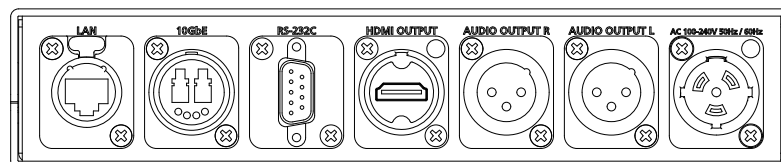
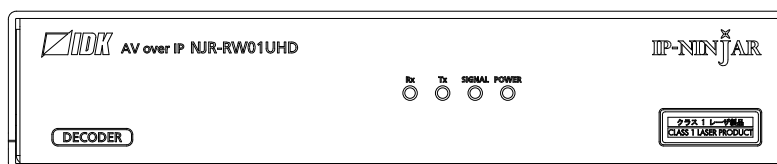
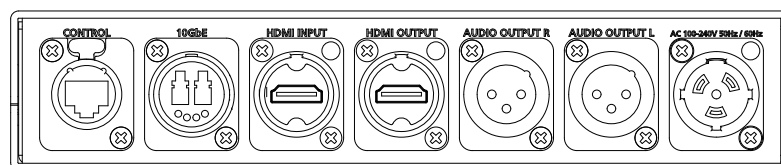
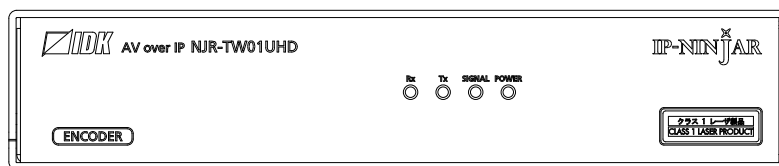


4K@60/HDCP 2.2 AV HDMI Network Extender, Rugged Chassis

NJR-TW01UHD/NJR-RW01UHD

<Command Reference Guide>

Ver.1.0.0



- 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

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- 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 Command guide such as exact product appearance, diagrams, menu operations, communication commands, and so on may differ depending on the product version.
- This Command guide is subject to change without notice. You can download the latest version from IDK's website at: <http://www.idkav.com>

The reference manual consists of the following two volumes:

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

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1 How to read this Guide

This guide explains commands for the NJR-W01UHD.

■ LAN model and RS-232C model

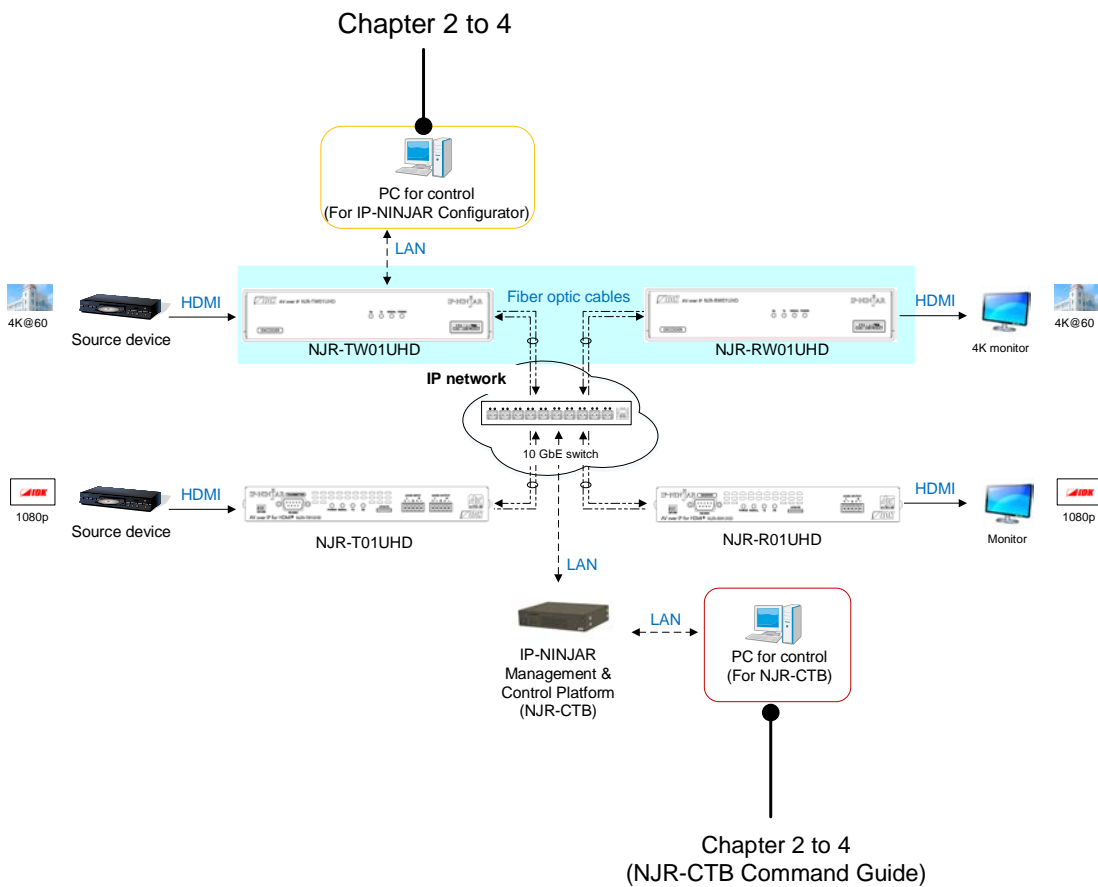
Cable	NJR-TW01UHD		NJR-RW01UHD
	Control	Model	Model
Multimode fiber	RS-232C	NJR-TW01UHD-MM-232	NJR-RW01UHD-MM
	LAN	NJR-TW01UHD-MM-LAN	
Singlemode fiber	RS-232C	NJR-TW01UHD-SM-232	NJR-RW01UHD-SM
	LAN	NJR-TW01UHD-SM-LAN	

The NJR-TW01UHD LAN models and NJR-RW01UHD control commands from IP-NINJAR Configurator or NJR-CTB via LAN.

The both NJR-TW01UHD and NJR-RW01UHD do not support command control of RS-232C communication. The RS-232C communication is for command transmission (pass through).

Perform command control of NJR-TW01UHD (RS-232C model) from NJR-RW01UHD or IP-NINJAR device connected to 10 GbE switch.

For other products of IP-NINJAR series, see “[Table 1.1] Document for IP-NINJAR products”.



[Fig. 1.1] Document structure

[Table 1.1] Document for IP-NINJAR products

Model	User Guide	Command Guide
NJR-T01UHD/NJR-R01UHD	NJR-T01UHD/NJR-R01UHD User Guide	NJR-T01UHD/NJR-R01UHD Command Guide
NJR-TW01UHD/NJR-RW01UHD	NJR-TW01UHD/NJR-RW01UHD User Guide	NJR-TW01UHD/NJR-RW01UHD Command Guide
NJR-T01SDI	NJR-T01SDI User Guide	NJR-T01SDI Command Guide
NJR-T04HD/NJR-R04HD	NJR-T04HD/NJR-R04HD User Guide	NJR-T04HD/NJR-R04HD Command Guide
NJR-AB08DAN	NJR-AB08DAN User Guide/Command Guide	
NJR-CTB	NJR- CTB User Guide	NJR- CTB Command Guide
IP-NINJAR Configurator	IP-NINJAR Configurator User Guide	

2 About this Guide

Communication commands enable the following main operations:

- Setting input, output
- Setting audio
- Setting EDID
- Displaying information

3 Communication configuration and Specifications

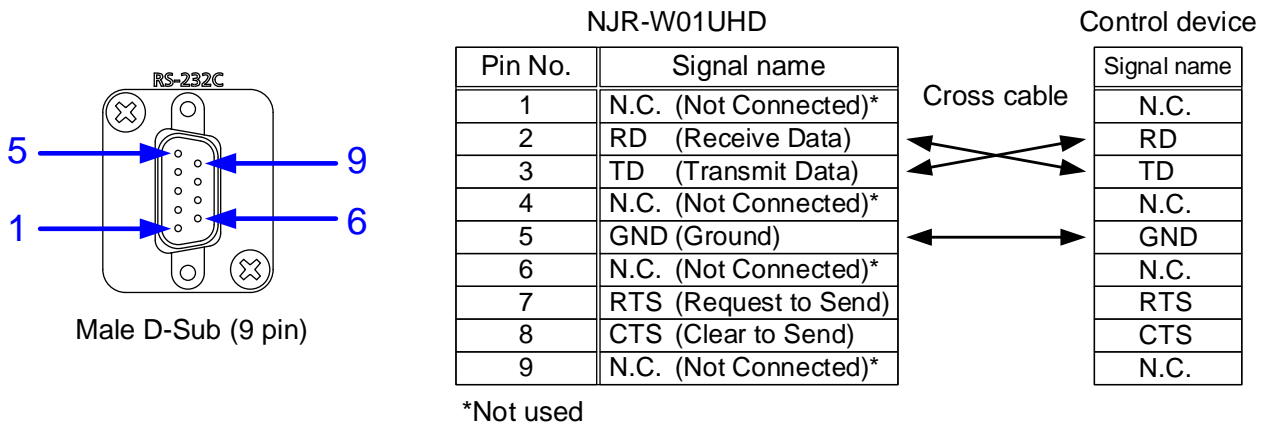
3.1 RS-232C communication

The NJR-TW01UHD (RS-232C model) and NJR-RW01UHD support command transmission (pass through) via RS-232C communication.

[4.5.2.5 Setting RS-232C]

3.1.1 RS-232C connector specification

RS-232C pin assignments:



[Fig. 3.1] RS-232C connector

3.1.2 RS-232C communication specification

[Table 3.1] RS-232C specification

Compliant standard	RS-232C
Baud rate	9600 [bps]
Data bit length	8 [bit]
Parity check	None
Stop bit	1 [bit]
X parameter	Invalid
Flow control	None
Communication method	Full duplex

3.2 LAN communication

The NJR-TW01UHD (LAN model) and NJR-RW01UHD can be controlled from IP-NINJAR Configurator or NJR-CTB via LAN.

Make sure not to form a loop by the NJR-TW01UHD (LAN model)/NJR-RW01UHD when connecting a LAN cable to the NJR-TW01UHD (LAN model)/NJR-RW01UHD.

The NJR-TW01UHD (LAN model)/NJR-RW01UHD constantly send broadcast packet in order to notify status.

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

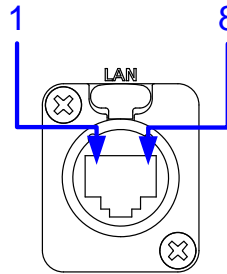
Note:

The terminal software cannot be used.

3.2.1 LAN connector specification

Pin assignment of the LAN connector is 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-TW01UHD (LAN model)/NJR-RW01UHD to PC, HUB or the like.



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. 3.2] LAN connector

3.2.2 LAN communication specification

[Table 3.2] Specification of LAN communication

Physical layer	10Base-T (IEEE802.3i)/100Base-TX (IEEE802.3u)/ 1000Base-T (IEEE802.3ab)
Network layer	ARP, IP, ICMP
Transport layer	UDP

3.3 Controlled by IP-NINJAR Configurator

The NJR-W01UHD can be controlled from IP-NINJAR Configurator by connecting a control device to the NJR-TW01UHD (LAN model) or NJR-RW01UHD via a LAN cable.

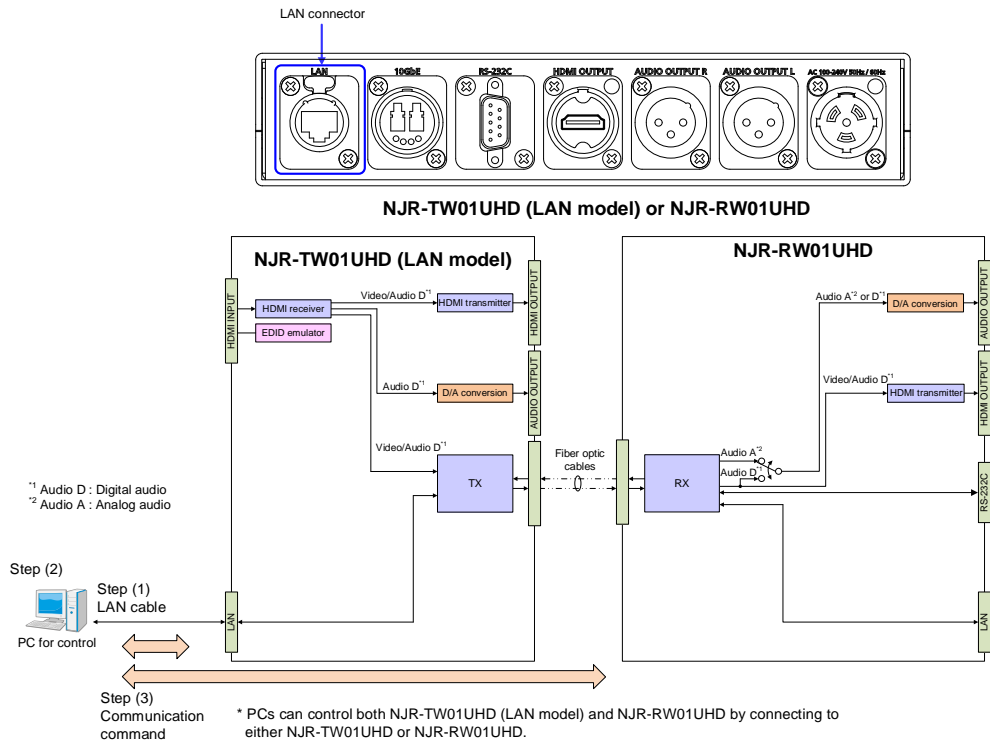
Control the NJR-TW01UHD (RS-232C model) using the IP-NINJAR Configurator from NJR-RW01UHD or IP-NINJAR device connected to 10 GbE switch.

For operations from the IP-NINJAR Configurator, refer to the User Guide of IP-NINJAR Configurator. The IP-NINJAR Configurator can be downloaded from <http://www.idkav.com>

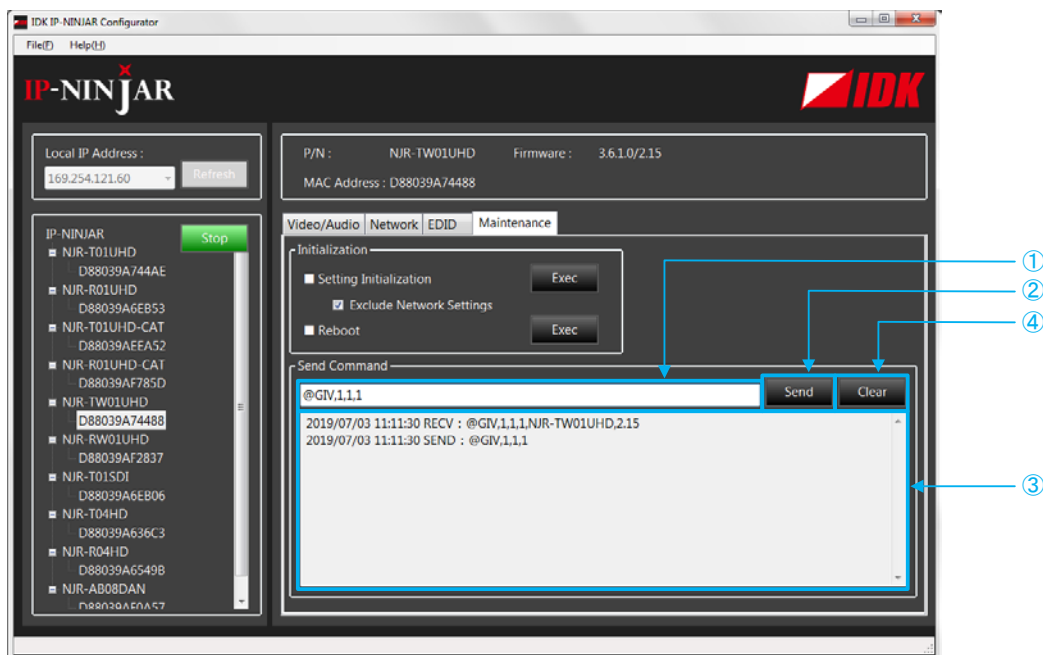
3.3.1 Setting LAN communication

Follow the procedure below to control the NJR-TW01UHD (LAN model) or NJR-RW01UHD:

- (1) Connect the control device to the LAN connector of the NJR-TW01UHD (LAN model) or NJR-RW01UHD through a LAN cable
- (2) Start the IP-NINJAR Configurator in the control device
- (3) Send communication command from the Maintenance page of the IP-NINJAR Configurator
You can control the NJR-TW01UHD (LAN model) or NJR-RW01UHD and get the status information using communication command



[Fig. 3.3] LAN communication setup



- ① For entering the desired command
- ② For sending the command to NJR-TW01UHD or NJR-RW01UHD
- ③ For displaying the log
- ④ For deleting the log

[Fig. 3.4] Command input from Maintenance page

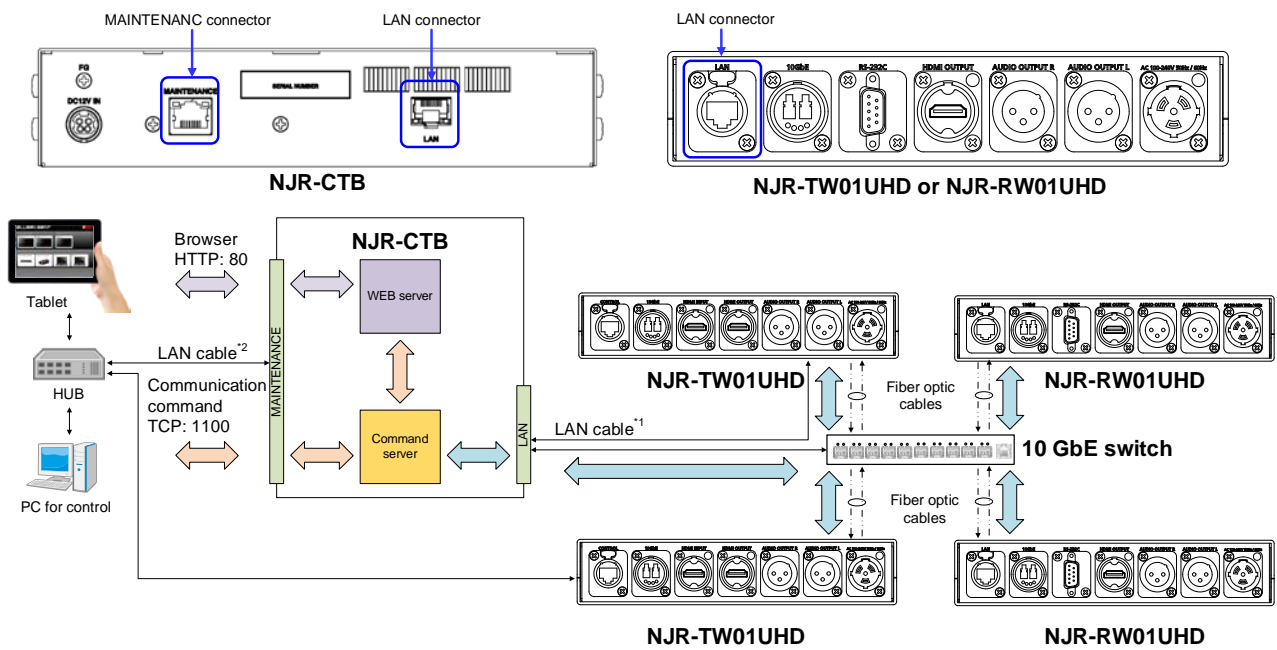
3.4 External control from NJR-CTB

Connect a control device to the NJR-CTB via a LAN cable to control the NJR-W01UHD using communication commands.

Control the NJR-TW01UHD (RS-232C model) using the NJR-CTB from NJR-RW01UHD or IP-NINJAR device connected to 10 GbE switch.

Control the NJR-TW01UHD (RS-232C model) using the IP-NINJAR Configurator from NJR-RW01UHD or IP-NINJAR device connected to 10 GbE switch.

For operations from the NJR-CTB, refer to the Command Guide of NJR-CTB.



¹ The LAN connector of NJR-CTB should be connected to the LAN connector of NJR-TW01UHD (LAN model)/NJR-RW01UHD or the 10 GbE switch

² PC for control should be connected to the MAINTENANCE connector of NJR-CTB or the LAN connector of NJR-TW01UHD (LAN supported model)/NJR-RW01UHD

[Fig. 3.5] Connecting to NJR-CTB

4 Command

4.1 Summary

A command consists of "@" ("40" in hexadecimal), 3 or 4 one-byte alphabetical characters (upper and lower cases) followed by parameters (one-byte numbers). For some commands, multiple parameter values can be specified. Processing is executed by sending a delimiter at the end of the command.

Example: @SDT,1,1,1,10000 ↵

"," (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 response is returned if an undefined command or inappropriate parameter is included.

Example: @SDT,1 ↵
 @ERR,1 ↵

■ Using as HELP

If only delimiter is sent, command list as the help command is returned.

Example: ↵

```

----- HELP (1/2) ----- ↵
(INPUT SETTING Command) ↵
@GDT / @SDT : Getting/Setting No-signal input monitoring ↵
                Signal Detect Time ↵
@GHE / @SHE : Getting/Setting HDCP input enabled/disabled ↵
↵
(OUTPUT SETTING Command) ↵
@GDM / @SDM : Getting/Setting Output mode ↵
↵
(AUDIO Command) ↵
@GAM / @SAM : Getting mute status of digital audio output ↵
                Muting/unmuting digital audio output ↵
-----

```

4.2 Command list

■ Error status

Command	Function	Page
@ERR	Error status	20

■ Setting input

Command	Function	Page
@GDT / @SDT	No-signal input monitoring	21
@GHE / @SHE	HDCP input enabled/disabled	22

■ Setting output

Command	Function	Page
@GDM / @SDM	Output mode	23
@GEN / @SEN	HDCP output	24
@GHM / @SHM	Hot plug ignoring duration	25

■ Setting Audio

Command	Function	Page
@GAM / @SAM	Muting/unmuting digital audio output	26
@GAAS / @SAAS	Output audio	27

■ Setting EDID

Command	Function	Page
@GVF / @SVF	EDID resolution	28
@RME	Copying EDID	29
@GWX / @SWX	Selecting WXGA mode	29
@GDI / @SDI	Deep Color input	30
@GAF / @SAF	Audio format	31
@GSP / @SSP	Speaker configuration	32

■ Setting RS-232C

Command	Function	Page
@GCTB / @SCTB	RS-232C communication	34

■ Setting LAN

Command	Function	Page
@GIP / @SIP	LAN	35
@GMC	MAC address	36

■ Advanced setting

Command	Function	Page
@CLRC	Initialization	37
@RBTC	Reboot	37

■ **Information**

Command	Function	Page
@GSS	I/O status	38
@GES	Monitor EDID	41
@GIV	Version	43

4.3 Setting items

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

[Table 4.1] Available setting method

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

Command	Setting method	
	NJR-TW01UHD NJR-RW01UHD	NJR-CTB
	LAN (IP-NINJAR Configurator)	LAN
Setting input		
@GDT / @SDT	Command	WEB&C
@GHE / @SHE	Command	WEB&C
Setting output		
@GDM / @SDM	Command	WEB&C
@GEN / @SEN	Command	WEB&C
@GHM / @SHM	Command	WEB&C
Setting Audio		
@GAM / @SAM	Command	WEB&C
@GAAS / @SAAS	GUI	WEB&C
Setting EDID		
@GVF / @SVF	Command	WEB&C
@RME	Command	WEB&C
@GWX / @SWX	Command	WEB&C
@GDI / @SDI	Command	WEB&C
@GAF / @SAF	Command	WEB&C
@GSP / @SSP	Command	WEB&C
Setting RS-232C		
@GCTB / @SCTB	GUI	WEB&C
Setting LAN		
@GIP / @SIP	GUI	WEB&C
@GMC	GUI	WEB&C
Advanced setting		
@CLRC	GUI	WEB&C
@RBTC	GUI	WEB&C
Information		
@GSS	Command	WEB&C
@GES	Command	WEB&C
@GIV	Command	WEB&C


4.4 Parameter input format

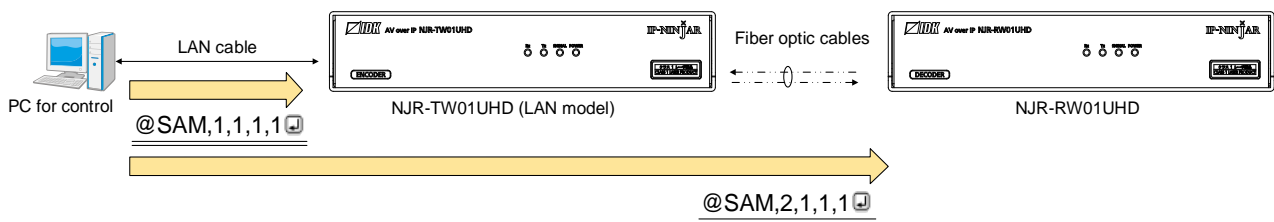
Parameter input formats are common for each setting.

If a command is input from the LAN connector of the NJR-TW01UHD (LAN model) or NJR-RW01UHD using the IP-NINJAR Configurator, “1” (fixed) is specified to “ch” (channel) because only one NJR-TW01UHD (LAN model) or NJR-RW01UHD can be controlled.

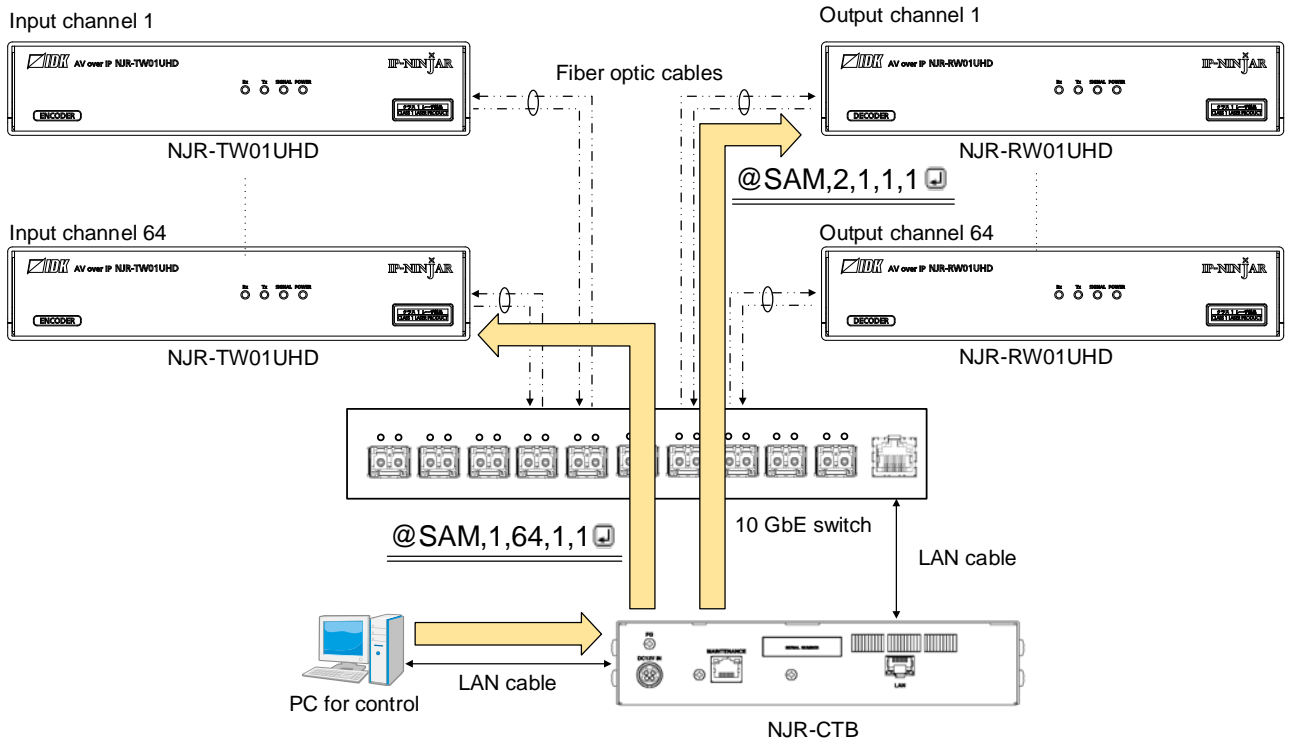
If a command is input from the NJR-CTB, any channel can be specified because multiple NJR-W01UHD devices that are connected over a network switch can be controlled.

Example:

Format	@SAM, device, ch, port, mute 
Parameter	device: Model 1 = NJR-TW01UHD, 2 = NJR-RW01UHD
	ch: Channel 1 to 512 = Channel 1 to Channel 512 If a command is input from the IP-NINJAR Configurator, “1” is set (fixed).
	port: Connector “1” fixed
	mute: Audio mute 0 = Mute OFF [Default], 1 = Mute ON






[Fig. 4.1] Command input from IP-NINJAR Configurator



[Fig. 4.2] Command input from NJR-CTB

4.5 Details of commands

4.5.1 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 3 = Currently cannot be used 99 = Error other than errors above
Getting example	Command	@GAM 
	Response	@ERR,1 
	Description	Sending @GAM command Parameter error
Remarks		—

4.5.2 Basic setting

4.5.2.1 Setting input

@GDT / @SDT		No-signal input monitoring
Getting	Command	@GDT, device, ch, port ↵
	Response	@GDT, device, ch, port, time ↵
Setting	Command	@SDT, device, ch, port, time ↵
	Response	@SDT, device, ch, port, time ↵
Parameter		device: Model "1" fixed ch: Input setting 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the IP-NINJAR Configurator, "1" is set (fixed). port: Input connector "1" fixed time: No-signal input monitoring 0 = OFF, 2000 to 15000 = 2 sec. to 15 sec. [Default] 10000 = 10 sec Set the value by 1000 ms. If you set a value other than 0 for the lower 3 digits, these values will be rounded down. (For example, if you set it to 2955, the monitoring time is set to 2000 ms.)
Getting example	Command	@GDT,1,1,1 ↵
	Response	@GDT,1,1,1,6000 ↵
	Description	Getting the no-signal input monitoring of Channel 1 6000 ms. (6 seconds)
Setting example	Command	@SDT,1,1,1,6000 ↵
	Response	@SDT,1,1,1,6000 ↵
	Description	Setting the no-signal monitoring of Channel 1 to 6000 ms. (6 seconds) Completed
Remarks		The NJR-RW01UHD does not support this command.

@GHE / @SHE		HDCP input enabled/disabled
Getting	Command	@GHE, device, ch, port ↵
	Response	@GHE, device, ch, port, hdcp ↵
Setting	Command	@SHE, device, ch, port, hdcp ↵
	Response	@SHE, device, ch, port, hdcp ↵
Parameter		device: Model "1" fixed ch: Input setting 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the IP-NINJAR Configurator, "1" is set (fixed). port: Input connector "1" fixed hdcp: HDCP input enabled/disabled 0 = DISABLE, 1 = ENABLE [Default]
Getting example	Command	@GHE,1,1,1 ↵
	Response	@GHE,1,1,1,0 ↵
	Description	Getting the HDCP input enabled/disabled of Channel 1 HDCP disabled
Setting example	Command	@SHE,1,1,1,0 ↵
	Response	@SHE,1,1,1,0 ↵
	Description	Disabling HDCP input of Channel 1 Completed
Remarks		The NJR-RW01UHD does not support this command.

4.5.2.2 Setting output

@GDM / @SDM		Output mode
Getting	Command	@GDM, device, ch, reserved ↵
	Response	@GDM, device, ch, reserved, mode_1 (, mode_2) ↵
Setting	Command	@SDM, device, ch, port, mode ↵
	Response	@SDM, device, ch, port, mode ↵
Parameter		device: Model 1 = NJR-TW01UHD, 2 = NJR-RW01UHD ch: Channel 1 to 512 = Channel 1 to Channel 512 If a command is input from the IP-NINJAR Configurator, "1" is set (fixed). reserved: Reservation "1" fixed port: Output connector NJR-TW01UHD: 0 = All outputs, 1 = Output connector for extension, 2 = HDMI output connector NJR-RW01UHD: 1 = HDMI output connector mode_1 to mode_2, mode: Output mode 0 = AUTO [Default], 1 = DVI output, 2 = RGB output, 3 = YCbCr4:2:2 output, 4 = YCbCr4:4:4 output, 5 = YCbCr4:2:0 output NJR-TW01UHD: mode_1 = Output connector for extension, mode_2 = HDMI output connector NJR-RW01UHD: mode_1 = HDMI output connector
Getting example	Command	@GDM,1,1,1 ↵
	Response	@GDM,1,1,1,0,4 ↵
	Description	Getting the output mode of the NJR-TW01UHD Channel 1 Output connector for extension: AUTO, HDMI output connector : YCbCr4:4:4 output
Getting example	Command	@GDM,2,1,1 ↵
	Response	@GDM,2,1,1,0 ↵
	Description	Getting the output mode of NJR-RW01UHD Channel 1 AUTO
Setting example	Command	@SDM,1,1,2,4 ↵
	Response	@SDM,1,1,2,4 ↵
	Description	Setting the output mode of Channel1's HDMI output connector (NJR-TW01UHD) to YCbCr4:4:4 output Completed
Remarks		—

@GEN / @SEN		HDCP output
Getting	Command	@GEN, device, ch, reserved ↵
	Response	@GEN, device, ch, reserved, hdcp ↵
Setting	Command	@SEN, device, ch, port, hdcp ↵
	Response	@SEN, device, ch, port, hdcp ↵
Parameter		device: Model "2" fixed
		ch: Channel 1 to 512 = Channel 1 to Channel 512 If a command is input from the IP-NINJAR Configurator, "1" is set (fixed).
		reserved: Reservation "1" fixed
		port: Output connector "1" fixed
		hdcp: HDCP output 1 = ALWAYS [Default], 2 = HDCP INPUT ONLY, 3 = HDCP 2.2
Getting example	Command	@GEN,2,1,1 ↵
	Response	@GEN,2,1,1,1 ↵
	Description	Getting the HDCP output of NJR-RW01UHD Channel 1 ALWAYS
Setting example	Command	@SEN,2,1,1,2 ↵
	Response	@SEN,2,1,1,2 ↵
	Description	Setting the HDCP output of NJR-RW01UHD Channel 1 to HDCP INPUT ONLY Completed
Remarks		The NJR-TW01UHD does not support this command.

@GHM / @SHM		Hot plug ignoring duration
Getting	Command	@GHM, device, ch, reserved [↵]
	Response	@GHM, device, ch, reserved, time [↵]
Setting	Command	@SHM, device, ch, port, time [↵]
	Response	@SHM, device, ch, port, time [↵]
Parameter		device: Model 1 = NJR-TW01UHD, 2 = NJR-RW01UHD
		ch: Channel 1 to 512 = Channel 1 to Channel 512 If a command is input from the IP-NINJAR Configurator, "1" is set (fixed).
		reserved: Reservation "1" fixed
		port: Output connector NJR-TW01UHD: "2" fixed NJR-RW01UHD: "1" fixed
		Time: Masking time 0 = OFF (Not ignoring request signals) [Default], 2000 to 15000 = 2 sec. to 15 sec. Set the value by 1000 ms. If you set a value other than 0 for the lower 3 digits, these values will be rounded down. (For example, if you set it to 2955, the monitoring time is set to 2000 ms.)
Getting example	Command	@GHM,1,1,2 [↵]
	Response	@GHM,1,1,2,0 [↵]
	Description	Getting the hot plug ignoring duration of NJR-TW01UHD Channel 1 OFF (Not ignoring request signals)
Getting example	Command	@GHM,2,1,1 [↵]
	Response	@GHM,2,1,1,2000 [↵]
	Description	Getting the hot plug ignoring duration of NJR-RW01UHD Channel 1 For 2 seconds
Setting example	Command	@SHM,2,1,1,0 [↵]
	Response	@SHM,2,1,1,0 [↵]
	Description	Setting the hot plug ignoring duration of NJR-RW01UHD Channel 1 to OFF Completed
Remarks		—

4.5.2.3 Setting Audio

@GAM / @SAM		Muting/unmuting digital audio output
Getting	Command	@GAM, device, ch, port ↵
	Response	@GAM, device, ch, port, mute ↵
Setting	Command	@SAM, device, ch, port, mute ↵
	Response	@SAM, device, ch, port, mute ↵
Parameter		device: Model 1 = NJR-TW01UHD, 2 = NJR-RW01UHD ch: Channel 1 to 512 = Channel 1 to Channel 512 If a command is input from the IP-NINJAR Configurator, "1" is set (fixed). port: Connector "1" fixed mute: Audio mute 0 = Mute OFF [Default], 1 = Mute ON
Getting example	Command	@GAM,1,1,1 ↵
	Response	@GAM,1,1,1,0 ↵
	Description	Getting the audio mute of NJR-TW01UHD Channel 1 Mute OFF
Setting example	Command	@SAM,1,1,1,0 ↵
	Response	@SAM,1,1,1,0 ↵
	Description	Setting the audio mute of NJR-TW01UHD Channel 1 to OFF Completed
Remarks		—

@GAAS / @SAAS		Output audio
Getting	Command	@GAAS, device, ch, reserved
	Response	@GAAS, device, ch, reserved, analog, digital
Setting	Command	@SAAS, device, ch, reserved, analog, digital
	Response	@SAAS, device, ch, reserved, analog, digital
Parameter		device: Model "2" fixed ch: Channel 1 to 512 = Channel 1 to Channel 512 reserved: Reservation "1" fixed analog: Analog audio output connector 0 = Analog input audio [Default], 1 = Digital input audio digital: Digital audio output connector 0 = Analog input audio, 1 = Digital input audio [Default]
Getting example	Command	@GAAS,2,1,1
	Response	@GAAS,2,1,1,0,1
	Description	Getting the output audio of Channel 1 Analog input audio is output from the analog audio output connector
Setting example	Command	@SAAS,2,1,1,0,1
	Response	@SAAS,2,1,1,0,1
	Description	Setting analog input audio to be output from the analog audio output connector of Channel 1 Completed
Remarks		The NJR-TW01UHD does not support this command. This command can be input only via the NJR-CTB command server.

4.5.2.4 Setting EDID

@GVF / @SVF		EDID resolution
Getting	Command	@GVF, device, ch, port ↵
	Response	@GVF, device, ch, port, resolution ↵
Setting	Command	@SVF, device, ch, port, resolution ↵
	Response	@SVF, device, ch, port, resolution ↵
Parameter		device: Model "1" fixed ch: Input setting 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the IP-NINJAR Configurator, "1" is set (fixed). port: Input connector "1" fixed resolution: EDID resolution 1 = Copied EDID1, 5 = 1080p@50/59.94/60 (1920x1080), 6 = 720p@50/59.94/60 (1280x720), 7 = 1080i@50/59.94/60 (1920x1080), 10 = SVGA (800x600), 11 = XGA (1024x768), 12 = VESA720 (1280x720), 13 = WXGA (1280x768), 14 = WXGA (1280x800), 15 = Quad-VGA (1280x960), 16 = SXGA (1280x1024), 17 = WXGA (1360x768/1366x768), 18 = SXGA+ (1400x1050), 19 = WXGA+ (1440x900), 20 = WXGA++ (1600x900), 21 = UXGA (1600x1200), 22 = WSXGA+ (1680x1050), 23 = VESA1080 (1920x1080), 24 = WUXGA (1920x1200), 25 = QWXGA (2048x1152), 26 = WQHD (2560x1440), 27 = WQXGA (2560x1600), 43 = 2160p@50/59.94/60 - 4:2:0 (3840x2160), 44 = 4096x2160@50/59.94/60 - 4:2:0, 45 = 2160p@50/59.94/60 - 4:4:4 (3840x2160) [Default], 46 = 4096x2160@50/59.94/60 - 4:4:4
Getting example	Command	@GVF,1,1,1 ↵
	Response	@GVF,1,1,1,24 ↵
	Description	Getting the EDID resolution of Channel 1 WUXGA
Setting example	Command	@SVF,1,1,1,24 ↵
	Response	@SVF,1,1,1,24 ↵
	Description	Setting the EDID resolution of Channel 1 to WUXGA Completed
Remarks		The NJR-RW01UHD does not support this command. Select EDID of 1360x768 and 1366x768 using " @GWX / @SWX Selecting WXGA mode ".

@RME		Copying EDID
Setting	Command	@RME, device, ch, reserved, number ↵
	Response	@RME, device, ch, reserved, number ↵
Parameter		device: Model "1" fixed ch: Input setting 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the IP-NINJAR Configurator, "1" is set (fixed). reserved: Reservation "1" fixed number: Destination of the copied data to save "0" fixed
Setting example	Command	@RME,1,1,1,0 ↵
	Response	@RME,1,1,1,0 ↵
	Description	Copying EDID of the sink device that is connected to the HDMI output connector of the NJR-TW01UHD Completed
Remarks		The NJR-RW01UHD does not support this command.

@GWX / @SWX		Selecting WXGA mode
Getting	Command	@GWX, device, ch, port ↵
	Response	@GWX, device, ch, port, mode ↵
Setting	Command	@SWX, device, ch, port, mode ↵
	Response	@SWX, device, ch, port, mode ↵
Parameter		device: Model "1" fixed ch: Input setting 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the IP-NINJAR Configurator, "1" is set (fixed). port: Input connector "1" fixed mode: Selecting WXGA mode 0 = 1360x768 [Default], 1 = 1366x768
Getting example	Command	@GWX,1,1,1 ↵
	Response	@GWX,1,1,1,0 ↵
	Description	Getting the WXGA mode of Channel 1 1360x768
Setting example	Command	@SWX,1,1,1,0 ↵
	Response	@SWX,1,1,1,0 ↵
	Description	Setting the WXGA mode of Channel 1 to 1360x768 Completed
Remarks		The NJR-RW01UHD does not support this command.

@GDI / @SDI		Deep Color input
Getting	Command	@GDI, device, ch, port ↵
	Response	@GDI, device, ch, port, color ↵
Setting	Command	@SDI, device, ch, port, color ↵
	Response	@SDI, device, ch, port, color ↵
Parameter		device: Model "1" fixed ch: Input setting 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the IP-NINJAR Configurator, "1" is set (fixed). port: Input connector "1" fixed color: Color depth 0 = 24-BIT COLOR [Default], 1 = 30-BIT COLOR, 2 = 36-BIT COLOR
Getting example	Command	@GDI,1,1,1 ↵
	Response	@GDI,1,1,1,0 ↵
	Description	Getting the color depth of Channel 1 24-BIT COLOR
Setting example	Command	@SDI,1,1,1,0 ↵
	Response	@SDI,1,1,1,0 ↵
	Description	Setting the color depth of Channel 1 to 24-BIT COLOR Completed
Remarks		The NJR-RW01UHD does not support this command.

@GAF / @SAF		Audio format																
Getting	Command	@GAF, device, ch, port																
	Response	@GAF, device, ch, port, format_1, frequency_1 (, format_2, frequency_2···)																
Setting	Command	@SAF, device, ch, port, format_1, frequency_1 (, format_2, frequency_2···)																
	Response	@SAF, device, ch, port, format_1, frequency_1 (, format_2, frequency_2···)																
Parameter		<p>device: Model "1" fixed</p> <p>ch: Input setting 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the IP-NINJAR Configurator, "1" is set (fixed).</p> <p>port: Input connector "1" fixed</p> <p>format_1 to format_7: Audio format 0 = PCM, 1 = Dolby Digital, 2 = AAC, 3 = Dolby Digital+, 4 = DTS, 5 = DTS-HD, 6 = Dolby TrueHD [Default] Only PCM can be output</p> <p>frequency_1 to frequency_7: Maximum sampling frequency 0 = OFF, 1 = 32 kHz, 2 = 44.1 kHz, 3 = 48 kHz, 4 = 88.2 kHz, 5 = 96 kHz, 6 = 176.4 kHz, 7 = 192 kHz [Default] PCM: 48 kHz; others: OFF "OFF": Only setting command (@SAF) can be used The selectable maximum sampling frequency depends on audio format.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Audio format</th> <th style="width: 50%;">Maximum sampling frequency (kHz)</th> </tr> </thead> <tbody> <tr> <td>PCM</td> <td>32/44.1/48/88.2/96/176.4/192</td> </tr> <tr> <td>Dolby Digital</td> <td>OFF/32/44.1/48</td> </tr> <tr> <td>AAC</td> <td>OFF/32/44.1/48/88.2/96</td> </tr> <tr> <td>Dolby Digital+</td> <td>OFF/32/44.1/48</td> </tr> <tr> <td>DTS</td> <td>OFF/32/44.1/48/96</td> </tr> <tr> <td>DTS-HD</td> <td>OFF/44.1/48/88.2/96/176.4/192</td> </tr> <tr> <td>Dolby TrueHD</td> <td>OFF/44.1/48/88.2/96/176.4/192</td> </tr> </tbody> </table> <p>Getting commands: the set audio formats and maximum sampling frequency is returned Setting commands: send the desired audio formats and the maximum sampling frequencies</p>	Audio format	Maximum sampling frequency (kHz)	PCM	32/44.1/48/88.2/96/176.4/192	Dolby Digital	OFF/32/44.1/48	AAC	OFF/32/44.1/48/88.2/96	Dolby Digital+	OFF/32/44.1/48	DTS	OFF/32/44.1/48/96	DTS-HD	OFF/44.1/48/88.2/96/176.4/192	Dolby TrueHD	OFF/44.1/48/88.2/96/176.4/192
Audio format	Maximum sampling frequency (kHz)																	
PCM	32/44.1/48/88.2/96/176.4/192																	
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AAC	OFF/32/44.1/48/88.2/96																	
Dolby Digital+	OFF/32/44.1/48																	
DTS	OFF/32/44.1/48/96																	
DTS-HD	OFF/44.1/48/88.2/96/176.4/192																	
Dolby TrueHD	OFF/44.1/48/88.2/96/176.4/192																	
Getting example	Command	@GAF,1,1,1																
	Response	@GAF,1,1,1,0,7																
	Description	Getting the audio format that can be output to Channel 1 Up to PCM 192 kHz																
Setting example	Command	@SAF,1,1,1,4,3																
	Response	@SAF,1,1,1,4,3																
	Description	Setting Channel 1 to output audio up to PCM and DTS 48 kHz (The maximum PCM sampling frequency is not changed.) Completed																
Remarks		The NJR-RW01UHD does not support this command.																

@GSP / @SSP		Speaker configuration																																																																																																																					
Getting	Command	@GSP, device, ch, port <input type="text"/>																																																																																																																					
	Response	@GSP, device, ch, port, number, speaker_1 (, speaker_2···) <input type="text"/>																																																																																																																					
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Parameter		device: Model "1" fixed																																																																																																																					
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		port: Input connector "1" fixed																																																																																																																					
		number: The number of speakers 1 to 8 [Default] 2																																																																																																																					
		speaker_1 to speaker_8: Speakers to be used 0 = Front Left/Right [Default], 1 = Low Frequency Effect, 2 = Front Center, 3 = Rear Left/Right, 4 = Rear Center, 5 = Front Left/Right Center, 6 = Rear Left/Right Center, 7 = Front Left/Right Wide, 8 = Front Left/Right High, 9 = Top Center, 10 = Front Center High																																																																																																																					
		Getting commands : the number of speakers and which speakers will be used is returned Setting commands : if you do not specify the speaker configuration, the following configuration will be applied depending on the set number of speakers																																																																																																																					
		<table border="1"> <thead> <tr> <th rowspan="2">number</th> <th colspan="11">speaker</th> </tr> <tr> <th>0</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> <th>9</th> <th>10</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>OFF</td> <td>OFF</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>2</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>3</td> <td>ON</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>4</td> <td>ON</td> <td>ON</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>5</td> <td>ON</td> <td>ON</td> <td>OFF</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>6</td> <td>ON</td> <td>ON</td> <td>ON</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>7</td> <td>ON</td> <td>ON</td> <td>ON</td> <td>ON</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>8</td> <td>ON</td> <td>ON</td> <td>ON</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> </tbody> </table>	number	speaker											0	1	2	3	4	5	6	7	8	9	10	1	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	2	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	4	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	5	ON	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	6	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	7	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	8	ON	ON	ON	ON	OFF	OFF	ON	OFF	OFF
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2	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF																																																																																																												
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8	ON	ON	ON	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF																																																																																																												
		The specified <i>number</i> and the total number of speakers do not match, the <i>number</i> is set automatically based on the setting of speakers to be used. In case the <i>number</i> exceeds the settable range, an error is returned.																																																																																																																					

@GSP / @SSP		Speaker configuration (Cont'd)
Getting example	Command	@GSP,1,1,1 ↵
	Response	@GSP,1,1,1,6,0,1,2,3 ↵
	Description	Getting the speaker configuration of Channel 1 Six speakers are used: Front Left/Right, Low Frequency Effect, Front Center, Rear Left/Right
Setting example	Command	@SSP,1,1,1,8 ↵
	Response	@SSP,1,1,1,8 ↵
	Description	Assign eight speakers to Channel 1: Front Left/Right, Low Frequency Effect, Front Center, Rear Left/Right, Rear Left/Right Center Completed
Setting example	Command	@SSP,1,1,1,8,0,3,5,6,7 ↵
	Response	@ERR,1 ↵
	Description	Assign ten speakers to Channel 1: Front Left/Right, Rear Left/Right, Front Left/Right Center, Rear Left/Right Center, Front Left/Right Wide The number of speakers exceeds the settable value
Remarks		The NJR-RW01UHD does not support this command.

4.5.2.5 Setting RS-232C

@GCTB / @SCTB		RS-232C communication
Getting	Command	@GCTB, device, ch, reserved ↵
	Response	@GCTB, device, ch, reserved, baudrate, databit, stopbit, parity ↵
Setting	Command	@SCTB, device, ch, reserved, baudrate, databit, stopbit, parity ↵
	Response	@SCTB, device, ch, reserved, baudrate, databit, stopbit, parity ↵
Parameter		device: Model 1 = NJR-TW01UHD (RS-232C model), 2 = NJR-RW01UHD ch: Channel 1 to 512 = Channel 1 to Channel 512 reserved: Reservation "1" fixed baudrate: Baud rate 0 = 4800 bps, 1 = 9600 bps [Default], 2 = 19200 bps, 3 = 38400 bps, 4 = 57600 bps, 5 = 115200 bps databit: Data bit length 7 = 7 bit, 8 = 8 bit [Default] stopbit: Stop bit 1 = 1 bit [Default], 2 = 2 bit parity: Parity check 0 = NONE [Default], 1 = ODD, 2 = EVEN
Getting example	Command	@GCTB,1,1,1 ↵
	Response	@GCTB,1,1,1,4,8,1,0 ↵
	Description	Getting the RS-232C communication setting of NJR-TW01UHD (RS-232C model) Channel 1 - Baud rate : 57600 bps - Data bit length : 8 bit - Stop bot : 1 bit - Parity check : NONE
Setting example	Command	@SCTB,1,1,1,4,8,1,0 ↵
	Response	@SCTB,1,1,1,4,8,1,0 ↵
	Description	Setting the RS-232C communication setting of NJR-TW01UHD (RS-232C model) Channel 1 as follows: - Baud rate : 57600 bps - Data bit length : 8 bit - Stop bot : 1 bit - Parity check : NONE Completed
Remarks		This command can be input only via the NJR-CTB command server. Values for the control mode are fixed and cannot be changed.

4.5.2.6 Setting LAN

@GIP / @SIP		LAN
Getting	Command	@GIP, device, ch, reserved ↵
	Response	@GIP, device, ch, reserved, mode, ip, mask, gateway ↵
Setting	Command	@SIP, device, ch, reserved, mode, ip, mask, gateway ↵
	Response	@SIP, device, ch, reserved, mode, ip, mask, gateway ↵
Parameter		device: Model 1 = NJR-TW01UHD (LAN model), 2 = NJR-RW01UHD ch: Channel 1 to 512 = Channel 1 to Channel 512 reserved: Reservation "1" fixed mode: Mode 0 = Automatic (DHCP) [Default], 1 = Static "0" is selected, the following three parameters will be invalid. ip: IP address 0 to 255 = 8 bit (in decimal) x 4 combinations [Default] Getting automatically mask: Subnet mask 0 to 255 = 8 bit (in decimal) x 4 combinations [Default] Getting automatically gateway: Default gateway 0 to 255 = 8 bit (in decimal) x 4 combinations [Default] Getting automatically
Getting example	Command	@GIP,1,1,1 ↵
	Response	@GIP,1,1,1,1,192.168.3.2,255.255.255.0,192.168.3.254 ↵
	Description	Getting the LAN setting of NJR-TW01UHD (LAN model) 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	@SIP,1,1,1,1,192.168.3.2,255.255.255.0,192.168.3.254 ↵
	Response	@SIP,1,1,1,1,192.168.3.2,255.255.255.0,192.168.3.254 ↵
	Description	Setting the LAN setting of NJR-TW01UHD (LAN model) Channel 1 as follows: - Mode : Static - IP address : 192.168.3.2 - Subnet mask : 255.255.255.0 - Default gateway : 192.168.3.254 Completed
Remarks		This command can be input only via the NJR-CTB command server. If the LAN setting is changed, the communication may be disabled. Change the environmental settings based on the NJR-TW01UHD (LAN model) and NJR-RW01UHD settings.

@GMC		MAC address
Getting	Command	@GMC, device, ch, reserved ↵
	Response	@GMC, device, ch, reserved, mac ↵
Parameter		device: Model 1 = NJR-TW01UHD (LAN model), 2 = NJR-RW01UHD
		ch: Channel 1 to 512 = Channel 1 to Channel 512
		reserved: Reservation "1" fixed
		mac: MAC address 00 to FF = 8 bit (in hex) x 6 combinations
Getting example	Command	@GMC,1,1,1 ↵
	Response	@GMC,1,1,1,D88039A6D9DF ↵
	Description	Getting the MAC address of NJR-TW01UHD (LAN model) Channel 1 D8:80:39:A6:D9:DF
Remarks		This command can be input only via the NJR-CTB command server.

4.5.2.7 Advanced setting

@CLRC		Initialization
Setting	Command	@CLRC, device, ch, reserved
	Response	@CLRC, device, ch, reserved
Parameter		device: Model 1 = NJR-TW01UHD (LAN model), 2 = NJR-RW01UHD
		ch: Channel 0 = All channels, 1 to 512 = Channel 1 to Channel 512
		reserved: Reservation "1" fixed
Setting example	Command	@CLRC,1,2,1
	Response	@CLRC,1,2,1
	Description	Initializing settings of the NJR-TW01UHD Channel 2 Completed
Remarks		This command can be input only via the NJR-CTB command server. Settings of "4.5.2.1 Setting input" to "4.5.2.6 Setting LAN" will be initialized.

@RBTC		Reboot
Setting	Command	@RBTC, device, ch, reserved
	Response	@RBTC, device, ch, reserved
Parameter		device: Model 1 = NJR-TW01UHD, 2 = NJR-RW01UHD
		ch: Channel 0 = All channels, 1 to 512 = Channel 1 to Channel 512
		reserved: Reservation "1" fixed
Setting example	Command	@RBTC,1,2,1
	Response	@RBTC,1,2,1
	Description	Rebooting the NJR-TW01UHD Channel 2 Completed
Remarks		This command can be input only via the NJR-CTB command server.



4.5.2.8 Information

@GSS		I/O status													
Getting	Command	@GSS, device, ch, port, mode													
	Response	@GSS, device, ch, port, mode, status_1 (, status_2, status_3···)													
Parameter	device: Model 1 = NJR-TW01UHD, 2 = NJR-RW01UHD														
	ch: Channel 1 to 512 = Channel 1 to Channel 512 If a command is input from the IP-NINJAR Configurator, "1" is set (fixed).														
	port: Input connector/Output connector "1" fixed														
	mode: Target status For HDMI input connector of NJR-TW01UHD: 0 = All of 1 to 4, 1 = Input signal type ^{*1} , 2 = Video input signal format ^{*2} , 3 = Audio input signal format ^{*3} , 4 = with/without HDCP input ^{*4} For HDMI output connector of NJR-TW01UHD/NJR-RW01UHD: 10 = All of 11 to 13, 11 = HDCP authentication status ^{*5} , 12 = Output signal type ^{*6} , 13 = Error code ^{*7}														
	status_1 to status_4: Status *1 For input signal type, one of the following values is returned														
<table border="1"> <tr> <td>Hxx</td> <td>HDMI signal is input. xx stands for color depth which is 24, 30, or 36</td> </tr> <tr> <td>D</td> <td>DVI signal is input.</td> </tr> <tr> <td>N</td> <td>No signal is input.</td> </tr> </table> *2 For format of video input signal <table border="1"> <thead> <tr> <th>Reply example</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1920 x 1080i 59.94Hz</td> <td>SDTV/HDTV/UHDTV signal is input, which returns the format type and vertical sync frequency.</td> </tr> <tr> <td>800 x 600p 60.00Hz</td> <td>Signal having VESA resolution is input, and [Horizontal resolution x Vertical resolution] and vertical sync frequency are returned.</td> </tr> <tr> <td>NO SIGNAL</td> <td>No signal is input.</td> </tr> </tbody> </table>		Hxx	HDMI signal is input. xx stands for color depth which is 24, 30, or 36	D	DVI signal is input.	N	No signal is input.	Reply example	Description	1920 x 1080i 59.94Hz	SDTV/HDTV/UHDTV signal is input, which returns the format type and vertical sync frequency.	800 x 600p 60.00Hz	Signal having VESA resolution is input, and [Horizontal resolution x Vertical resolution] and vertical sync frequency are returned.	NO SIGNAL	No signal is input.
Hxx	HDMI signal is input. xx stands for color depth which is 24, 30, or 36														
D	DVI signal is input.														
N	No signal is input.														
Reply example	Description														
1920 x 1080i 59.94Hz	SDTV/HDTV/UHDTV signal is input, which returns the format type and vertical sync frequency.														
800 x 600p 60.00Hz	Signal having VESA resolution is input, and [Horizontal resolution x Vertical resolution] and vertical sync frequency are returned.														
NO SIGNAL	No signal is input.														

@GSS	I/O status (Cont'd)														
Parameter	*3 For format of audio input signal														
	<table border="1"> <thead> <tr> <th data-bbox="443 277 719 315">Reply example</th> <th data-bbox="724 277 1412 315">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="443 322 719 394">LINEAR PCM 48kHz</td> <td data-bbox="724 322 1412 394">LPCM signal is input, which returns the sampling frequency.</td> </tr> <tr> <td data-bbox="443 400 719 551">COMPRESSED AUDIO</td> <td data-bbox="724 400 1412 551">Compressed audio signal (such as Dolby Digital and DTS) is input (Because the NJR-TW01UHD does not recognize detailed formats, "COMPRESSED AUDIO" is sent to all compressed audios).</td> </tr> <tr> <td data-bbox="443 557 719 589">NO AUDIO</td> <td data-bbox="724 557 1412 589">No signal is input.</td> </tr> </tbody> </table>	Reply example	Description	LINEAR PCM 48kHz	LPCM signal is input, which returns the sampling frequency.	COMPRESSED AUDIO	Compressed audio signal (such as Dolby Digital and DTS) is input (Because the NJR-TW01UHD does not recognize detailed formats, "COMPRESSED AUDIO" is sent to all compressed audios).	NO AUDIO	No signal is input.						
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	HDCP 1.4 ON	Signal with HDCP 1.4 is input.													
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	*5 For HDCP authentication, one of the following values is returned														
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UNCONNECTED	No sink device is connected.														
*6 For output signal type, one of the following values is returned															
<table border="1"> <tbody> <tr> <td data-bbox="443 1512 587 1543">Hxx</td> <td data-bbox="592 1512 1412 1543">HDMI signal is output. xx stands for the color depth, 24, 30 or 36</td> </tr> <tr> <td data-bbox="443 1550 587 1581">D</td> <td data-bbox="592 1550 1412 1581">DVI signal is output.</td> </tr> <tr> <td data-bbox="443 1588 587 1619">N</td> <td data-bbox="592 1588 1412 1619">No sink device is connected.</td> </tr> </tbody> </table>	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.									
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N	No sink device is connected.														

@GSS		I/O status (Cont'd)																																							
Parameter		<p>*7 For status of the HDMI output connector, one of the codes below will be returned in the following order: video output/audio output.</p> <table border="1"> <thead> <tr> <th>Error code</th> <th>Video output status</th> <th>Audio output status</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Video is output correctly.</td> <td>Audio is output correctly.</td> </tr> <tr> <td>1</td> <td>—</td> <td>“@GAM / @SAM Muting/unmuting digital audio output” is set to “ON”.</td> </tr> <tr> <td>2</td> <td colspan="2">No source device is connected.</td> </tr> <tr> <td>3</td> <td>No video signal is input.</td> <td>No audio signal is input.</td> </tr> <tr> <td>4</td> <td colspan="2">Video output or audio output of the source device is muted.</td> </tr> <tr> <td>5</td> <td colspan="2">Signal with HDCP is input but the sink device does not support HDCP.</td> </tr> <tr> <td>6</td> <td colspan="2">The source device does not output the needed information (packets) for outputting video or audio.</td> </tr> <tr> <td>7</td> <td>Signal that is not supported by NJR-W01UHD is input.</td> <td>Since compressed audio is input, audio cannot be output.</td> </tr> <tr> <td>9</td> <td>—</td> <td>The sink device that does not support audio is connected.</td> </tr> <tr> <td>B</td> <td colspan="2">No sink device is connected.</td> </tr> <tr> <td>C</td> <td colspan="2">HDCP is being authenticated.</td> </tr> <tr> <td>D</td> <td colspan="2">HDCP authentication failed</td> </tr> </tbody> </table>	Error code	Video output status	Audio output status	0	Video is output correctly.	Audio is output correctly.	1	—	“@GAM / @SAM Muting/unmuting digital audio output” 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-W01UHD 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	
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Getting example	Command Response	@GSS,1,1,1,0 ↵ @GSS,1,1,1,0,H30,1920 x 1080p 60Hz,LINER PCM 48kHz, HDCP 1.4 ON ↵																																							
	Description	Getting all input statuses of NJR-TW01UHD Channel 1 - Input signal type : 30-BIT COLOR HDMI signal - Video input signal : 1080p 60Hz - Audio input signal : LPCM 48kHz - HDCP : 1.4																																							
Getting example	Command Response	@GSS,2,1,1,10 ↵ @GSS,2,1,1,10,HDCP 1.4 SUPPORT, H30,00 ↵																																							
	Description	Getting all output statuses of NJR-RW01UHD Channel 1 - HDCP authentication: HDCP 1.4 - Output signal type : 30-BIT COLOR HDMI signal - Error code : Video and audio are output correctly.																																							
Remarks		—																																							

@GES		Monitor EDID						
Getting	Command	@GES, device, ch, port, mode [↵]						
	Response	@GES, device, ch, port, mode, status_1 (, status_2, status_3···) [↵]						
Parameter		device: Model 1 = NJR-TW01UHD, 2 = NJR-RW01UHD						
		ch: Output channel 1 to 512 = Output channel 1 to Output channel 512 If a command is input from the IP-NINJAR Configurator, "1" is set (fixed).						
		port: Output connector NJR-TW01UHD: 2 = HDMI output connector NJR-RW01UHD: 1 = HDMI output connector						
		mode: Status to be gotten 0 = All of 1 to 4, 1 = Monitor name ^{*1} , 2 = Resolution and dot clock ^{*2} , 3 = HDMI support status, sampling structure, and color depth ^{*3} , 4 = Audio support status, sampling frequency, bit length, the number of channels, and compressed audio support status ^{*4}						
		status_1 to status_4: Status						
		<p>*1 For monitor name</p> <table border="1"> <thead> <tr> <th>Reply example</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>MSD-5402</td> <td>A sink device named "MSD-5402" is connected.</td> </tr> <tr> <td>UNCONNECTED</td> <td>No sink device is connected.</td> </tr> </tbody> </table>	Reply example	Description	MSD-5402	A sink device named "MSD-5402" is connected.	UNCONNECTED	No sink device is connected.
Reply example	Description							
MSD-5402	A sink device named "MSD-5402" is connected.							
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		<p>*2 For resolution and dot clock</p> <table border="1"> <thead> <tr> <th>Reply example</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1920x1080 148.50MHz</td> <td>A sink device supporting 1920x1080 (resolution) and 148.50 MHz (dot clock) is connected.</td> </tr> </tbody> </table>	Reply example	Description	1920x1080 148.50MHz	A sink device supporting 1920x1080 (resolution) and 148.50 MHz (dot clock) is connected.		
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		<p>*3 For HDMI support status, sampling frequency, and color depth</p> <table border="1"> <tbody> <tr> <td>DVI</td> <td>A sink device that does not support HDMI signal is connected.</td> </tr> <tr> <td>HDMI- RGB/YCbCr422/ YCbCr444-24/30BIT COLOR</td> <td>A sink device supporting HDMI signal is connected. Supported sampling structure (RGB, YCbCr 4:2:2, YCbCr 4:4:4, YCbCr4:2:0) and color depth (24, 30, 36) are returned.</td> </tr> </tbody> </table>	DVI	A sink device that does not support HDMI signal is connected.	HDMI- RGB/YCbCr422/ YCbCr444-24/30BIT COLOR	A sink device supporting HDMI signal is connected. Supported sampling structure (RGB, YCbCr 4:2:2, YCbCr 4:4:4, YCbCr4:2:0) and color depth (24, 30, 36) are returned.		
DVI	A sink device that does not support HDMI signal is connected.							
HDMI- RGB/YCbCr422/ YCbCr444-24/30BIT COLOR	A sink device supporting HDMI signal is connected. Supported sampling structure (RGB, YCbCr 4:2:2, YCbCr 4:4:4, YCbCr4:2:0) and color depth (24, 30, 36) are returned.							

@GES		Monitor EDID (Cont'd)				
Parameter		<p>*4 For audio support, sampling frequency, bit length, the number of channels, and compressed audio</p> <table border="1"> <tr> <td>AUDIO NOT SUPPORT</td> <td>A sink device that does not support audio signal is connected.</td> </tr> <tr> <td>LINEAR PCM-32/44.1/48kHz-16/20/24BIT-8CHANNEL</td> <td>A sink device supporting audio signal is connected. Supported sampling frequency (32, 44.1, 48, 88.2, 96, 176.4, 192), the number of bits (16, 20, 24), the number of channels (1 to 8), and compressed audio support status are returned.</td> </tr> </table>	AUDIO NOT SUPPORT	A sink device that does not support audio signal is connected.	LINEAR PCM-32/44.1/48kHz-16/20/24BIT-8CHANNEL	A sink device supporting audio signal is connected. Supported sampling frequency (32, 44.1, 48, 88.2, 96, 176.4, 192), the number of bits (16, 20, 24), the number of channels (1 to 8), and compressed audio support status are returned.
AUDIO NOT SUPPORT	A sink device that does not support audio signal is connected.					
LINEAR PCM-32/44.1/48kHz-16/20/24BIT-8CHANNEL	A sink device supporting audio signal is connected. Supported sampling frequency (32, 44.1, 48, 88.2, 96, 176.4, 192), the number of bits (16, 20, 24), the number of channels (1 to 8), and compressed audio support status are returned.					
Getting example	Command	@GES,2,1,1,0 				
	Response	@GES,2,1,1,0,MSD-702,1920x1080 148.50MHz,DVI,AUDIO NOT SUPPORT 				
	Description	Getting the EDID of the sink device connected to NJR-RW01UHD Channel 1 - Monitor name: MSD-702 - Resolution : 1920x1080 - Dot clock : 148.50 MHz - HDMI : Not supported - Audio : Not supported				
Remarks		—				

@GIV		Version
Getting	Command	@GIV, device, ch, reserved ↵
	Response	@GIV, device, ch, reserved, id, ver ↵
Parameter		device: Model 1 = NJR-TW01UHD, 2 = NJR-RW01UHD
		ch: Channel 1 to 512 = Channel 1 to Channel 512 If a command is input from the IP-NINJAR Configurator, "1" is set (fixed).
		reserved: Reservation "1" fixed
		id : Model number
		ver: Firmware version
Getting example	Command	@GIV,1,1,1 ↵
	Response	@GIV,1,1,1,NJR-TW01UHD,1.00 ↵
	Description	Getting the product information of NJR-TW01UHD Channel 1 - Model number : NJR-TW01UHD - Firmware version : 1.00
Remarks		—

User Guide (Command Guide) of NJR-TW01UHD/NJR-RW01UHD

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