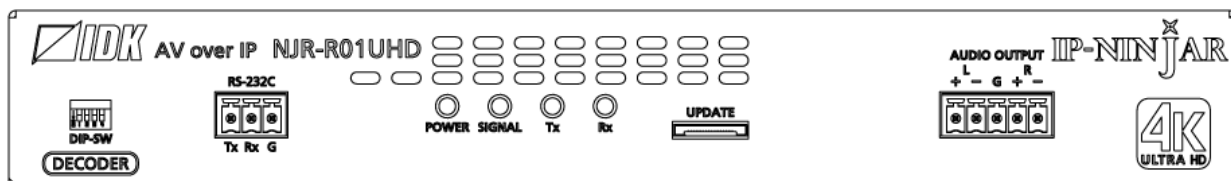
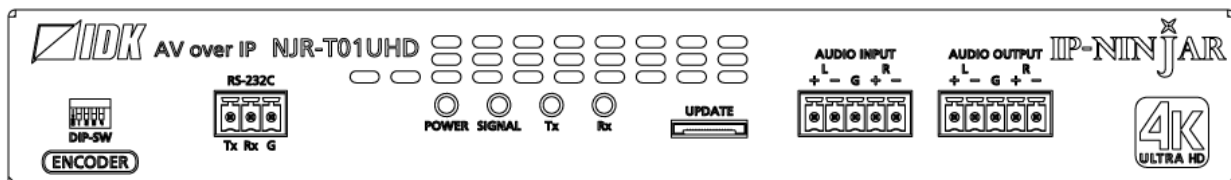


4K@60/HDCP 2.2 AV over IP Encoder/Decoder for HDMI

NJR-T01UHD/NJR-R01UHD

<Command Reference Guide>

Ver.6.0.0



- 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.

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Before reading this manual

- All rights reserved.
- Some information contained in this User guide such as exact product appearance, communication commands, 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: 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 contains the procedure for commanding NJR-T01UHD and NJR-R01UHD via RS-232C communication or LAN communication.

If other IP-NINJAR series products are connected, refer to each User Guide.

2 About this Guide

This guide contains the procedure for controlling NJR-01UHD using commands via RS-232C communication or LAN communication.

■ **Communication commands enables the following main operations:**

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

3 Communication configuration and Specifications

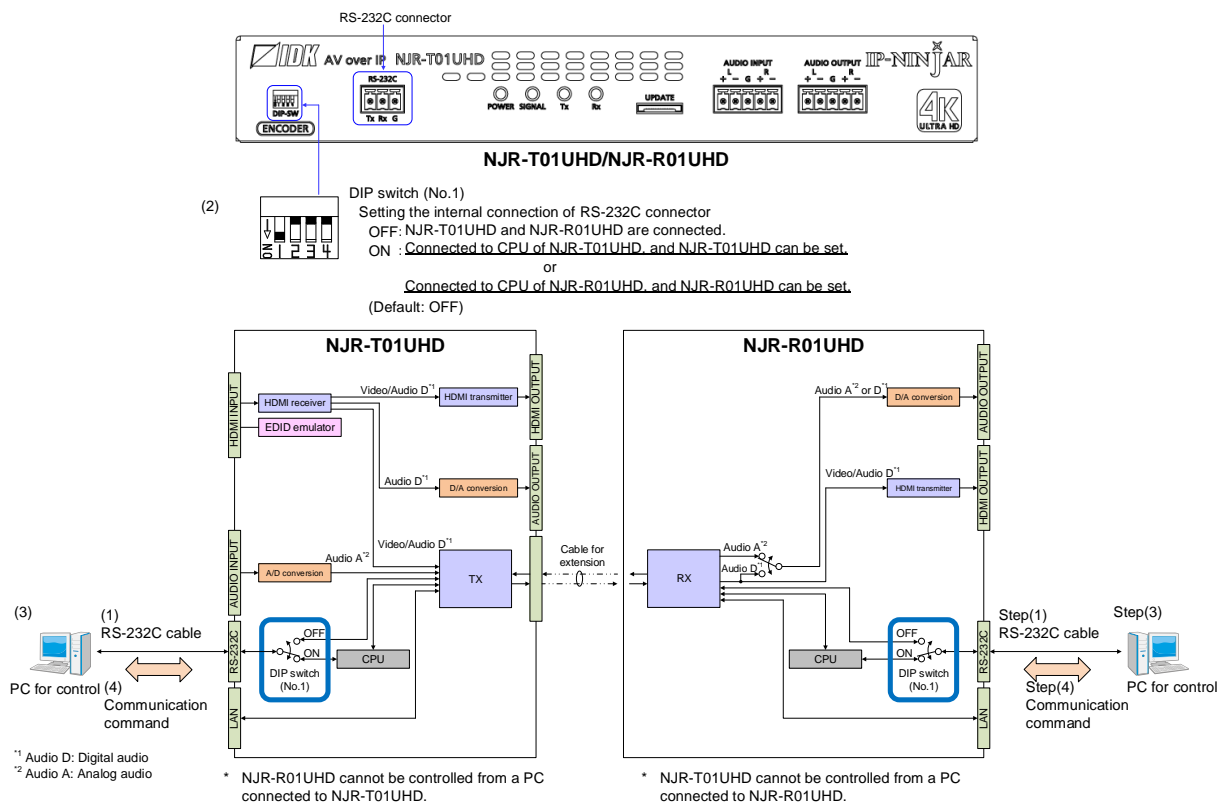
3.1 RS-232C communication

The NJR-01UHD can be accessed and controlled via RS-232C communication. Connecting a control device to the NJR-01UHD's RS-232C connectors enables system control and status queries per the Command List.

3.1.1 Setting up of RS-232C communication

Follow the procedure below.

- (1) Connect the control device to the RS-232C connector of the NJR-01UHD through an RS-232C cable.
- (2) Set the DIP switch 1 to "ON".
- (3) See the control device according to "There are two RS-232C modes: control mode (setting NJR) and communication mode (controlling peripheral devices). Values for the former mode are fixed as follows and cannot be changed; values for the latter mode are settable. 【See: 4.5.2.5 Setting RS-232C】
- (4) [Table 3.1] RS-232C".
- (5) Send communication command from the control device to the NJR-01UHD.
 You can control the NJR-01UHD and get the status information using communication command.



[Fig. 3.1] Setting RS-232C communication

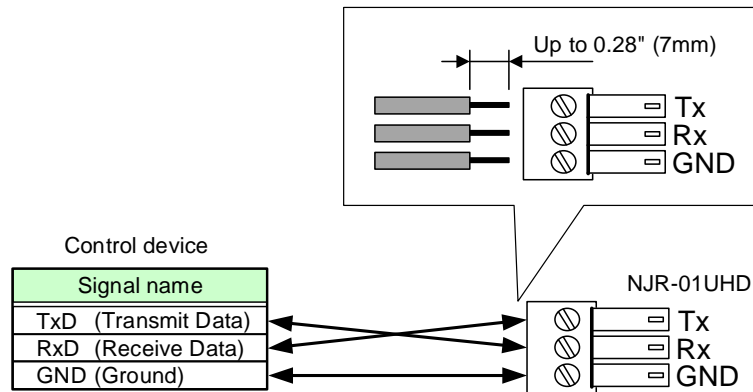
3.1.2 RS-232C connector specification

Insert and secure the wires from the RS-232C cable into the supplied 3-pin captive screw connector, and then insert the captive screw connector into the mating connector on the NJR.

28 AWG to 16 AWG conductor gauge is recommended.

The recommended wire strip length is 0.28 in. (7 mm).

Short RTS/CTS and DTR/DSR as needed.



[Fig. 3.2] RS-232C connector

3.1.3 RS-232C communication specification

There are two RS-232C modes: control mode (setting NJR) and communication mode (controlling peripheral devices). Values for the former mode are fixed as follows and cannot be changed; values for the latter mode are settable.

【See: 4.5.2.5 Setting RS-232C】

[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-01UHD can be accessed and controlled through LAN communication.

Connecting a control device to the NJR-01UHD's LAN connector enables system control and status queries using the IP-NINJAR Configurator (configuration software for IP-NINJAR).

For operations from the IP-NINJAR Configurator, refer to the User Guide of IP-NINJAR Configurator.

Please contact us to download the IP-NINJAR Configurator.

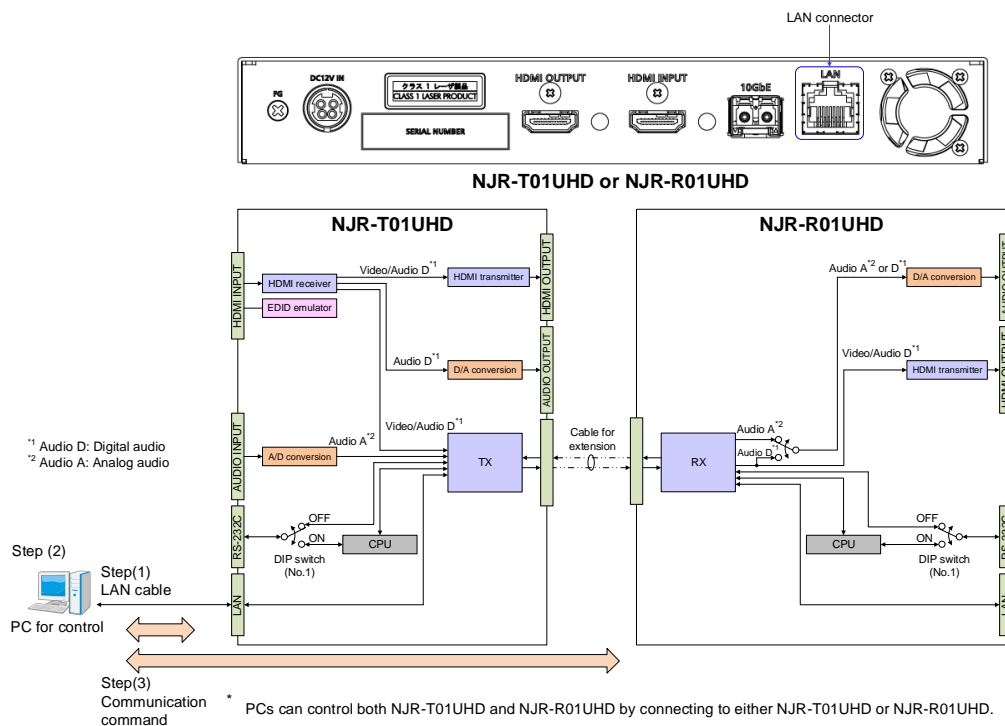
Note:

When using LAN communication to control the NJR-01UHD, the terminal software cannot be used.

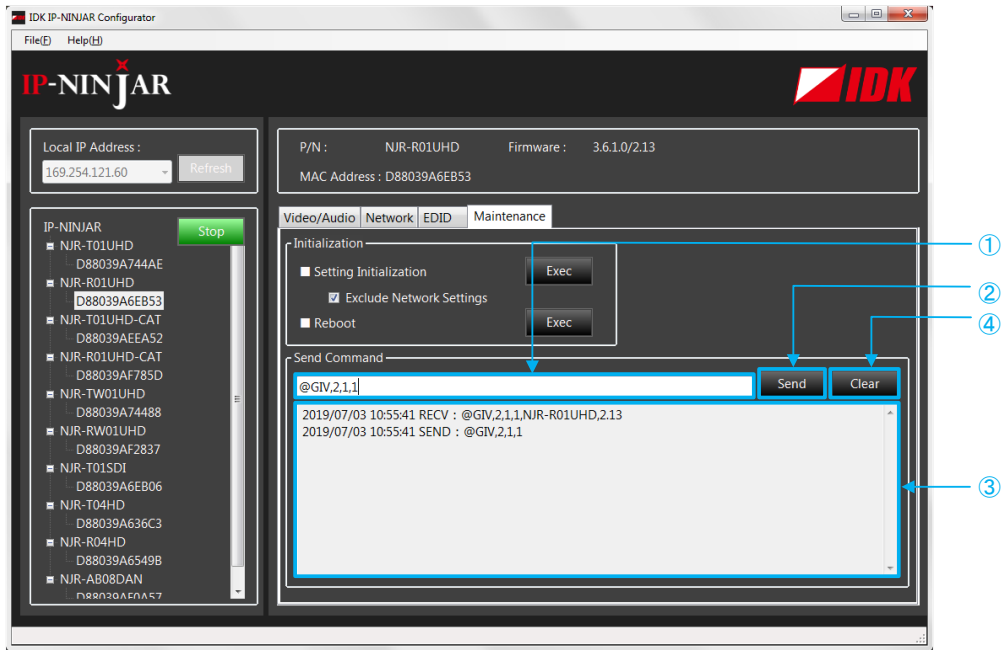
3.2.1 Setting up LAN communication

Follow the procedure below.

- (1) Connect the control device to the LAN connector of the NJR-01UHD 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.
- (4) You can control the NJR-01UHD and get the status information using communication command.



[Fig. 3.3] Setting LAN communication



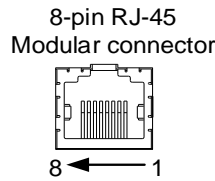
- ① For entering the desired command
- ② For sending the command to NJR-T01UHD or NJR-R01UHD
- ③ For displaying the log
- ④ For deleting the log

[Fig. 3.4] Command input from Maintenance page

3.2.2 LAN connector specification

LAN connector assignment 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-01UHD 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. 3.5] LAN connector

3.2.3 LAN communication specification

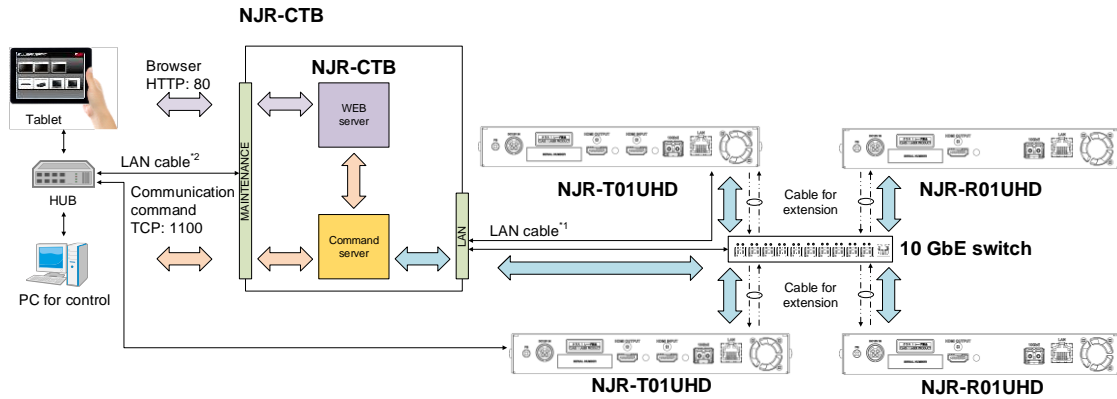
[Table 3.2] Specification of LAN communication

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 NJR-CTB

Connecting a control device to the NJR-CTB's LAN connector enables system control and status queries per the Command List.

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-T01UHD/NJR-R01UHD 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-T01UHD/NJR-R01UHD.

[Fig. 3.6] Controlled by NJR-CTB

3.4 Connecting LAN cable

When connecting a LAN cable to NJR-T01UHD/NJR-R01UHD/NJR-CTB, avoid making a network loop.

The NJR-T01UHD and NJR-R01UHD send broadcast packets periodically for the purposes of internal system management.

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

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

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	19

■ Setting input

Command	Function	Page
@GDT / @SDT	No-signal input monitoring	20
@GHE / @SHE	HDCP input enabled/disabled	21

■ Setting output

Command	Function	Page
@GDM / @SDM	Output mode	22
@GEN / @SEN	HDCP output	23
@GHM / @SHM	Hot plug ignoring duration	24

■ Setting audio

Command	Function	Page
@GAM / @SAM	Muting/unmuting digital audio output	25
@GAAS / @SAAS	Output audio	26

■ Setting EDID

Command	Function	Page
@GVF / @SVF	EDID resolution	27
@RME	Copying EDID	28
@GWX / @SWX	Selecting WXGA mode	28
@GDI / @SDI	Deep Color input	29
@GAF / @SAF	Audio format	30
@GSP / @SSP	Speaker configuration	31

■ Setting RS-232C

Command	Function	Page
@GCTB / @SCTB	RS-232C communication	33

■ Setting LAN

Command	Function	Page
@GIP / @SIP	LAN	34
@GMC	MAC address	35

■ Advanced setting

Command	Function	Page
@CLRC	Initialization	36
@RBTC	Reboot	36

■ Information

Command	Function	Page
@GSS	I/O status	37
@GES	Monitor's EDID	40
@GIV	Version	41

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-T01UHD/NJR-R01UHD		NJR-CTB
	RS-232C	LAN (IP-NINJAR Configurator)	LAN
Setting input			
@GDT / @SDT	Command	Command	WEB&C
@GHE / @SHE	Command	Command	WEB&C
Setting output			
@GDM / @SDM	Command	Command	WEB&C
@GEN / @SEN	Command	Command	WEB&C
@GHM / @SHM	Command	Command	WEB&C
Setting audio			
@GAM / @SAM	Command	Command	WEB&C
@GAAS / @SAAS	No	GUI	WEB&C
Setting EDID			
@GVF / @SVF	Command	Command	WEB&C
@RME	Command	Command	WEB&C
@GWX / @SWX	Command	Command	WEB&C
@GDI / @SDI	Command	Command	WEB&C
@GAF / @SAF	Command	Command	WEB&C
@GSP / @SSP	Command	Command	WEB&C
Setting RS-232C			
@GCTB / @SCTB	No	GUI	WEB&C
Setting LAN			
@GIP / @SIP	No	GUI	WEB&C
@GMC	No	GUI	WEB&C
Advanced setting			
@CLRC	No	GUI	WEB&C
@RBTC	No	GUI	WEB&C
Information			
@GSS	Command	Command	WEB&C
@GES	Command	Command	WEB&C
@GIV	Command	Command	WEB&C

4.4 Parameter input format


Parameter input formats are common for each setting.

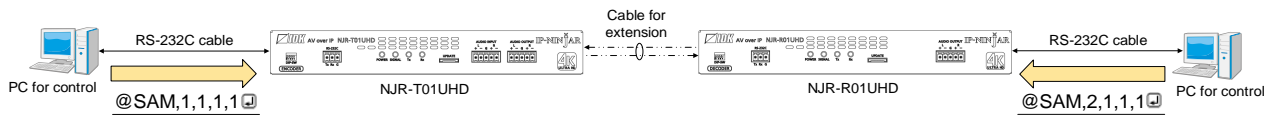
If a command is input from the RS-232C connector of NJR-T01UHD/NJR-R01UHD or from the LAN connector using the

IP-NINJAR Configurator (Software for setting IP-NINJAR), “1” (fixed) is specified to “ch” (channel) because only one NJR-T01UHD/NJR-R01UHD can be controlled.

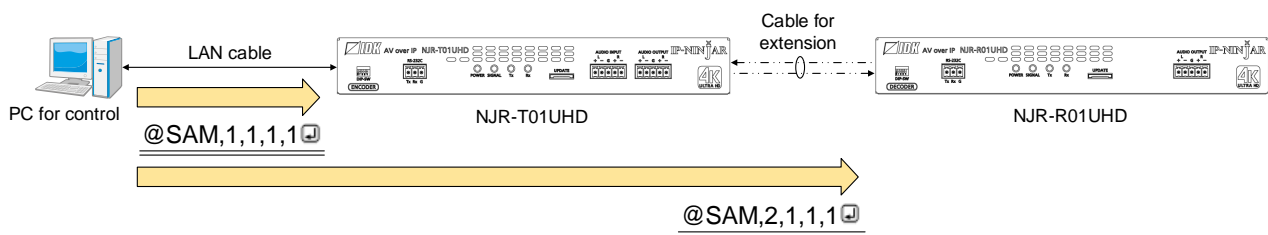
If a command is input from the NJR-CTB, any channel can be specified because multiple NJR-T01UHD/NJR-R01UHD devices that are connected over a network switch can be controlled.

Example:

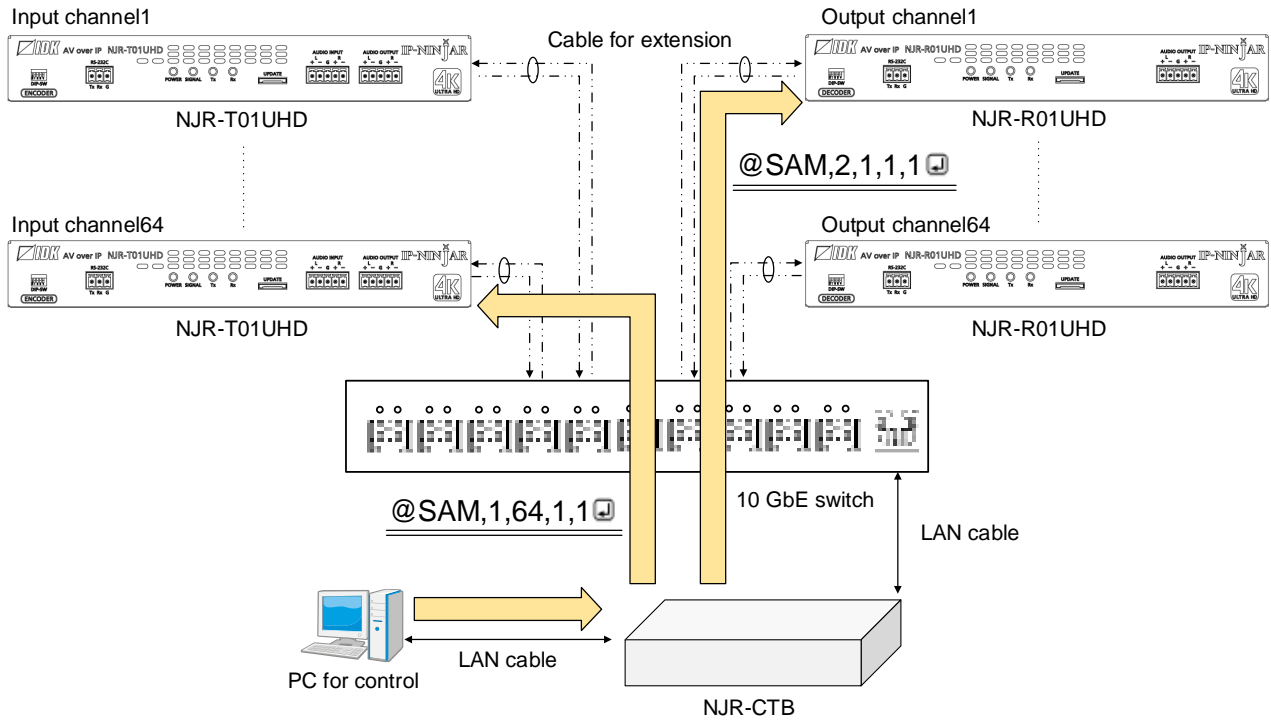
Format	@SAM, device, ch, port, mute 
Parameter	device: Model 1 = NJR-T01UHD, 2 = NJR-R01UHD
	ch: channel 1 to 512 = Channel 1 to Channel512 If a command is input from the RS-232C connector of NJR-01UHD or from the IP-NINJAR Configurator, “1” is set (fixed).
	port: Connector “1” (fixed)
	mute: Audio mute 0 = Mute OFF [Default], 1 = Mute ON



[Fig. 4.1]Command input from RS-232C



[Fig. 4.2] Command input from IP-NINJAR Configurator



[Fig. 4.3] Command input from NJR-CTB

4.5 Details of commands

4.5.1 Error status

@ERR	Error status	
Format	Return value only	
Return value	@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	
Example	@GAM ↵ @ERR,1 ↵	Sending @GAM command Parameter error
Remarks	—	

4.5.2 Basic setting

4.5.2.1 Setting input

@GDT / @SDT	No-signal input monitoring	
Function	Getting	Setting
Format	@GDT, device, ch, port ↵	@SDT, device, ch, port, time ↵
Return value	@GDT, device, ch, port, time ↵	@SDT, device, ch, port, time ↵
Parameter	device: Model "1" fixed	
	ch: Input channel 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the RS-232C connector of NJR-T01UHD or 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 this value by the 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.)	
Example	@GDT,1,1,1 ↵	Getting the no-signal input monitoring of Channel 1
	@GDT,1,1,1,6000 ↵	6000 ms. (6 seconds)
	@SDT,1,1,1,6000 ↵	Setting the no-signal monitoring of Channel 1 to 6000 ms. (6 seconds)
	@SDT,1,1,1,6000 ↵	Completed
Remarks	The NJR-R01UHD does not support this command.	

@GHE / @SHE	HDCP input enabled/disabled	
Function	Getting	Setting
Format	@GHE, device, ch, port ↵	@SHE, device, ch, port, hdcp↵
Return value	@GHE, device, ch, port, hdcp ↵	@SHE, device, ch, port, hdcp ↵
Parameter	device: Model "1" fixed	
	ch: Input channel 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the RS-232C connector of NJR-01UHD or from the IP-NINJAR Configurator, "1" is set (fixed).	
	port: Input connector "1" fixed	
	hdcp: HDCP input enabled/disabled 0 = DISABLE, 1 = ENABLE [Default]	
Example	@GHE,1,1,1 ↵	Getting the HDCP input enabled/disabled of Channel 1 HDCP disabled
	@GHE,1,1,1,0 ↵	
	@SHE,1,1,1,0 ↵	Disabling HDCP input of Channel 1 Completed
	@SHE,1,1,1,0 ↵	
Remarks	The NJR-R01UHD does not support this command.	

4.5.2.2 Setting output

@GDM / @SDM	Output mode	
Function	Getting	Setting
Format	@GDM, device, ch, reserved ↵	@SDM, device, ch, port, mode ↵
Return value	@GDM, device, ch, reserved, mode_1 (, mode_2) ↵	@SDM, device, ch, port, mode ↵
Parameter	device: Model 1 = NJR-T01UHD, 2 = NJR-R01UHD	
	ch: Channel 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the RS-232C connector of NJR-01UHD or from the IP-NINJAR Configurator, "1" is set (fixed).	
	reserved: Reservation "1" fixed	
	port: Output connector NJR-T01UHD: 0 = All outputs, 1 = Output connector for extension, 2 = HDMI output connector NJR-R01UHD: 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-T01UHD: mode_1 = Output connector for extension, mode_2 = HDMI output connector NJR-R01UHD: mode_1 = HDMI output connector	
Example	@GDM,1,1,1 ↵ @GDM,1,1,1,0,4 ↵	Getting the output mode of NJR-T01UHD Channel 1 Output connector for extension : AUTO, HDMI output connector : YCbCr4:4:4 output
	@GDM,2,1,1 ↵ @GDM,2,1,1,0 ↵	Getting the output mode of NJR-R01UHD Channel 1 AUTO
	@SDM,1,1,2,4 ↵	Setting the output mode of Channel1's HDMI output connector (NJR-T01UHD) to YCbCr4:4:4 output
	@SDM,1,1,2,4 ↵	Completed
Remarks	—	

@GEN / @SEN	HDCP output	
Function	Getting	Setting
Format	@GEN, device, ch, reserved ↵	@SEN, device, ch, port, hdcp ↵
Return value	@GEN, device, ch, reserved, hdcp ↵	@SEN, device, ch, port, hdcp ↵
Parameter	device: Model "2" fixed.	
	ch: Channel 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the RS-232C connector of NJR-01UHD or 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	
Example	@GEN,2,1,1 ↵	Getting the HDCP output of NJR-R01UHD Channel 1 ALWAYS
	@GEN,2,1,1,1 ↵	
	@SEN,2,1,1,2 ↵	Setting the HDCP output of NJR-R01UHD Channel 1 to HDCP INPUT ONLY
	@SEN,2,1,1,2 ↵	Completed
Remarks	The NJR-T01UHD does not support this command.	

@GHM / @SHM	Hot plug ignoring duration	
Function	Getting	Setting
Format	@GHM, device, ch, reserved [↵]	@SHM, device, ch, port, time [↵]
Return value	@GHM, device, ch, reserved, time [↵]	@SHM, device, ch, port, time [↵]
Parameter	device: Model 1 = NJR-T01UHD, 2 = NJR-R01UHD ch: Channel 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the RS-232C connector of NJR-01UHD or from the IP-NINJAR Configurator, "1" is set (fixed). reserved: Reservation "1" fixed port: Output connector NJR-T01UHD: "2" fixed NJR-R01UHD: "1" fixed time: Masking time 0 = OFF (Not ignoring request signals) [Default], 2000 to 15000 = 2 sec. to 15 sec. Set this value by the 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.)	
Example	@GHM,1,1,2 [↵] @GHM,1,1,2,0 [↵] @GHM,2,1,1 [↵] @GHM,2,1,1,2000 [↵] @SHM,2,1,1,0 [↵] @SHM,2,1,1,0 [↵]	Getting the hot plug ignoring duration of NJR-T01UHD Channel 1 OFF Getting the hot plug ignoring duration of NJR-R01UHD Channel 1 For 2 seconds Setting the hot plug ignoring duration of NJR-R01UHD Channel 1 to OFF Completed
Remarks	—	

4.5.2.3 Setting audio

@GAM / @SAM	Muting/unmuting digital audio output	
Function	Getting	Setting
Format	@GAM, device, ch, port ↵	@SAM, device, ch, port, mute ↵
Return value	@GAM, device, ch, port, mute ↵	@SAM, device, ch, port, mute ↵
Parameter	device: Model 1 = NJR-T01UHD, 2 = NJR-R01UHD	
	ch: Channel 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the RS-232C connector of NJR-01UHD or from the IP-NINJAR Configurator, "1" is set (fixed).	
	port: Connector "1" fixed	
	mute: Audio mute 0 = Mute OFF [Default], 1 = Mute ON	
Example	@GAM,1,1,1 ↵	Getting the audio mute of NJR-T01UHD Channel 1
	@GAM,1,1,1,0 ↵	OFF
	@SAM,1,1,1,0 ↵	Setting the audio mute of NJR-T01UHD Channel 1 to OFF
	@SAM,1,1,1,0 ↵	Completed
Remarks	—	

@GAAS / @SAAS	Output audio	
Function	Getting	Setting
Format	@GAAS, device, ch, reserved ↵	@SAAS, device, ch, reserved, analog, digital ↵
Return value	@GAAS, device, ch, reserved, analog, digital ↵	@SAAS, device, ch, reserved, analog, digital ↵
Parameter	device: Model "2" fixed	
	ch: Channel 1 to 512 = Input channel 1 to Input 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 audio, 1 = Digital input audio [Default]	
Example	@GAAS,2,1,1 ↵ @GAAS,2,1,1,0,1 ↵	Getting the output audio of Channel 1 Analog input audio is output from the analog audio output connector
	@SAAS,2,1,1,0,1 ↵ @SAAS,2,1,1,0,1 ↵	Setting analog input audio to be output from the analog audio output connector of Channel 1 Completed
Remarks	The NJR-T01UHD 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	
Function	Getting	Setting
Format	@GVF, device, ch, port ↵	@SVF, device, ch, port, resolution ↵
Return value	@GVF, device, ch, port, resolution ↵	@SVF, device, ch, port, resolution ↵
Parameter	device: Model "1" static ch: Input channel 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the RS-232C connector of NJR-T01UHD or from the IP-NINJAR Configurator, "1" is set (fixed). port: Input connector "1" fixed resolution: EDID resolution 1 = Copy 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	
Example	@GVF,1,1,1 ↵	Getting the EDID resolution of Channel 1
	@GVF,1,1,1,24 ↵	WUXGA
	@SVF,1,1,1,24 ↵	Setting the EDID resolution of Channel 1
	@SVF,1,1,1,24 ↵	to WUXGA Completed
Remarks	The NJR-R01UHD does not support this command. Select EDID of 1360x768 and 1366x768 using " @GWX / @SWX Selecting WXGA mode ".	

@RME		Copying EDID	
Function	Setting		
Format	@RME, device, ch, reserved, number ↵		
Return value	@RME, device, ch, reserved, number ↵		
Parameter	device: Model "1" fixed		
	ch: Input channel 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the RS-232C connector of NJR-T01UHD or from the IP-NINJAR Configurator, "1" is set (fixed).		
	reserved: Reservation "1" fixed		
	number: Destination of the copied data to save "0" fixed		
Example	@RME,1,1,1,0 ↵	Copying EDID of the sink device that is connected to the HDMI output connector of the NJR-T01UHD.	
	@RME,1,1,1,0 ↵	Completed	
Remarks	The NJR-R01UHD does not support this command.		

@GWX / @SWX		Selecting WXGA mode	
Function	Getting	Setting	
Format	@GWX, device, ch, port ↵	@SWX, device, ch, port, mode ↵	
Return value	@GWX, device, ch, port, mode ↵	@SWX, device, ch, port, mode ↵	
Parameter	device: Model "1" fixed		
	ch: Input channel 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the RS-232C connector of NJR-T01UHD or from the IP-NINJAR Configurator, "1" is set (fixed).		
	port: Input connector "1" fixed		
	mode: Selecting WXGA mode 0 = 1360x768 [Default], 1 = 1366x768		
Example	@GWX,1,1,1 ↵	Getting the WXGA mode of Channel 1	
	@GWX,1,1,1,0 ↵	1360x768	
	@SWX,1,1,1,0 ↵	Setting the WXGA mode of Channel 1 to	
	@SWX,1,1,1,0 ↵	1360x768	
		Completed	
Remarks	The NJR-R01UHD does not support this command.		

@GDI / @SDI	Deep Color input	
Function	Getting	Setting
Format	@GDI, device, ch, port ↵	@SDI, device, ch, port, color ↵
Return value	@GDI, device, ch, port, color ↵	@SDI, device, ch, port, color ↵
Parameter	device: Model "1" fixed	
	ch: Input channel 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the RS-232C connector of NJR-T01UHD or 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	
Example	@GDI,1,1,1 ↵	Getting the color depth of Channel 1
	@GDI,1,1,1,0 ↵	24-BIT COLOR
	@SDI,1,1,1,0 ↵	Setting the color depth of Channel 1 to
	@SDI,1,1,1,0 ↵	24-BIT COLOR Completed
Remarks	The NJR-R01UHD does not support this command.	

@GAF / @SAF	Audio format																	
Function	Getting	Setting																
Format	@GAF, device, ch, port ↵	@SAF, device, ch, port, format_1, frequency_1 (, format_2, frequency_2···) ↵																
Return value	@GAF, device, ch, port, format_1, frequency_1 (, format_2, frequency_2···) ↵	@SAF, device, ch, port, format_1, frequency_1 (, format_2, frequency_2···) ↵																
Parameter	device: Model "1" fixed																	
	ch: Input channel 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the RS-232C connector of NJR-T01UHD or from the IP-NINJAR Configurator, "1" is set (fixed).																	
	port: Input connector "1" fixed																	
	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																	
	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.																	
	<table border="1"> <thead> <tr> <th>Audio format</th> <th>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>		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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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 commands : the set audio formats and maximum sampling frequency is returned																		
Setting commands : send the desired audio formats and the maximum sampling frequencies																		

@GAF / @SAF	Audio format (Cont'd)	
Example	@GAF,1,1,1	Getting the audio format that can be output to Channel 1
	@GAF,1,1,1,0,7	Up to PCM 192 kHz
	@SAF,1,1,1,4,3	Setting Channel 1 to output audio up to PCM and DTS 48 kHz (The maximum PCM sampling frequency is not changed.)
	@SAF,1,1,1,4,3	Completed
Remarks	The NJR-R01UHD does not support this command.	

@GSP / @SSP	Speaker configuration	
Function	Getting	Setting
Format	@GSP, device, ch, port	@SSP, device, ch, port, number (, speaker_1, speaker_2····)
Return value	@GSP, device, ch, port, number, speaker_1 (, speaker_2····)	@SSP, device, ch, port, number (, speaker_1, speaker_2····)
Parameter	device: Model "1" fixed	
	ch: Input channel 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the RS-232C connector of NJR-T01UHD or from the IP-NINJAR Configurator, "1" is set (fixed).	
	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	

@GSP / @SSP	Speaker configuration (Cont'd)																																																																																																																																		
Parameter	<p>Getting commands : the number of speakers and which speakers will be used is returned</p> <p>Setting commands : if you do not specify the speaker configuration, the following configuration will be applied depending on the set number of speakers</p> <table border="1" data-bbox="435 465 1409 869"> <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> <p>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.</p>												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	OFF	OFF
number	speaker																																																																																																																																		
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Example	<p>@GSP,1,1,1 </p> <p>@GSP,1,1,1,6,0,1,2,3 </p>	<p>Getting the speaker configuration of Channel 1</p> <p>Six speakers are used:</p> <p>Front Left/Right, Low Frequency Effect, Front Center, Rear Left/Right</p>																																																																																																																																	
	<p>@SSP,1,1,1,8 </p> <p>@SSP,1,1,1,8 </p>	<p>Assign eight speakers to Channel 1:</p> <p>Front Left/Right, Low Frequency Effect, Front Center, Rear Left/Right, Rear Left/Right Center</p> <p>Completed</p>																																																																																																																																	
	<p>@SSP,1,1,1,8,0,3,5,6,7 </p> <p>@ERR,1 </p>	<p>Assign 10 speakers to Channel 1:</p> <p>Front Left/Right, Rear Left/Right, Front Left/Right Center, Rear Left/Right Center, Front Left/Right Wide</p> <p>The number of speakers exceeds the settable value</p>																																																																																																																																	
Remarks	The NJR-R01UHD does not support this command.																																																																																																																																		

4.5.2.5 Setting RS-232C

@GCTB / @SCTB	RS-232C communication	
Function	Getting	Setting
Format	@GCTB, device, ch, reserved [↵]	@SCTB, device, ch, reserved, baudrate, databit, stopbit, parity [↵]
Return value	@GCTB, device, ch, reserved, baudrate, databit, stopbit, parity [↵]	@SCTB, device, ch, reserved, baudrate, databit, stopbit, parity [↵]
Parameter	device: Model 1 = NJR-T01UHD, 2 = NJR-R01UHD	
	ch: Channel 1 to 512 = Input channel 1 to Input 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	
Example	@GCTB,1,1,1 [↵]	Getting the RS-232C communication setting of NJR-T01UHD Channel 1
	@GCTB,1,1,1,4,8,1,0 [↵]	- Baud rate : 57600 bps - Data bit length : 8 bit - Stop bit : 1 bit - Parity check : NONE
	@SCTB,1,1,1,4,8,1,0 [↵]	Setting the RS-232C communication setting of NJR-T01UHD Channel 1 as follows: - Baud rate : 57600 bps - Data bit length : 8 bit - Stop bit : 1 bit - Parity check : NONE
	@SCTB,1,1,1,4,8,1,0 [↵]	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	
Function	Getting	Setting
Format	@GIP, device, ch, reserved [↵]	@SIP, device, ch, reserved, mode, ip, mask, gateway [↵]
Return value	@GIP, device, ch, reserved, mode, ip, mask, gateway [↵]	@SIP, device, ch, reserved, mode, ip, mask, gateway [↵]
Parameter	device: Model 1 = NJR-T01UHD, 2 = NJR-R01UHD	
	ch: Channel 1 to 512 = Input channel 1 to Input 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	
Example	@GIP,1,1,1 [↵]	Getting the LAN setting of NJR-T01UHD Channel 1
	@GIP,1,1,1,1,192.168.3.2,255.255.255.0,192.168.3.254 [↵]	- Mode : Static - IP address : 192.168.3.2 - Subnet mask : 255.255.255.0 - Default gateway : 192.168.3.254
	@SIP,1,1,1,1,192.168.3.2,255.255.255.0,192.168.3.254 [↵]	Setting the LAN of NJR-T01UHD Channel 1 as follows: - Mode : Static - IP address : 192.168.3.2 - Subnet mask : 255.255.255.0 - Default gateway : 192.168.3.254
	@SIP,1,1,1,1,192.168.3.2,255.255.255.0,192.168.3.254 [↵]	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 settings.	

@GMC	MAC address	
Function	Getting	
Format	@GMC, device, ch, reserved ↵	
Return value	@GMC, device, ch, reserved, mac ↵	
Parameter	device: Model 1 = NJR-T01UHD, 2 = NJR-R01UHD	
	ch: Channel 1 to 512 = Input channel 1 to Input channel 512	
	reserved: Reservation "1" fixed	
	mac: MAC address 00 to FF = 8 bit (in hex) x 6 combinations	
Example	@GMC,1,1,1 ↵	Getting the MAC address of NJR-T01UHD Channel 1
	@GMC,1,1,1,D88039A6D9DF ↵	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	
Function	Setting	
Format	@CLRC, device, ch, reserved ↵	
Return value	@CLRC, device, ch, reserved ↵	
Parameter	device: Model 1 = NJR-T01UHD, 2 = NJR-R01UHD	
	ch: Channel 0 = All channels, 1 to 512 = Input channel 1 to Input channel 512	
	reserved: Reservation "1" fixed	
Example	@CLRC,1,2,1 ↵ @CLRC,1,2,1 ↵	Initializing settings of the NJR-T01UHD 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	
Function	Setting	
Format	@RBTC, device, ch, reserved ↵	
Return value	@RBTC, device, ch, reserved ↵	
Parameter	device: Model 1 = NJR-T01UHD, 2 = NJR-R01UHD	
	ch: Channel 0 = All channels, 1 to 512 = Input channel 1 to Input channel 512	
	reserved: Reservation "1" fixed	
Example	@RBTC,1,2,1 ↵ @RBTC,1,2,1 ↵	Rebooting the NJR-T01UHD 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								
Function	Getting								
Format	@GSS, device, ch, port, mode ↵								
Return value	@GSS, device, ch, port, mode, status_1 (, status_2, status_3···) ↵								
Parameter	device: Model 1 = NJR-T01UHD, 2 = NJR-R01UHD								
	ch: Channel 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the RS-232C connector of NJR-01UHD or 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-T01UHD: 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-T01UHD/NJR-R01UHD: 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>		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.		
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.								
*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 synchronous 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 synchronous frequency are returned.</td> </tr> <tr> <td>NO SIGNAL</td> <td>No signal is input.</td> </tr> </tbody> </table>		Reply example	Description	1920 x 1080i 59.94Hz	SDTV/HDTV/UHDTV signal is input, which returns the format type and vertical synchronous frequency.	800 x 600p 60.00Hz	Signal having VESA resolution is input, and [Horizontal resolution x Vertical resolution] and vertical synchronous frequency are returned.	NO SIGNAL	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 synchronous frequency.								
800 x 600p 60.00Hz	Signal having VESA resolution is input, and [Horizontal resolution x Vertical resolution] and vertical synchronous 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="443 275 721 309">Reply example</th> <th data-bbox="727 275 1409 309">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="443 318 721 392">LINEAR PCM 48kHz</td> <td data-bbox="727 318 1409 392">LPCM signal is input, which returns the sampling frequency.</td> </tr> <tr> <td data-bbox="443 400 721 548">COMPRESSED AUDIO</td> <td data-bbox="727 400 1409 548">Compressed audio signal (such as Dolby Digital and DTS) is input (Because the NJR-T01UHD does not recognize detailed formats, "COMPRESSED AUDIO" is sent to all compressed audios).</td> </tr> <tr> <td data-bbox="443 557 721 589">NO AUDIO</td> <td data-bbox="727 557 1409 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-T01UHD does not recognize detailed formats, "COMPRESSED AUDIO" is sent to all compressed audios).	NO AUDIO	NO signal is input.					
	Reply example	Description												
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	NO AUDIO	NO signal is input.												
	*4 For HDCP presence, one of the following values is returned.													
	<table border="1"> <tbody> <tr> <td data-bbox="443 674 721 707">HDCP 1.4 ON</td> <td data-bbox="727 674 1409 707">Signal with HDCP 1.4 is input.</td> </tr> <tr> <td data-bbox="443 716 721 750">HDCP 2.2 ON</td> <td data-bbox="727 716 1409 750">Signal with HDCP 2.2 is input.</td> </tr> <tr> <td data-bbox="443 759 721 792">HDCP OFF</td> <td data-bbox="727 759 1409 792">Signal without HDCP is input.</td> </tr> <tr> <td data-bbox="443 801 721 831">NO SIGNAL</td> <td data-bbox="727 801 1409 831">No signal is input.</td> </tr> </tbody> </table>	HDCP 1.4 ON	Signal with HDCP 1.4 is input.	HDCP 2.2 ON	Signal with HDCP 2.2 is input.	HDCP OFF	Signal without HDCP is input.	NO SIGNAL	No signal is input.					
	HDCP 1.4 ON	Signal with HDCP 1.4 is input.												
	HDCP 2.2 ON	Signal with HDCP 2.2 is input.												
	HDCP OFF	Signal without HDCP is input.												
	NO SIGNAL	No signal is input.												
	*5 For HDCP authentication, one of the following values is returned.													
<table border="1"> <thead> <tr> <th data-bbox="443 916 721 949">Reply example</th> <th data-bbox="727 916 1409 949">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="443 958 721 1032">HDCP 1.4 SUPPORT</td> <td data-bbox="727 958 1409 1032">Authenticated with HDCP 1.4</td> </tr> <tr> <td data-bbox="443 1041 721 1115">HDCP 2.2 SUPPORT</td> <td data-bbox="727 1041 1409 1115">Authenticated with HDCP 2.2</td> </tr> <tr> <td data-bbox="443 1124 721 1227">HDCP NOT SUPPORT</td> <td data-bbox="727 1124 1409 1227">Not authenticated, because device that does not support HDCP is connected or input signal does not have HDCP.</td> </tr> <tr> <td data-bbox="443 1236 721 1310">HDCP ERROR</td> <td data-bbox="727 1236 1409 1310">Device with HDCP is connected, but the authentication failed.</td> </tr> <tr> <td data-bbox="443 1319 721 1393">HDCP CHECK NOW</td> <td data-bbox="727 1319 1409 1393">Connection status of sink device was changed, and the status is being checked.</td> </tr> <tr> <td data-bbox="443 1402 721 1424">UNCONNECTED</td> <td data-bbox="727 1402 1409 1424">No sink device is connected.</td> </tr> </tbody> </table>	Reply example	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.
Reply example	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.													
*6 For output signal type, one of the following values is returned.														
<table border="1"> <tbody> <tr> <td data-bbox="443 1509 539 1543">Hxx</td> <td data-bbox="545 1509 1409 1543">HDMI signal is output. xx stands for the color depth, 24, 30 or 36</td> </tr> <tr> <td data-bbox="443 1552 539 1585">D</td> <td data-bbox="545 1552 1409 1585">DVI signal is output.</td> </tr> <tr> <td data-bbox="443 1594 539 1626">N</td> <td data-bbox="545 1594 1409 1626">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.								
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.													

@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" data-bbox="443 309 1412 1086"> <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-01UHD 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-01UHD 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	
Error code	Video output status	Audio output status																																							
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Example	<p>@GSS,1,1,1,0 ↵</p> <p>@GSS,1,1,1,0,H30,1920 x 1080p 60Hz, LINEAR PCM 48kHz, HDCP 1.4 ON ↵</p>	<p>Getting all input statuses of NJR-T01UHD Channel 1</p> <ul style="list-style-type: none"> - Input signal type : 30-BIT COLOR HDMI signal - Video input signal : 1080P 60Hz - Audio input signal : LPCM 48kHz - HDCP : 1.4 																																							
	<p>@GSS,2,1,1,10 ↵</p> <p>@GSS,2,1,1,10,HDCP 1.4 SUPPORT, H30,00 ↵</p>	<p>Getting all output statuses of NJR-R01UHD Channel 1 outputs</p> <ul style="list-style-type: none"> - HDCP authentication: HDCP 1.4 - Output signal type : 30-BIT COLOR HDMI - Error code: Video and audio are output correctly 																																							
Remarks	—																																								

@GES	Monitor's EDID					
Function	Getting					
Format	@GES, device, ch, port, mode 					
Return value	@GES, device, ch, port, mode, status_1 (, status_2, status_3···) 					
Parameter	device: Model 1 = NJR-T01UHD, 2 = NJR-R01UHD					
	ch: Output channel 1 to 512 = Output channel1 to Ouputchannel512 If a command is input from the RS-232C connector of NJR-01UHD or from the IP-NINJAR Configurator, "1" is set (fixed).					
	port: Output connector NJR-T01UHD: 2 = HDMI output connector NJR-R01UHD: 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 *1 For monitor name: <table border="1" data-bbox="443 1171 1410 1296"> <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
Reply example	Description					
MSD-5402	A sink device named "MSD-5402" is connected.					
UNCONNECTED	No sink device is connected.					
*2 For resolution and dot clock: <table border="1" data-bbox="443 1375 1410 1496"> <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.		
Reply example	Description					
1920x1080 148.50MHz	A sink device supporting 1920x1080 (resolution) and 148.50 MHz (dot clock) is connected.					
*3 For HDMI support status, sampling frequency, and color depth <table border="1" data-bbox="443 1574 1410 1809"> <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's EDID (Cont'd)					
Parameter	*4 For audio support, sampling frequency, bit length, the number of channels, and compressed audio <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">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.					
Example	@GES,2,1,1,0 ↵ @GES,2,1,1,0,MSD-702,1920x1080 148.50MHz,DVI,AUDIO NOT SUPPORT ↵	Getting the EDID of the sink device connected to NJR-R01UHD Channel 1 - Monitor name: MSD-702 - Resolution : 1920x1080 - Dot clock : 148.50 MHz - HDMI : Not supported - Audio : Not supported				
Remarks	—					

@GIV	Version	
Function	Getting	
Format	@GIV, device, ch, reserved ↵	
Return value	@GIV, device, ch, reserved, id, ver ↵	
Parameter	device: Model 1 = NJR-T01UHD, 2 = NJR-R01UHD ch: Channel 1 to 512 = Input channel 1 to Input channel 512 If a command is input from the RS-232C connector of NJR-01UHD or from the IP-NINJAR Configurator, "1" is set (fixed). reserved: Reservation "1" fixed id : Model number ver: Firmware version	
Example	@GIV,1,1,1 ↵ @GIV,1,1,1,NJR-T01UHD,1.00 ↵	Getting the product information of NJR-T01UHD Channel 1 - Model : NJR-T01UHD - Firmware version : 1.00
Remarks	—	

User Guide (Command Guide) of NJR-T01UHD/NJR-R01UHD

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