAC address

Item to be displayed	Example
MAC address	0008E5690000

Communication command

@GMCC   Getting MAC address

11 Command

11.1 Summary

A command consists of "@" ("40" in hexadecimal), 4 one-byte alphabetical characters (upper and lower cases), followed by parameters (one-byte numbers). For some commands, multiple parameter values can be specified or parameters are not necessary. Processing is executed by sending a delimiter at the end of the command.

Example: @SACP,1,2,1,5 ⏎

"," (a comma, "2C" in hex) is indicated between a command and parameter and between two parameters.
"⏎" is indicated as a delimiter CR LF (return+line feed, "0D" and "0A" in hex).

■ **If an error occurs:**
An error command is returned if an undefined command or wrong parameter is included.

Example: @AAA ⏎
　　　　 @ERR,2 ⏎

11.2 Command list

■ Error status

Command	Function	Page
@ERR	Error status	34

■ Setting audio

Command	Function	Page
@GACP / @SACP	Audio crosspoint mode	35
@GACA / @SACA	Assigning audio channel	36

■ Setting LAN

Command	Function	Page
@GIPS / @SIPS	LAN	37
@GMCC	MAC address	38

■ Advanced setting

Command	Function	Page
@CLRC	Initialization	39
@RBTC	Reboot	39

11.3 Details of commands

11.3.1 Error status

@ERR		Error status
Description		Response in case the command is not executed
Response		@ERR, error ⏎

Parameter		error: Error status
		    1 = Erroneous parameter format or value
		    2 = Undefined command or wrong format

Getting example	Command	@AAA ⏎
	Response	@ERR,2 ⏎
	Description	Sending @AAA command Command format error
Page		―

11.3.2 Setting audio

@GACP / @SACP		Audio crosspoint mode
Getting	Command	@GACP, type_1, ch_1, reserved_1 (, type_2, ch_2, reserved_2···) ⏎
	Response	@GACP, type_1, ch_1, reserved_1, mode_1 (, type_2, ch_2, reserved_2, mode_2···) ⏎
Setting	Command	@SACP, type_1, ch_1, reserved_1, mode_1 (, type_2, ch_2, reserved_2, mode_2···) ⏎
	Response	@SACP, type_1, ch_1, reserved_1, mode_1 (, type_2, ch_2, reserved_2, mode_2···) ⏎
Parameter		type_1-512: Type 1 = Input, 2 = Output
		ch_1-512: Channel 1 to 512 = Channel 1 to Channel 512
		reserved_1-512: Reservation "1" fixed

		mode_1-512: Audio cross point mode
		    1 = 2/2/2/2,
		    2 = 4/2/2/-,
		    3 = 4/4/-/-,
		    4 = 6/2/-/-,
		    5 = 8/-/-/-
		    [Default] 2/2/2/2

Getting example	Command	@GACP,1,2,1 ⏎
	Response	@GACP,1,2,1,2 ⏎
	Description	Getting the audio crosspoint mode of Input channel 2 2/2/2/2
Setting example	Command	@SACP,1,2,1,5 ⏎
	Response	@SACP,1,2,1,5 ⏎
	Description	Setting the audio crosspoint mode of Input channel 2 to 8/-/-/-
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@GACA / @SACA		Assigning audio channel
Getting	Command	@GACA, type_1, ch_1, reserved1_1 (, type_2, ch_2, reserved_2···) ⏎
	Response	@GACA, type_1, ch_1, reserved1_1, number_1, mode_1 (, type_2, ch_2, reserved_2, number_2, mode_2···) ⏎
Setting	Command	@SACA, type_1, ch_1, reserved1_1, reserved2_1, mode_1 (, type_2, ch_2, reserved1_2, reserved2_2, mode_2···) ⏎
	Response	@SACA, type_1, ch_1, reserved1_1, reserved2_1, mode_1 (, type_2, ch_2, reserved1_2, reserved2_2, mode_2···) ⏎
Parameter		type_1-512: Type 　　"1" fixed
		ch_1-512: Input channel 　　1 to 512 = Input channel 1 to Input channel 512
		reserved1_1-512: Reservation 　　"1" fixed
		reserved2_1-512: Reservation 　　"0" fixed
		number_1-512: The number of channels
		mode_1-512: Assigning mode 　　1 = 2 Channels (FL-FR), 　　2 = 2.1 Channels (FL-FR-LFE), 　　3 = 3.1 Channels (FL-FR-LFE-FC), 　　4 = 4.1 Channels (FL-FR-LFE-X-RL-RR), 　　5 = 5.1 Channels (FL-FR-LFE-FC-RL-RR), 　　6 = 6.1 Channels (FL-FR-LFE-FC-RL-RR-RC), 　　7 = 7.1 Channels (FL-FR-LFE-FC-RL-RR-RLC-RRC) 　　[Default] 2 Channels (FL-FR)
Getting example	Command	@GACA,1,2,1 ⏎
	Response	@GACA,1,2,1,2,1 ⏎
	Description	Getting the audio channel assignment of Input channel 2 2 Channels (FL-FR)
Setting example	Command	@SACA,1,2,1,0,7 ⏎
	Response	@SACA,1,2,1,0,7 ⏎
	Description	Assigning the audio channel of Input channel 2 to 7.1 Channels (FL-FR-LFE-FC-RL-RR-RLC-RRC)
Page		P.30

11.3.3 Setting LAN

@GIPS / @SIPS		LAN
Getting	Command	@GIPS, type_1, ch_1, port_1 (,type_2, ch_2, port_2···) ↵
	Response	@GIPS, type_1, ch_1, port_1, mode_1, ip_1, mask_1, gateway_1 (,type_2, ch_2, port_2, mode_2, ip_2, mask_2, gateway_2···) ↵
Setting	Command	@SIPS, type_1, ch_1, port_1, mode_1, ip_1, mask_1, gateway_1 (,type_2, ch_2, port_2, mode_2, ip_2, mask_2, gateway_2···) ↵
	Response	@SIPS, type_1, ch_1, port_1, mode_1, ip_1, mask_1, gateway_1 (,type_2, ch_2, port_2, mode_2, ip_2, mask_2, gateway_2···) ↵
Parameter		type_1-512: Type 1 = Input, 2 = Output
		ch_1-512: Channel 1 to 512 = Channel 1 to Channel 512
		port_1-512: Connector "1" fixed

		mode_1-512: Mode
		    0 = Automatic (DHCP) [Default], 1 = Static
		    "0" is selected, the following three parameters will be invalid.

		ip_1-512: IP address
		    0 to 255 = 8 bit (in decimal) x 4 combinations
		    [Default] Getting automatically

		mask_1-512: Subnet mask
		    0 to 255 = 8 bit (in decimal) x 4 combinations
		    [Default] Getting automatically

		gateway_1-512: Default gateway
		    0 to 255 = 8 bit (in decimal) x 4 combinations
		    [Default] Getting automatically

Getting example	Command	@GIPS,1,1,1 ↵
	Response	@GIPS,1,1,1,1,192.168.3.2,255.255.255.0,192.168.3.254 ↵
	Description	Getting the LAN setting of Input channel 1 - Mode : Static - IP address : 192.168.3.2 - Subnet mask : 255.255.255.0 - Default gateway : 192.168.3.254
Setting example	Command	@SIPS,1,1,1,1,192.168.3.2,255.255.255.0,192.168.3.254 ↵
	Response	@SIPS,1,1,1,1,192.168.3.2,255.255.255.0,192.168.3.254 ↵
	Description	Setting the LAN of Input channel1 as follows: - Mode : Static - IP address : 192.168.3.2 - Subnet mask : 255.255.255.0 - Default gateway : 192.168.3.254
Page		P.31

@GMCC		MAC address
Getting	Command	@GMCC, type_1, ch_1, port_1 (, type_2, ch_2, port_2···) ↵
	Response	@GMCC, type_1, ch_1, port_1, mac_1 (, type_2, ch_2, port_2, mac_2···) ↵
Parameter		type_1-512: Type 1 = Input, 2 = Output
		ch_1-512: Channel 1 to 512 = Channel 1 to Channel 512
		port_1-512: Connector "1" fixed
		mac_1-512: MAC address 00 to FF = 8 bit (in hex) x 6 combinations
Getting example	Command	@GMCC,1,1,1 ↵
	Response	@GMCC,1,1,1, 0008E5690000 ↵
	Description	Getting the MAC address of Input channel 1 00:08:E5:69:00:00
Page		P.31

11.3.4 Advanced setting

@CLRC		Initialization
Setting	Command	@CLRC, type _1, ch_1, reserved_1, comm_setting_1, (,type _2, ch_2, reserved_2, comm_setting_2···) ⏎
	Response	@CLRC, type _1, ch_1, reserved_1, comm_setting_1 (,type _2, ch_2, reserved_2, comm_setting_2···) ⏎
Parameter		type_1-512: Type 1 = Input, 2 = Output
		ch_1-512: Input channel 1 to 512 = Input channel 1 to Input channel 512
		reserved_1-512: Reservation "1" fixed
		comm _setting_1-512: Communication setting (initializing LAN and RS-232C) 0 = Disabled [Default], 1 = Enabled
Setting example	Command	@CLRC,1,2,1,0 ⏎
	Response	@CLRC,1,2,1,0 ⏎
	Description	Initializing settings of Input channel 2, except for communication setting
Page		P.26

@RBTC		Reboot
Setting	Command	@RBTC, type_1, ch_1, reserved_1 (,type_2, ch_2, reserved_2···) ⏎
	Response	@RBTC, type_1, ch_1, reserved_1 (,type_2, ch_2, reserved_2···) ⏎
Parameter		type_1-512: Type 1 = Input, 2 = Output
		ch_1-512: Channel 1 to 512 = Channel 1 to Channel 512
		reserved_1-512: Reservation "1" fixed
Setting example	Command	@RBTC,1,2,1 ⏎
	Response	@RBTC,1,2,1 ⏎
	Description	Rebooting the Input channel 2
Page		P.26

12 Product specification

Item			Description
Input	IP-NINJAR network audio		1 input Format: IP-NINJAR protocol Sampling frequency: 44.1 kHz to 192 kHz, Sample size: 24 bit Maximum audio stream: 4 streams Maximum audio input channel: 8 channels Connector: 2 LCs
	Dante network audio		1 input Format: Dante protocol Sampling frequency: 44.1 kHz to 192 kHz, Sample size: 24 bit Maximum audio input channel: 8 channels Connector: 2 RJ-45s (Primary/Secondary) (*1)
Output	IP-NINJAR network audio		1 output Format: IP-NINJAR protocol Sampling frequency: 44.1 kHz to 192 kHz, Sample size: 24 bit Maximum audio stream: 4 streams Maximum audio output channel: 8 channels Connector: 2 LCs
	Dante network audio		1 output Format: Dante protocol Sampling frequency: 44.1 kHz to 192 kHz, Sample size: 24 bit Maximum audio output channel: 8 channels Connector: 2 RJ-45s (Primary/Secondary) (*1)
Cable for extension	IP-NINJAR network audio	Cable	Duplex fiber cable SFP+ optical transceiver
		Transmission distances (*2)	Up to 984 ft. (300 m) (OM3 Multimode fiber), Up to 6.21 mi. (10 km) (OS1 Singlemode fiber)
	Dante network audio	Cable	CAT.5E HDC, Cat5e UTP/STP, Cat6 UTP/STP, Cat6A UTP/STP
		Transmission distances	Up to 328 ft. (100 m)
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 10 Watts
		Dimensions	8.3 (W) × 1.2 (H) × 3.9 (D)" (210 (W) × 30 (H) × 100 (D) mm) (Half rack wide, thin type) (Excluding connectors and the like)
		Weight	1.5 lbs. (0.7 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   These RJ-45 connectors are only for Dante format.
*2   Only if the SFP+ optical transceiver sold by IDK is used, signals can be transmitted to the mentioned maximum transmission distance. If using other SFP+ optical transceiver, check the compatible fiber and maximum distance of the SFP+ optical transceiver.

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13 Troubleshooting

In case the NJR-AB08DAN 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-AB08DAN and all devices plugged in and powered on normally?
- ・ Are cables connected correctly?
- ・ Are there no loose connections?
- ・ Are correct cables for NJR-AB08DAN being used?
- ・ Are signal specifications of connected devices matched to each other?
- ・ Are there any nearby objects that may cause noise?

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

No.	Checking items	Result
1	The problem occurs at all connectors?	Yes or No
2	Connect the devices using genuine cables without connecting the NJR-AB08DAN. The problem still cannot be solved? Please contact us for assistance.	Yes or No

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