



IP-NINJAR

AV over IP



A scalable 4K switching platform

Features and Key benefits

To meet the growing demand for 4K video, IDK has developed an innovative product for AV systems: IP-NINJAR, a game changing AV over IP solution for high definition signal extension, switching and manipulation. This 4K solution leverages off-the-shelf 10 Gb Ethernet switches and enables signal management of 4K@60 (4:4:4) signals with zero frame latency. Boasting unlimited scalability and flexible input/output configurations, IP-NINJAR brings a new concept of AV switching and distributing to the world of Pro AV.

System Configuration

- 10 GbE base scalable and flexible system configuration
- Matrix switching and extending video / audio signals
- 4K/8K Videowall and 4K Multiview
- Point-to-point transmission
- Monitable all connected devices status through network (Web GUI)

Video

- 4K@60 (4:4:4) / HDR
- HDMI 2.0 and HDCP 1.4 / 2.2
- 3G/HD/SD-SDI input and signal conversion to HDMI
- Zero frame latency with Standard Switching mode
- 2 frames latency at maximum with Fast and Scaling Switching mode

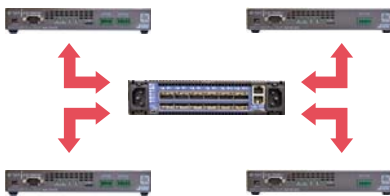
Audio

- Digital / Analog audio breakaway switching
- Embedding / De-embedding

KVM

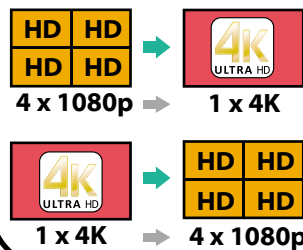
- KVM switching using external USB extenders

Matrix Switching & Distribution



Seamless switching

Signal Conversion



Multiview / PinP & Scaling



Selectable layout

KVM Switching



Keyboard Video Mouse

Extension

- Point-to-Point
- Between Unit and Switch port



MM : 984 ft. (300 m)
SM : 6.21 mi. (10 km)



Multi Format input

Control



Videowall & Scaling



4K Videowall

2018-01

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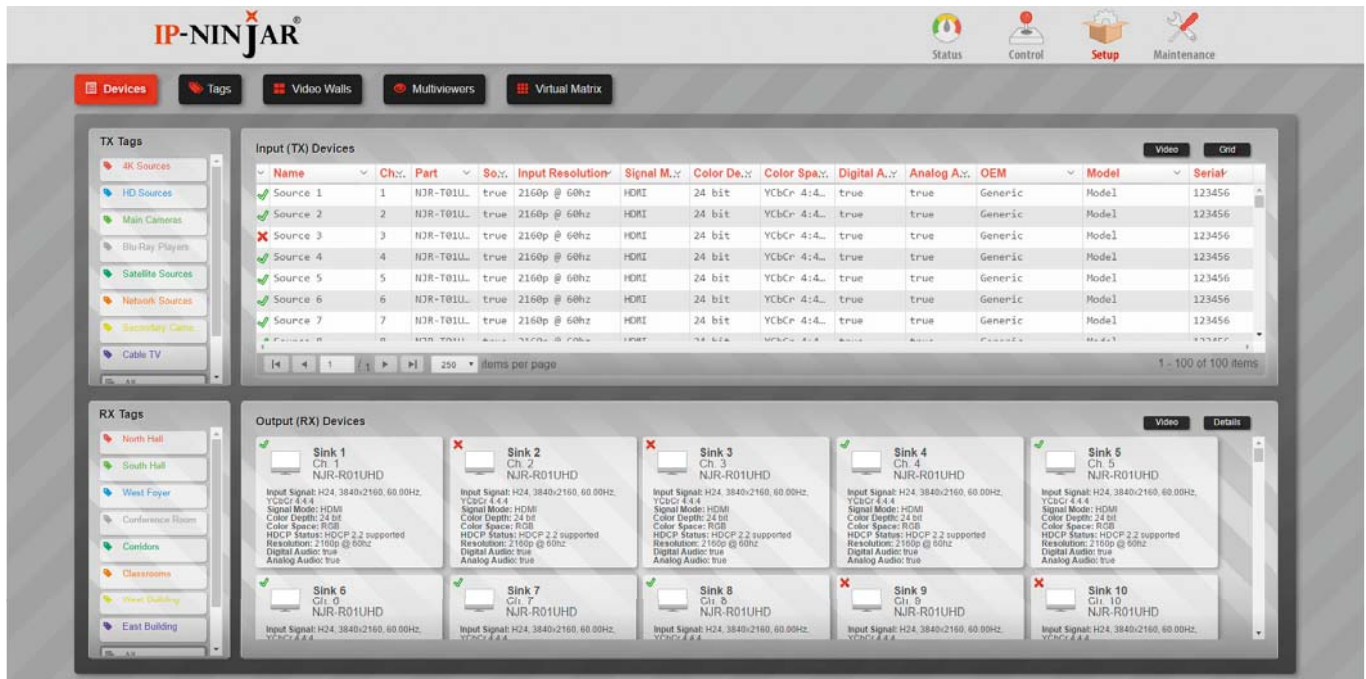
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NJR-CTB - Management & Control Platform for IP-NINJAR

The NJR-CTB is an advanced management & control platform that opens up the possibility of your IP-NINJAR AV over IP system. The Web GUI helps customers to easily manage the system. The NJR-CTB enables to control IP-NINJAR system from 3rd party external controllers.



NJR-CTB Key Features

Status

- Monitoring devices online / offline, AV signals info., HDCP status and stream type
- Alarm output using SNMP trap; Status alert sends to a system or registered email
- Remote support and trouble shooting

Control

- Breakaway switching for video, audio, USB, and RS-232C
- Independent USB switching from Web GUI
- KVM switching by linking 3rd party USB network extender

Setup

- Set up each device settings / link 3rd party USB extender to device for KVM switching
- Videowall / Multiview configuration using preset patterns
- Virtual Matrix set up to create different level of accessibility in a system
- "Tag" function for filtering devices in a system

Maintenance

- User accounts and authorization management
- Get system log, back up, and restore the system

Redundancy

- Available for NJR-CTB by connecting multiple NJR-CTB in a system
- Output video redundancy is available using Automatic Switching Function

Security

- HTTPS encrypted communication



4K@60 and HDCP 2.2 supported HDMI Network Extender | NJR-01UHD

The IDK NJR-01UHD is an over IP solution for high definition signal extension, switching and manipulation. This 4K solution leverages 10 Gb Ethernet switches and enables signal management of 4K@60 (4:4:4) signals with zero latency. The transmitter supports HDMI input, optical output and HDMI output up to 4K@60 (4:4:4). Additionally, extend and switch your standard 1GB LAN connection, RS-232C, and analog audio output.

Combined with the control box, the NJR-CTB, the NJR-01UHD is fully configurable and controllable over the LAN with a web browser.

•Features

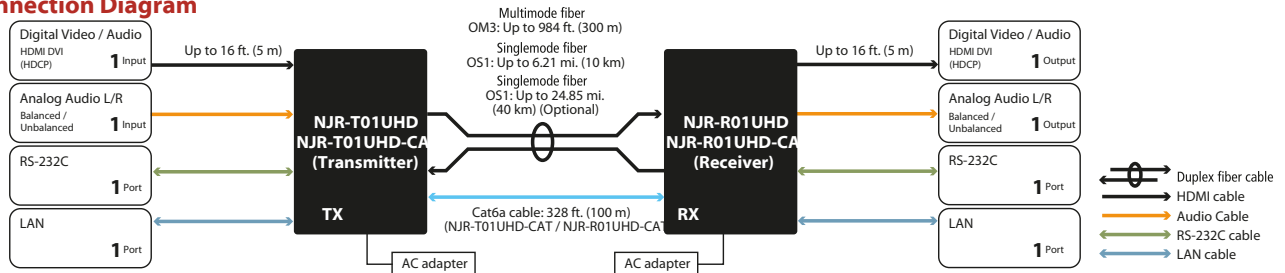
Video	• Up to 4K@60 (4:4:4) • HDCP 1.4 / 2.2 • HDR • Local monitor output (through the input signal) • Extension distances of each SFP+ module Multimode fiber (OM3): 984 ft. (300 m) Singlemode fiber (OS1): 6.21 mi. (10 km) Singlemode fiber (OS1): 24.85 mi. (40 km) (Optional) Cat6a cable: 328 ft. (100 m)
Audio	• Embedding (TX) / De-embedding
Communication	• RS-232C bidirectional communication • LAN transmission
Network	• Matrix switching, Videowall, Multiviewer, and Distribution over 10GbE switch • All TXs and RXs in network can be managed and controlled by NJR-CTB
Others	• Easy to re-build by adding transmitters and receivers • EDID emulation • DDC buffer • Connection Reset • AC adapter with locking mechanism



•Models

Model Number	Fiber Type	Max. Distance
NJR-T01UHD-MM / NJR-R01UHD-MM	Multimode	OM3: 984 ft. (300 m)
NJR-T01UHD-SM / NJR-R01UHD-SM	Singlemode	OS1: 6.21 mi. (10 km)
NJR-T01UHD-SM40 / NJR-R01UHD-SM40	Singlemode	OS1: 24.85 mi. (40 km) (Optional)
NJR-T01UHD-CAT / NJR-R01UHD-CAT	Cat6a cable	328 ft. (100 m)

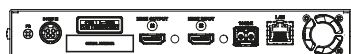
•Connection Diagram



•Specification

Model number				NJR-T01UHD (Transmitter)		NJR-R01UHD (Receiver)		
				MM / SM	CAT	MM / SM	CAT	
Input	Video	HDMI / DVI	Number / Signal	1 input / HDMI, DVI 1.0 HDCP 1.4 / 2.2, HDR, TMDs Single Link, Dot clock: 25 MHz to 600MHz, TMDs clock: 25 MHz to 300 MHz, TMDs data rate: 0.75 Gbps to 18 Gbps		1 input / 10 Gb Ethernet		
			Connector	1 HDMI Type A (19-pin), female		2 LC connectors		
			Others	Color depth: 24 bit, 30 bit, 36 bit Deep Color		RJ-45		
		Formats	480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K VGA / SVGA / XGA / WXGA (1280x768) / WXGA (1280x800) / Quad-VGA / SXGA / WXGA (1360x768) / WXGA (1366x768) / SXGA+ / WXGA+ / WXGA++ / UXGA / WSXGA+ / VESAHD / WUXGA / QWXGA / 4K					
	Audio	Digital	Number / Signal	1 input / Multi-channel linear PCM up to 8 channels Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit, Reference level: -20 dBFS, Max. input level: 0 dBFS		1 input / 10 Gb Ethernet		
			Connector	1 HDMI Type A (19-pin), female		2 LC connectors		
			Others	1 input / Stereo LR balanced and unbalanced signals Balanced signal Input impedance: 48 kΩ, Reference level: -10 dBu, Max. input level: +10 dBu Unbalanced signal Input impedance: 24 kΩ, Reference level: -10 dBu, Max. input level: +10 dBu		-		
		Analog	Number / Signal	1 input / Stereo LR balanced and unbalanced signals Balanced signal Output impedance: 100 Ω, Reference level: -10 dBu, Max. output level: +10 dBu Unbalanced signal Output impedance: 50 Ω, Reference level: -10 dBu, Max. output level: +10 dBu		-		
			Connector	1 terminal block (5-pin)		-		
			Others	480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K VGA / SVGA / XGA / WXGA (1280x768) / WXGA (1280x800) / Quad-VGA / SXGA / WXGA (1360x768) / WXGA (1366x768) / SXGA+ / WXGA+ / WXGA++ / UXGA / WSXGA+ / VESAHD / WUXGA / QWXGA / 4K				
Output	Video	HDMI / DVI	Number / Signal	1 output / HDMI, DVI 1.0 HDCP 1.4 / 2.2, HDR, TMDs Single Link, Dot clock: 25 MHz to 600 MHz, TMDs clock: 25 MHz to 300 MHz, TMDs data rate: 0.75 Gbps to 18 Gbps		-		
			Connector	2 LC connectors		RJ-45		
			Others	1 HDMI Type A (19-pin), female		-		
		Formats	Color depth: 24 bit, 30 bit, 36 bit Deep Color 480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K VGA / SVGA / XGA / WXGA (1280x768) / WXGA (1280x800) / Quad-VGA / SXGA / WXGA (1360x768) / WXGA (1366x768) / SXGA+ / WXGA+ / WXGA++ / UXGA / WSXGA+ / VESAHD / WUXGA / QWXGA / 4K					
		Audio	Digital	Number / Signal	1 output / 10 Gb Ethernet Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit, Reference level: -20 dBFS, Max. output level: 0 dBFS		1 output / Multi-channel linear PCM up to 8 channels Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit, Reference level: -20 dBFS, Max. output level: 0 dBFS	
				Connector	2 LC connectors		1 HDMI Type A (19-pin), female	
	Others			1 output / Stereo LR balanced and unbalanced signals Balanced signal Output impedance: 100 Ω, Reference level: -10 dBu, Max. output level: +10 dBu Unbalanced signal Output impedance: 50 Ω, Reference level: -10 dBu, Max. output level: +10 dBu		-		
	Fiber optic cable	Suitable cable	Duplex fiber cable, SFP+ module (2 LC connectors)		Cat6a UTP / STP cable		Cat6a UTP / STP cable	
			SFP+ for Multimode: PC (Recommended), SFP+ for Singlemode: UPC (Recommended), SPC supported * APC is not supported		SFP+ for Multimode: PC (Recommended), SFP+ for Singlemode: UPC (Recommended), SPC supported * APC is not supported		-	
		Polishing						
Signal transmission distance			Multimode fiber (OM3): 984 ft. (300 m), Singlemode fiber (OS1): 6.21 mi. (10 km), Singlemode fiber (OS1): 24.85 mi (40 km) (Optional)		Cat6a UTP / STP: 328 ft. (100 m)		Cat6a UTP / STP: 328 ft. (100 m)	
Control	Serial control port	Number / Signal	1 port / Full duplex up to 115.2 kbps					
	LAN control port	Number / Signal	1 port / 10Base-T (Auto Negotiation), 100Base-TX (Auto Negotiation), 1000Base-T (Auto Negotiation), Auto MDI/MDI-X					
General	AC adapter	Input: 100 - 240 VAC ± 10%, 50 Hz / 60 Hz ± 3 Hz Output: 12 VDC, 3 A (A dedicated AC adapter is provided)						
	Power consumption	About 18 Watts						
	Dimensions	8.3 (W) × 1.2 (H) × 5.5 (D)" (210 (W) × 30 (H) × 140 (D) mm) (EIA thin-type half rack wide) (Excluding connectors and the like)						
	Weight	2.2 lbs. (1 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)						
		2.2 lbs. (1 kg)						

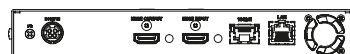
•Rear Panel



NJR-T01UHD



NJR-R01UHD



NJR-T01UHD-CAT



NJR-R01UHD-CAT

2018-01

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SDI Network extender | NJR-T01SDI

The IDK NJR-T01SDI is an SDI network extender (transmitter) that enables a long-haul transmission of SDI signals over a fiber optic cable. The NJR-T01SDI RS-232C supports bidirectional communication and LAN transmission.

The NJR-T01SDI can be used with other IP-NINJAR products.*

*Please use this product with a combination of IP-NINJAR series products.
It cannot be connected to OPF series units or FDX.

•Features

Video	•Up to 1080p •Local monitor output •Maximum extension distance Multimode fiber (OM3): 984 ft. (300 m) Singlemode fiber (OS1): 6.21 mi. (10 km) 24.85 mi. (40 km) (Optional)
Audio	•Embedding / De-embedding
Communication	•RS-232C bidirectional communication •LAN transmission
Network	•10 GbE switch enables the following operations for multiple IP-NINJAR transmitters and receivers: extension, distribution, matrix switching, videowall, and multiview •All transmitters and receivers in the network can be managed and controlled by NJR-CTB •IP-NINJAR transmitters and receivers can easily be added and replaced
Others	•AC adapter with locking mechanism



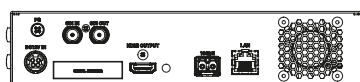
•Models

Model Number	Fiber Type	Max. Distance
NJR-T01SDI-MM	Multimode	OM3: 984 ft. (300 m)
NJR-T01SDI-SM	Singlemode	OS1: 6.21 mi. (10 km)
NJR-T01SDI-SM40	Singlemode	OS1: 24.85 mi. (40 km) (Optional)

•Specification

Input	Video	HDMI / DVI	Number / Signal	1 input / SMPTE259M-C (SD-SDI), SMPTE292M (HD-SDI), SMPTE424M (3G-SDI) 0.8 V _[p-p] / 75 Ω	
			Connector	1 BNC	
		Formats	480i / 480p / 576i / 576p / 720p / 1080i / 1080p		
	Audio	Digital	Number / Signal	1 input / Multi-channel linear PCM up to 8 channels (two GROUPs can be selected from GROUP1 to 4) Sampling frequency: 48 kHz Sample size: 16 bit to 24 bit Reference level: -20 dBFS Max. input level: 0 dBFS	
			Connector	1 BNC	
		Analog	Number / Signal	1 input / Stereo LR balanced and unbalanced signals Balanced signal Input impedance: 48 kΩ Reference level: -10 dBu Max. input level: +10 dBu Unbalanced signal Input impedance: 24 kΩ Reference level: -10 dBu Max. input level: +10 dBu	
			Connector	1 terminal block (5-pin)	
	Output	Video	HDMI / DVI	Number / Signal	1 output / Optical signal for extension
				Connector	2 LC connectors
Number / Signal				1 output / HDMI, DVI 1.0 TMDS Single Link	
Connector				1 HDMI Type A (19-pin), female	
			Formats	480i / 480p / 576i / 576p / 720p / 1080i / 1080p	
	Audio	Digital	Number / Signal	1 input / Multi-channel linear PCM up to 8 channels Sampling frequency: 32 kHz to 192 kHz Sample size: 16 bit to 24 bit Reference level: -20 dBFS Max. input level: 0 dBFS	
			Connector	2 LC connectors	
		Analog	Number / Signal	1 output / Stereo LR balanced and unbalanced signals Balanced signal Output impedance: 100 Ω Reference level: -10 dBu Max. output level: +10 dBu Unbalanced signal Output impedance: 50 Ω Reference level: -10 dBu Max. output level: +10 dBu	
			Connector	1 terminal block (5-pin)	
Fiber optic cable	Suitable cable	Duplex fiber cable, SFP+ module (2 LC connectors)			
	Polishing	SFP + for Multimode: PC (recommended) SFP + for Singlemode: UPC (recommended), SPC APC is not supported			
Signal transmission distance				Multimode fiber (OM3): 984 ft. (300 m) Singlemode fiber (OS1): 6.21 mi. (10 km)	
Control	Serial control port	Number / Signal	1 port / Full duplex up to 115.2 kbps		
		Connector	1 D-Sub (9-pin), male		
	LAN control port	Number / Signal	1 port / 10Base-T (Auto Negotiation), 100Base-TX (Auto Negotiation), 1000Base-T (Auto Negotiation), Auto MDI/MDI-X		
		Connector	1 RJ-45		
General	AC adapter		Input: 100 V - 240 VAC ± 10%, 50 Hz / 60 Hz ± 3 Hz Output: 12 VDC, 3 A (A dedicated AC adapter is provided)		
	Power consumption		TBD		
	Dimensions		8.3 (W) × 1.7 (H) × 5.5 (D)" (210 (W) × 44 (H) × 140 (D) mm) (EIA half rack wide, 1U high) (Excluding connectors and the like)		
	Weight		TBD		
	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)		

•Rear Panel



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IP-NINJAR Management and Control Box | NJR-CTB

The IDK NJR-CTB is the control device to command comprehensively the NJR-01UHD and NJR-04HD. It allows you to check connections and communications among products, switch video, control videowall, and so on using WEB browser or external control devices via LAN.

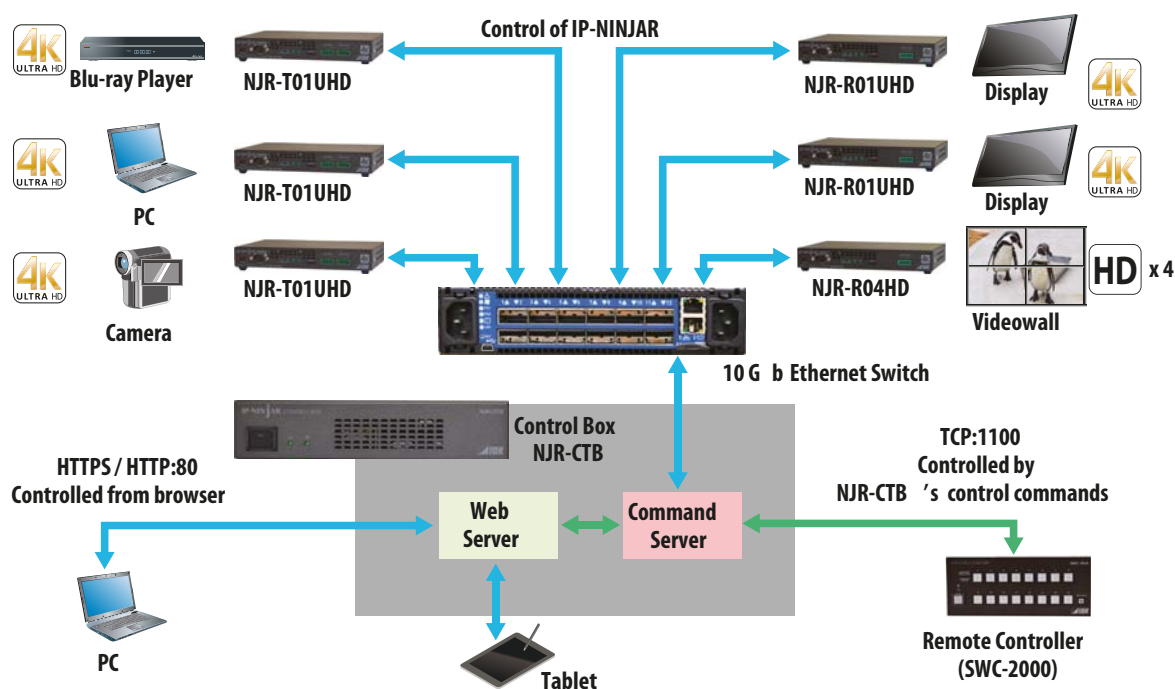
The NJR-CTB enables extension, distribution, matrix switching, videowall, multiview using with IP-NINJAR series transmitters, receivers, and a 10GbE switch. Additionally, the Web GUI allows you to set, manage and control IP-NINJAR products that are connected to a network.

•Features

Management	- Automatic recognition for IP-NINJAR units which are in a network and showing the list - Device name registration and group registration - Preset pattern registration
Control input	- WEB browser control (no need to install extra software or application software) - External control via control commands
Control output	Sending control command to external devices
Others	AC adapter with locking mechanism



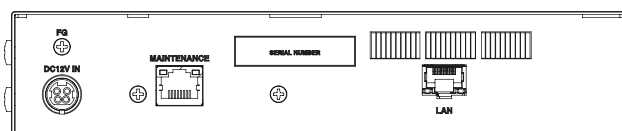
•Application Example



•Specification

IP-NINJAR products management	Number of units		Up to 512 units
	Number of groups		Up to 32 groups
Display management capability	Preset		Up to 256 patterns
	Videowall		Maximum configuration up to 5 x 5
Network	Protocol		TCP/IP, UDP/IP, HTTP, ICMP, and DHCP
	Number of connection		Up to 8 connections
External control	LAN	Number / Signal	2 ports / LAN
		Connector	100Base-T (Auto Negotiation), / 100Base-TX (Auto Negotiation), / 1000Base-T (Auto Negotiation), Auto MDI / MDI-X
General	AC adapter		Input: 100 - 240 VAC $\pm$ 10%, 50 Hz / 60 Hz $\pm$ 3 Hz Output: 12 VDC 3 A (A dedicated AC adapter is provided)
	Power consumption		About 16 Watts
	Dimensions		8.3 (W) x 1.7 (H) x 5.9 (D)" (210 (W) x 44 (H) x 150 (D) mm) (EIA half rack wide, 1U high) (Excluding connectors and the like)
	Weight		2.6 lbs. (1.2 kg)
	Temperature		Operating: 32°F to 104°F (0°C to +40°C) Storage: -4°F to +140°F (-20°C to +60°C)
	Humidity		Operating / Storage humidity: 20% to 90% (Non Condensing)

•Rear Panel



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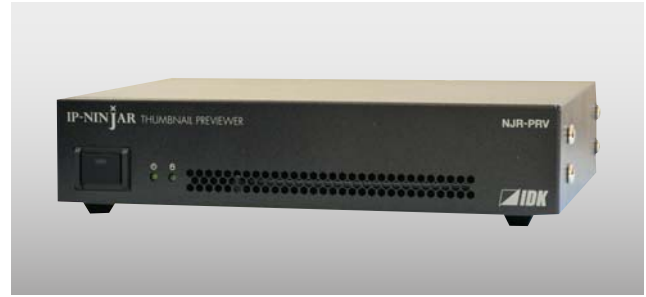
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Thumbnail Previewer | NJR-PRV

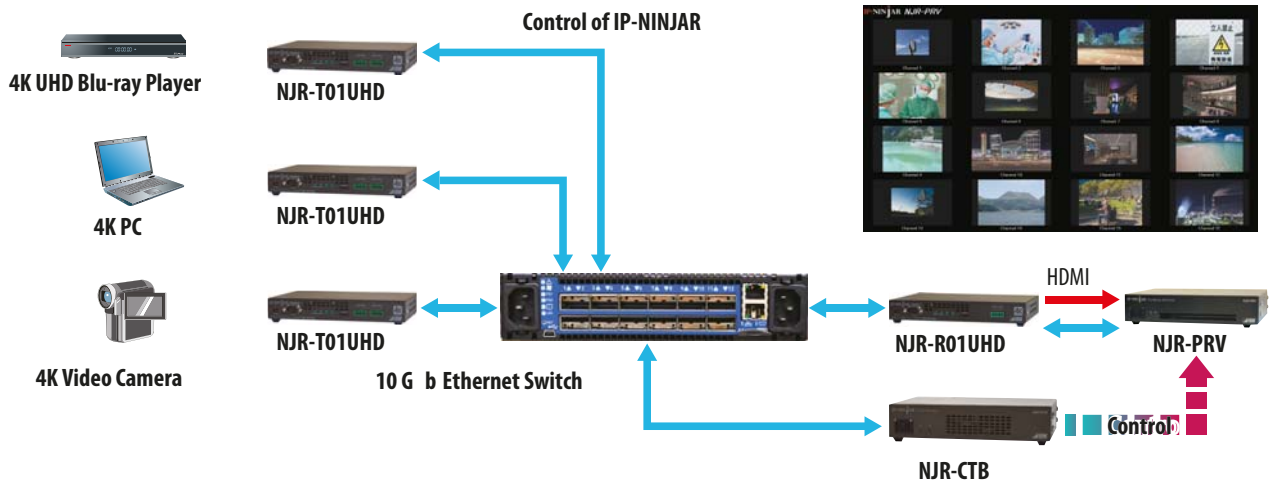
The IDK NJR-PRV is a thumbnail previewer for NJR-R01UHD output video.
NJR-PRV video can be encoded to H.264 format and transmitted in unicast or multicast stream.

•Features

Thumbnail preview	-Video output from NJR-R01UHD can be input, captured and thumbnailed periodically -NJR-R01UHD's input is automatically switched if using with NJR-CTB; multiple channels can be checked on a single screen -Up to 128 patterns can be registered; up to 10 x 10 can be displayed
Encode	-Video can be encoded to H.264 format and transmitted in unicast or multicast stream
External control	-Remote control using control command
Others	-AC adapter with locking mechanism



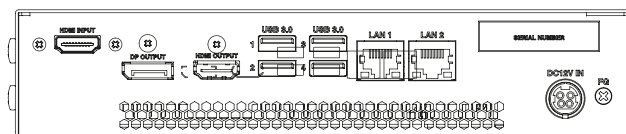
•Application Example



•Specification

Input	1 input	
Output	1 output	
Video	Input	Resolution
	Output	Resolution
		Up to 1920 x 1080@60
		Up to 3840 x 2160@30
Protocol	IP, ICMP, IGMPv3, TCP, UDP, HTTP, RTSP, RTP, RTCP	
Connector	LAN	2 RJ-45 100Base-TX (Auto Negotiation) / 1000Base-TX (Auto Negotiation)
	HDMI	Input: 1 HDMI Type A (19-pin), female Output: 1 HDMI Type A (19-pin), female
	DisplayPort	Output: 1 DisplayPort, female
	USB 3.0	4 USB 3.0 Type-A, female
	USB 3.0	Up to 128 patterns can be registered; Up to 10 x 10 can be displayed
Features	Display layout	Capture interval: 5 to 60 sec. (HDCP not supported) Capture format: .jpg
	Thumbnail capture	Transport stream: Unicast / Multicast Coding system: H.264 BP / MP / HP Coding rate: 8 Mbps Frame rate: Up to 60 fps Resolution: Up to 1920 x 1080
	Encode	
General	AC adapter	Input: 100 V - 240 VAC $\pm 10\%$, 50 Hz / 60 Hz ± 3 Hz Output: DC 12 V 3 A (A dedicated AC adapter is provided)
	Power consumption	TBD
	Dimensions	8.3 (W) X 1.7 (H) X 5.9 (D)" (210 (W) X 44 (H) X 150 (D) mm) (EIA half rack wide, 1U high) (Excluding connectors and the like)
	Weight	TBD
	Temperature	TBD
	Humidity	TBD

•Rear Panel



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