IP-NINJAR

4-channel AV over IP Encoder/Decoder for HDMI

NJR-T04HD/NJR-R04HD

The NJR-T04HD (encoder)/NJR-R04HD (decoder) is a 4-port HDMI AV over IP device with built-in scan converter.
This extender transmits 4-channel HDMI signal over one duplex fiber cable, and it supports RS-232C bidirectional communication and LAN transmission.
The NJR-T04HD/NJR-R04HD can be used as a 4-input and 4-output matrix switcher or splitter. One NJR-R04HD can configure videowall with 4 or fewer displays and multiple NJR-R04HDs enable videowall with larger number of displays using the sync function.

Please use this product with a combination of IP-NINJAR series encoders and decoders.

■ **Specification**

Item		NJR-T04HD (Encoder)	NJR-R04HD (Decoder)
Input		4 inputs HDMI (*1)/DVI 1.0 TMDS single link HDCP 1.4 Automatic input signal equalization EDID emulation Connector: Female, HDMI Type A (19-pin)	1 input Digital optical signal for extension Format: IP-NINJAR protocol RS-232C/LAN Connector: 2 LCs
Output		1 output Digital optical signal for extension Format: IP-NINJAR protocol RS-232C/LAN Connector: 2 LCs	4 outputs HDMI (*1)/DVI 1.0 TMDS single link HDCP 1.4 Automatic input signal equalization Connector: Female, HDMI Type A (19-pin)
Format		VGA / SVGA / XGA / WXGA (1280x768) / WXGA (1280x800) / Quad-VGA / SXGA / WXGA (1360x768) / WXGA (1366x768) / SXGA+ / WXGA+ / WXGA++ / UXGA / WSXGA+ / VESAHD / WUXGA / QWXGA (*2) For WUXGA / QWXGA, only Reduced Blanking is supported. 480i / 480p / 576i / 576p / 720p / 1080i / 1080p	VGA / SVGA / XGA / WXGA (1280x768) / WXGA (1280x800) / Quad-VGA / SXGA / WXGA (1360x768) / WXGA (1366x768) / SXGA+ / WXGA+ / WXGA++ / UXGA / WSXGA+ / VESAHD / WUXGA / QWXGA (*2) For WUXGA / QWXGA, only Reduced Blanking is supported. 480i / 480p / 576i / 576p / 720p / 1080i / 1080p (*3)/ 4K (3840 x 2160) / 4K (4096 x 2160) (*4)
Color depth		24 bit, 30 bit Deep Color (*5)	
Dot clock		25 MHz to 165 MHz	
TMDS clock		25 MHz to 225 MHz	
TMDS data rate		0.75 Gbps to 6.75 Gbps	
Digital audio input/output		Multi-channel LPCM up to 8 channels (*6) Sampling frequency: 32 kHz to 192 kHz, Sample size:16 bit to 24 bit	
Lip Sync delay		-	Max. 160 ms.
External sync. I/O		-	1 input and output (SYNC, CLK) Level: TTL Connector: BNC For sync between IDK's NJR-R04HD only.
HDMI cable for transmission distances		Up to 98 ft. (30 m) (*7)	Up to 164 ft. (50 m) (*7)
Cable for extension	Cable	Duplex fiber cable SFP+ optical transceiver	
	Transmission distances (*8)	Up to 984 ft. (300 m) (OM3 Multimode fiber), Up to 6.21 mi. (10 km) (OS1 Singlemode fiber)	
Control	RS-232C	1 port/male D-sub (9-pin), full duplex, up to 115.2 kbps	
	LAN	1 port/RJ-45 10Base-T/100Base-TX/1000Base-T (Auto Negotiation), Auto MDI/MDI-X	
Functions	Scan conversion	Motion adaptive interlaced/progressive conversion, Aspect Ratio Control	
	Others	Matrix switching, DDC buffer	Matrix switching, Lip Sync, DDC buffer, Connection Reset (*9)
General	AC adapter	Input : 100 - 240 VAC ± 10%, 50 Hz/60 Hz ± 3 Hz Output : DC 12 V 5 A 60.0 W (A dedicated AC adapter is provided)	
	Power consumption	About 35 Watts	About 39 Watts
	Dimensions	8.3 (W) × 1.7 (H) × 9.8 (D)" (210 (W) × 44 (H) × 250 (D) mm) (Half rack wide, 1U high) (Excluding connectors and the like)	
	Weight	4.2 lbs. (1.9 kg)	4.2 lbs. (1.9 kg)
	Temperature	Operating : 32°F to 104°F (0°C to +40°C) Storage : -4°F to +176°F (-20°C to +80°C)	
	Humidity	Operating/Storage: 20% to 90% (Non Condensing)	

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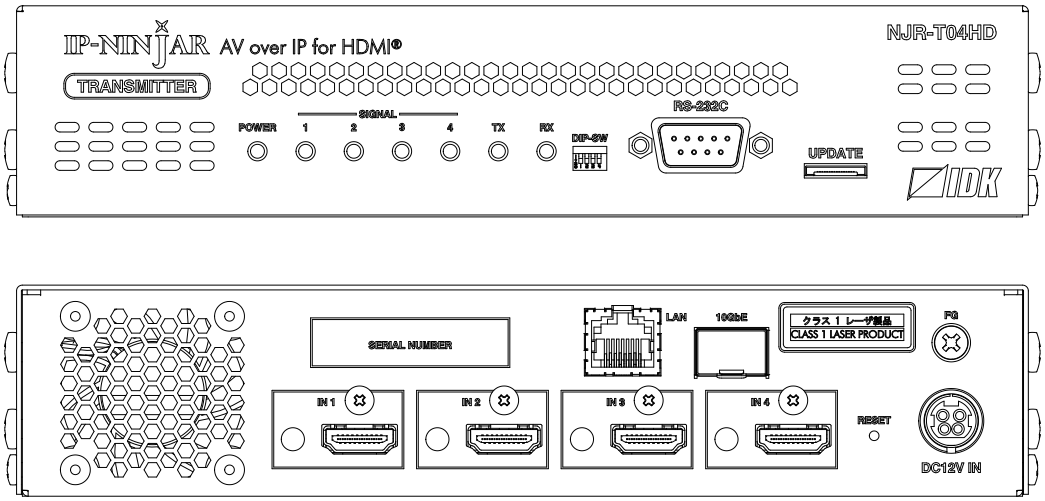
*1 x.v.Color, 3D, ARC, HEC, and CEC are not supported.
*2 The NJR-T04 input does not support UXGA / WUXGA / QWXGA if all the following conditions are met:
- An NJR-T01UHD or NJR-R01UHD is included in the system.
- 4K video that is combined video from four full HD output channels of NJR-T04HD combined video and input to the NJR-T04HD is transmitted.
- The video combination mode of the NJR-T04HD is set to four-window mode (default).

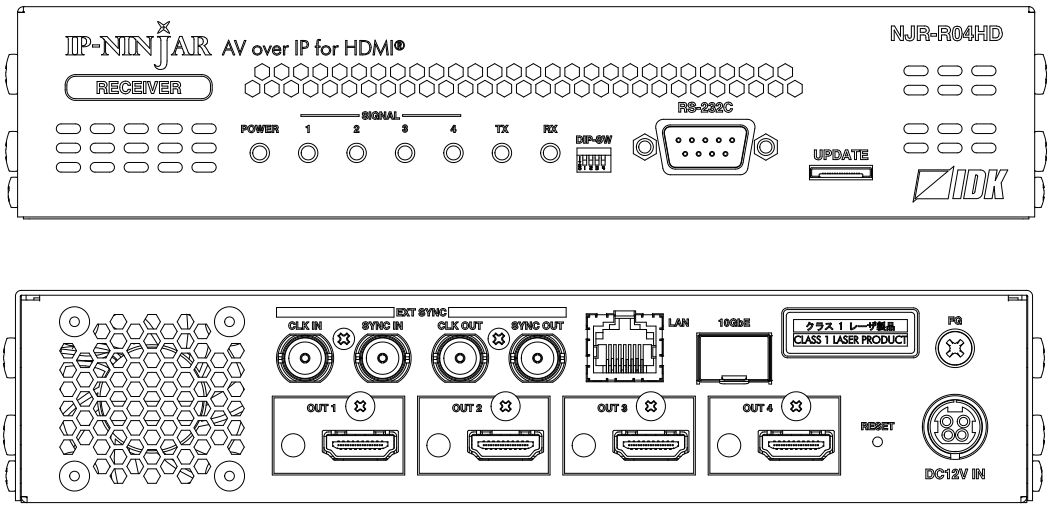
*3 If only the NJR-T04 and NJR-R04HD are used in the system, the same video format may be output from the NJR-R04HD. Refer to the User Guide for details
*4 Only CEA-861 timing is supported for 4K input video.
*5 30 bit/pixel (10 bit/component) Deep Color is supported only for 1-channel transmission.
*6 8-channel audio is supported when only 1 audio input channel is transmitted.
*7 The value of the maximum transmission distance was obtained when IDK's cable (24 AWG) was used and 1080p@60 24 bit/pixel (8 bit/component) signals were transmitted. The maximum transmission distance depends on the connected devices. The distance may not be extended with some device combinations, cabling method, or other manufacturer's cable. Video may be disturbed or may not be output even if signals are within the range mentioned above.
*8 Only if the SFP+ optical transceiver sold by IDK is used, signals can be transmitted to the mentioned maximum transmission distance. If using other SFP+ optical transceiver, check the compatible fiber and maximum distance of the SFP+ optical transceiver.
*9 For digital systems, some problems, such as an HDCP authentication error, can often be recovered by physically disconnecting and reconnecting the digital cables. However, the Connection Reset feature will fix these problems automatically without the need to physically plug and unplug the cables. It creates the same condition as if the cable were physically disconnected and reconnected. This feature only works for the NJR's output. If other devices are connected between the NJR's output and sink device, this feature may be invalid.

■ Front and Rear Panels

NJR-T04HD



NJR-R04HD



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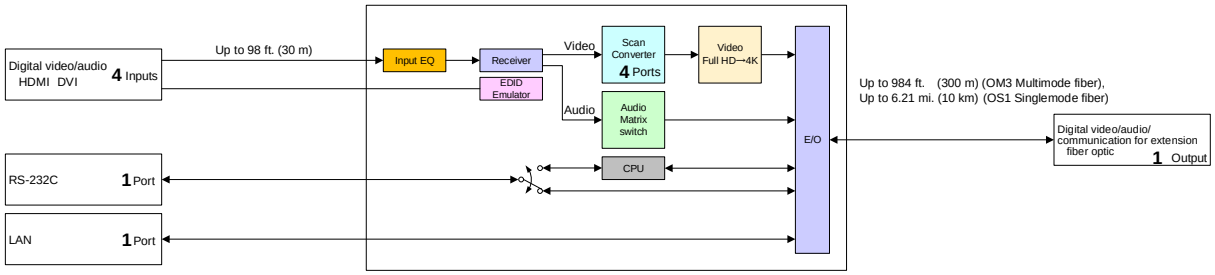
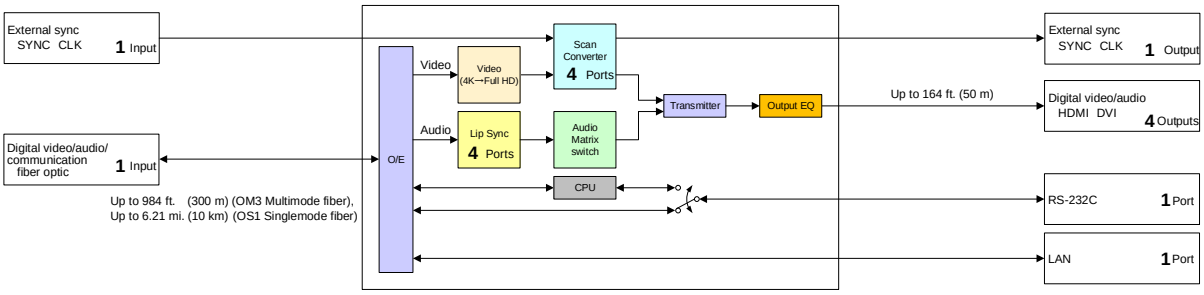
■ Diagram

NJR-T04HD



NJR-R04HD



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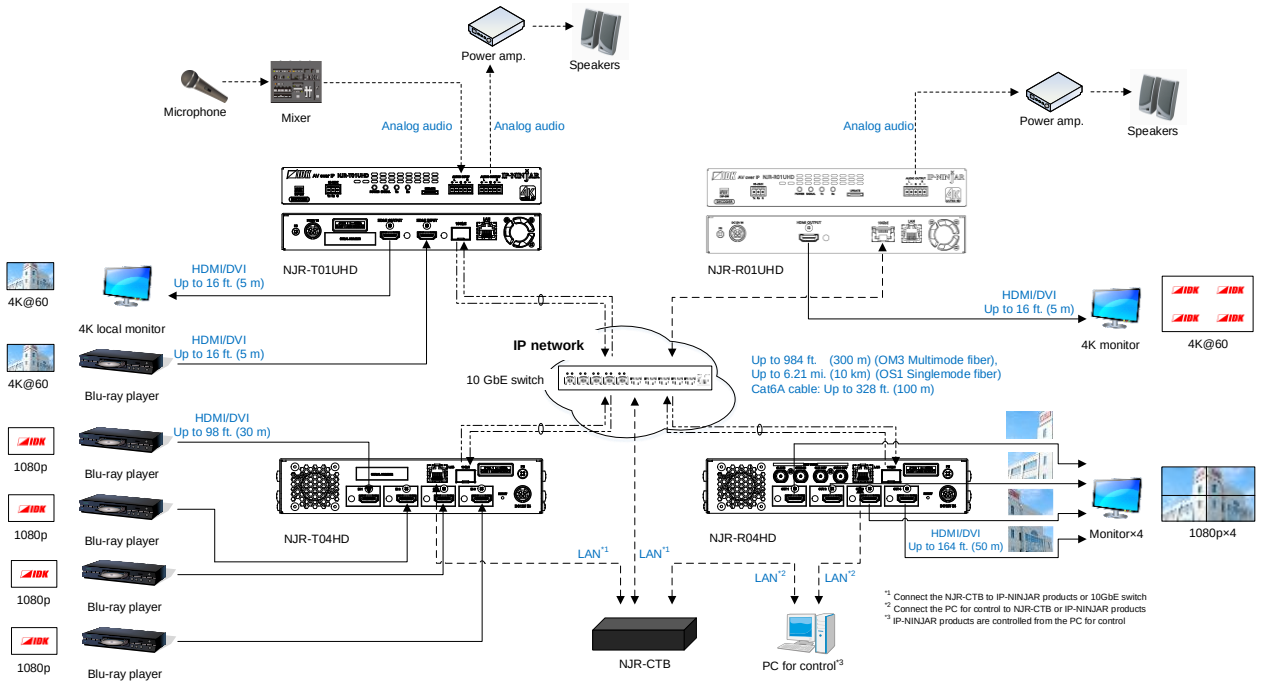
■ Application examples

<Used as network extender>



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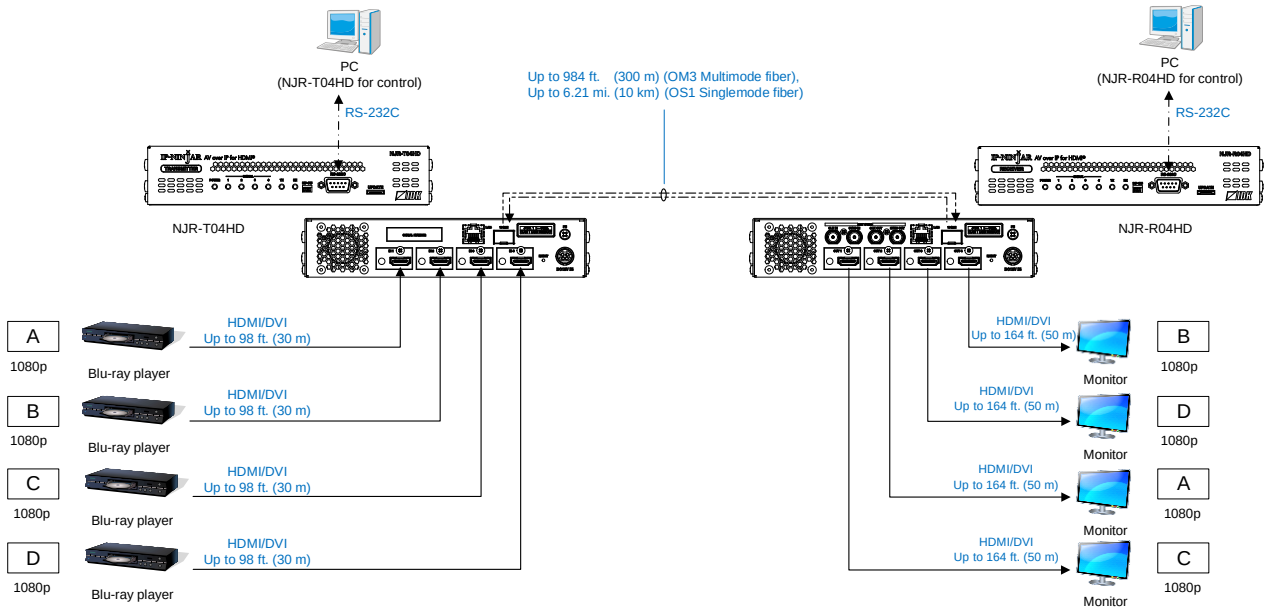

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[Features]

■ **Video**
- Up to 1080p/QWXGA (Reduced Blanking)
- HDCP 1.4
- Automatic input signal equalization
  Input : Up to 98 ft. (30 m) (NJR-T04HD)
  Output : Up to 164 ft. (50 m) (NJR-R04HD)
- Motion adaptive interlaced/progressive conversion
- Matrix switching
- Output up to four sink devices from an NJR-R04HD
- Scan conversion
- Aspect ratio control
- External sync I/O for videowall
- Transmission distances
  Up to 984 ft. (300 m) (OM3 Multimode fiber), Up to 6.21 mi. (10 km) (OS1 Singlemode fiber)

■ **Audio**
- Lip Sync (NJR-R04HD)

■ **Communication**
- Bidirectional RS-232C
- LAN

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

■ **Others**
- EDID emulation
- DDC buffer
- Connection Reset
- AC adapter with locking mechanism

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