IP-NINJAR
Video over IP

IDK with your vision, Always.

A scalable 4K switching platform

IP-NINJAR Features and Key benefits

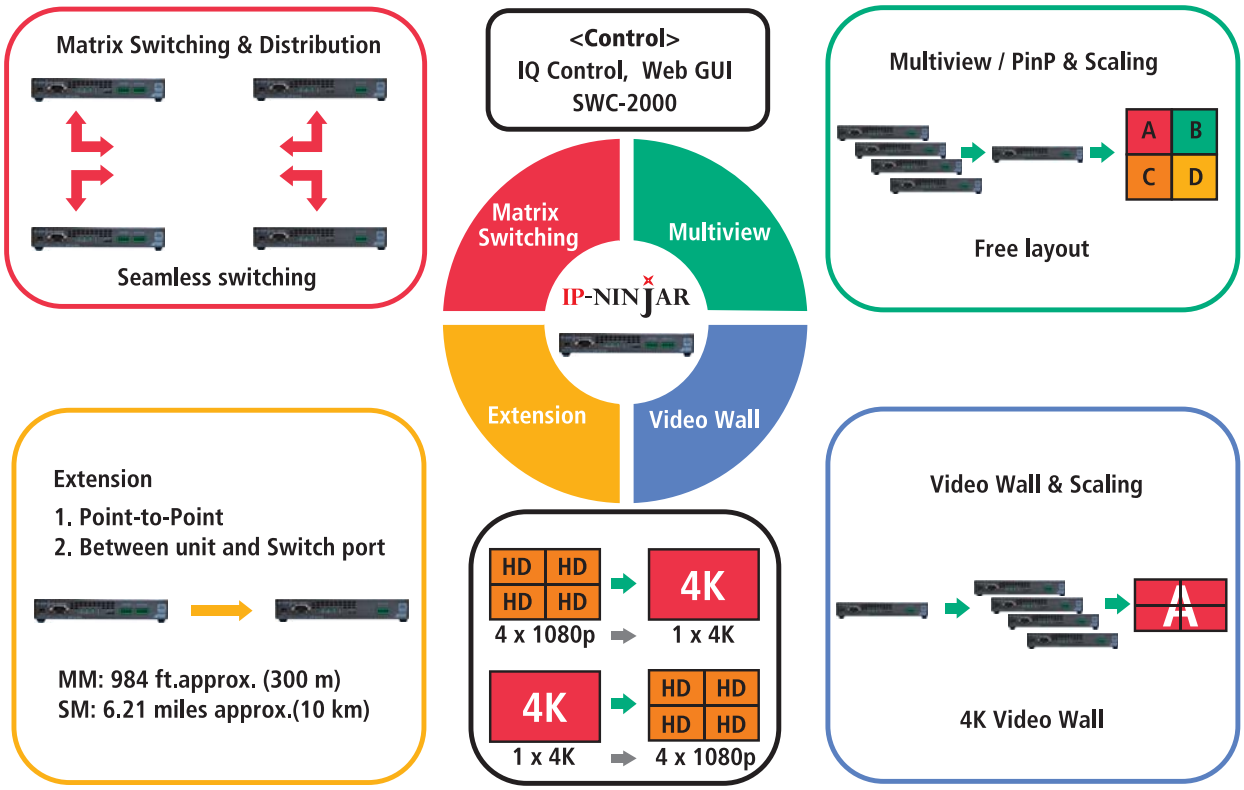
Features

- Switching and extending true 4K / UHD 4:4:4 at 60 Hz video over IP switches
- Composing video for multi-view and video-wall applications
- Transmitting uncompressed (pixel-to-pixel) video with zero frame latency
- Supporting point-to-point transmission
- Unlimited scalable and flexible input / output configuration
- Supporting HDMI 2.0 and HDCP 1.4 / 2.2
- Supporting GbE, RS-232C and TCP / IP

Key benefits

- Can be integrated into the existing network systems
- Saving costs by replacing AV switches with IP switches
- Distributing infinity number of source devices to any number of sink devices
- Quick and easy installation
- User-friendly control software
- Manage / Setup / Control all connected units via control box

IP-NINJAR What can IP-NINJAR do?



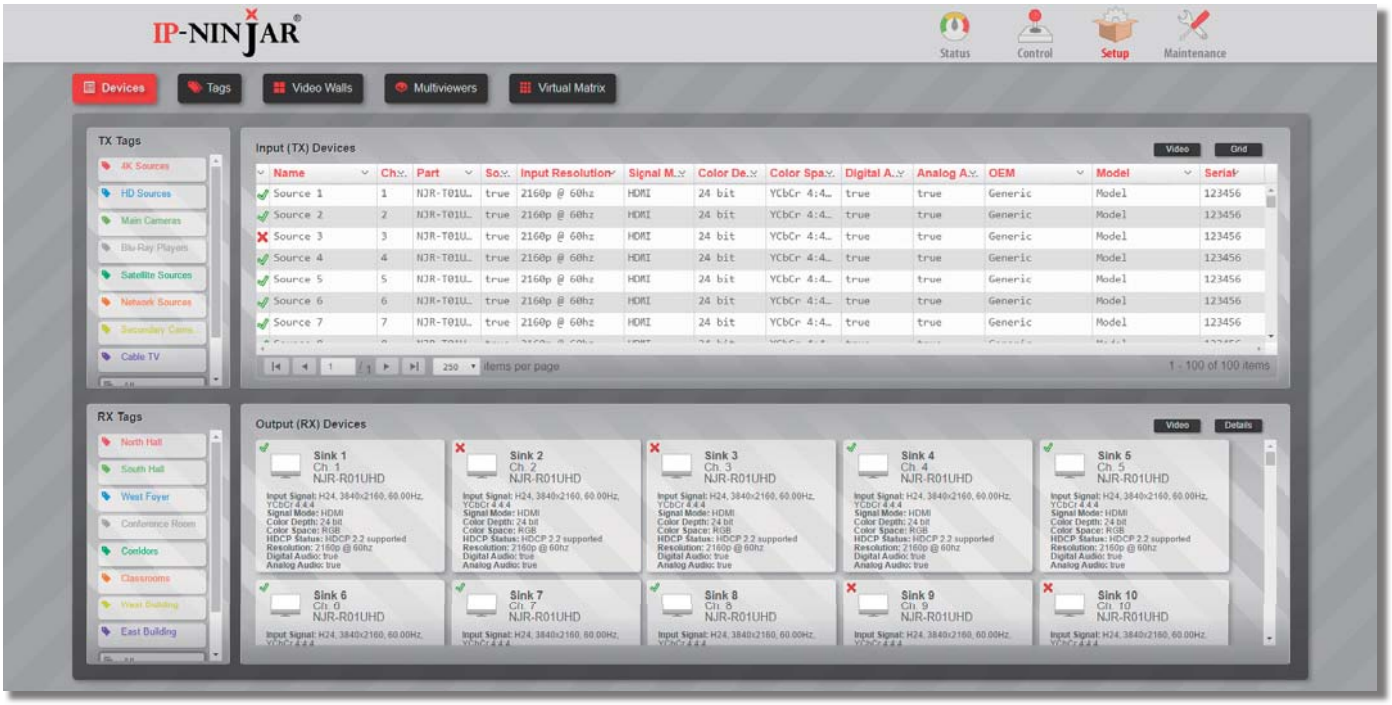
“Setup”, “Manage”, and “Control” by Control Box

The IP-NINJAR system provides management and control environment for a system using control box NJR-CTB. The NJR-CTB provides “Web GUI”, and it enables easy system maintenance for customers. It also enables to control all system using 3rd party external controllers through the control box.

- **Setup:** setting all IP-NINJAR devices to meet customer’s system requirements
  - Details of all connected IP-NINJAR units (Device setup)
  - Configure Video Wall configuration
  - Configure Multi-View configuration

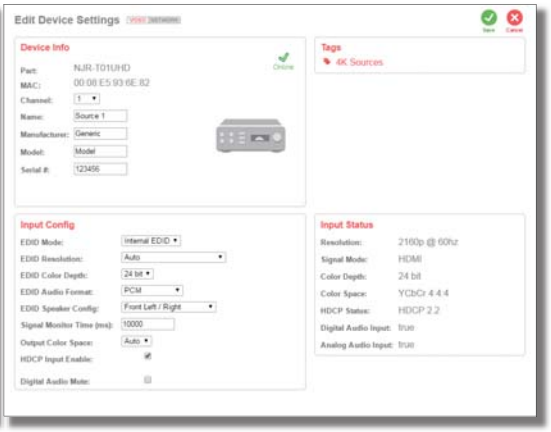
- **Status:** Showing various kinds of device status which are connected in a system
- **Device Tagging:** It provides grouping and filtering capabilities to maintain a system easily
- **Control:** Executing registered preset / external device commands via LAN / RS-232C

Setup & Status

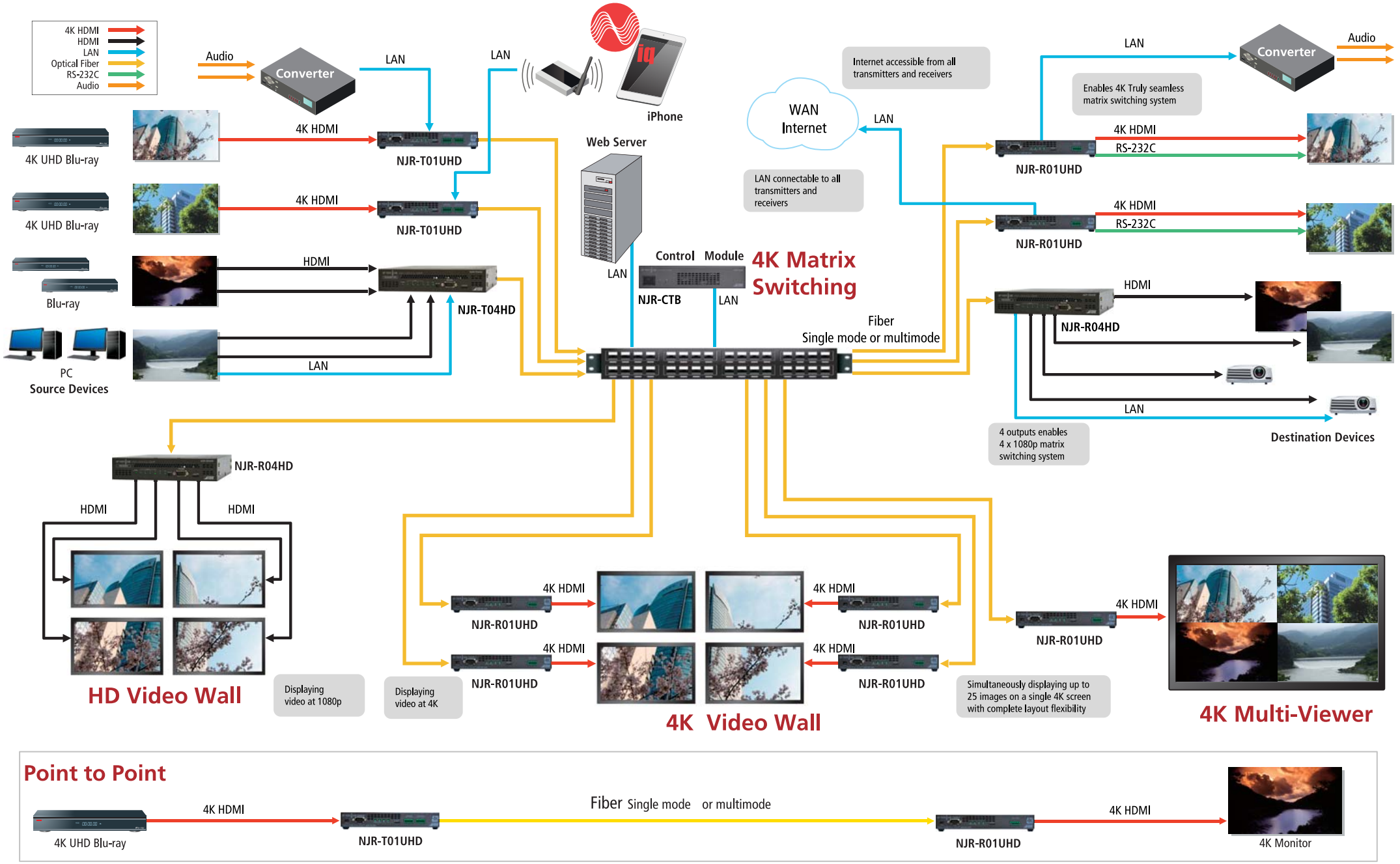


Device Tagging

Device setup



IP-NINJAR IP/Base-4K Solution



Point to Point

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

The IDK NJR-T01UHD / NJR-R01UHD is a transmitter and receiver set for long distance transmission of HDMI signals over a fiber optic cable.
This extender can transmit 4K@60 video signals that have four times the resolution of full HD, and it supports RS-232C bidirectional communication and LAN transmission.

The NJR-T01UHD/NJR-R01UHD can be used not only as a set of transmitter and receiver but also as a transmitter or receiver of "IP-NINJAR" series. When NJR-T01UHD and NJR-R04HD are used together in a system, NJR-R04HD can output 4K video image as four 1080p signals. When NJR-R01UHD and NJR-T04HD are used together in a system, NJR-R01UHD can output four 1080p signals from NJR-T04HD as one 4K video image.
It cannot be connected to OPF series units or FDX.

•Features

Video
- **•Up to 4K@60 (4:4:4) •HDCP 1.4 / 2.2 supported •HDR supported**
- **•Local monitor output (through the input signal)**
- •Extension distances of each SFP+ module
  - Multimode fiber (OM3): 984.26 ft. approx. (300 m)
  - Singlemode fiber (OS1): 6.21 miles approx. (10 km)
  - Singlemode fiber (OS1): 24.84 miles approx. (40 km) (Optional)

Audio
- •Analog audio embedded (TX) •Analog audio de-embedded (TX / RX)

Communication
- •RS-232C bidirectional communication •LAN transmission

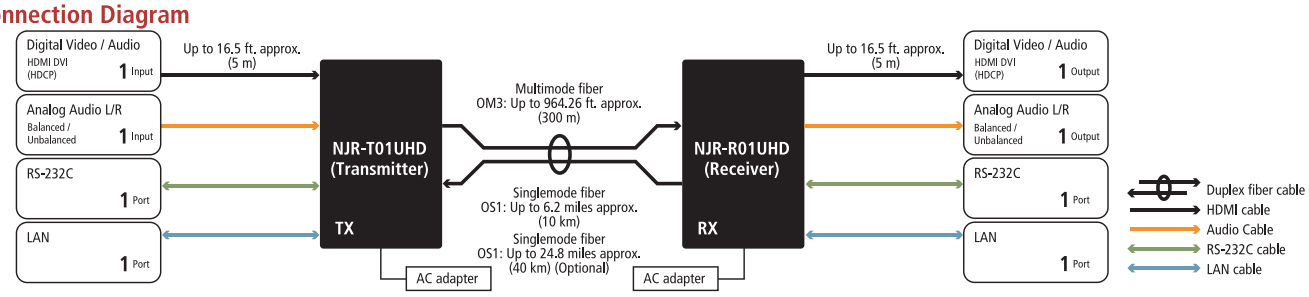
Network
- •Matrix switching, Video Wall, distribution, and extension using 10GbE switch
- •All TX and RX in network can be managed and controlled by NJR-CTB •Easy to build up a system later by adding transmitters and receivers. •Video Wall

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

•Product Selection

Model Number	Fiber Type	Max. Distance
NJR-T01UHD-MM	Multimode	OM3: 984 ft. approx. (300 m)
NJR-R01UHD-MM		
NJR-T01UHD-SM	Singlemode	OS1: 6.2 miles approx. (10 km)
NJR-R01UHD-SM		
NJR-T01UHD-SM40	Singlemode	OS1: 24.8 miles approx. (40 km)
NJR-R01UHD-SM40		

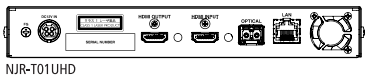
•Connection Diagram



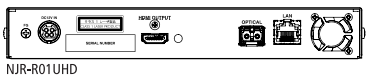
•Specification

Model number				NJR-T01UHD (Transmitter)	NJR-R01UHD (Receiver)
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 / Optical signal for extension
			Connector	1 female HDMI Type A	2 LC connectors
		Others		Color depth: 24 bit, 30 bit, 36 bit Deep Color	
		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+ / VESA1080 / 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 bit: 16 bit to 24 bit Reference level: -20 dBFS, Max. input level: 0 dBFS	1 input / Optical signal for extension
			Connector	1 female HDMI Type A	2 LC connectors
		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 blocks (5-pin)	-
Output	Video	HDMI / DVI	Number / Signal	1 output / Optical signal for extension	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	1 female HDMI Type A
			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	1 female HDMI Type A	-
		Others		Color depth: 24 bit, 30 bit, 36 bit Deep Color	
		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+ / VESA1080 / WUXGA / QWXGA / 4K	
	Audio	Digital	Number / Signal	1 output / Optical signal for extension	1 output / Multi-channel linear PCM up to 8 channels Sampling frequency: 32 kHz to 192 kHz, Sample bit: 16 bit to 24 bit Reference level: -20 dBFS, Max. output level: 0 dBFS
			Connector	2 LC connectors	1 female HDMI Type A
		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	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 blocks (5-pin)	1 terminal blocks (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 supported * APC is not supported	
Signal transmission distance				Multimode fiber (OM3): 984 ft. approx. (300 m), Singlemode fiber (OS1): 6.2 miles approx. (10 km)	
Control	Serial control port		Number / Signal	1 port / Full duplex up to 115.2 kbps	
			Connector	1 male 9-pin D-Sub	
	LAN control port		Number / Signal	1 port / 10Base-T, 100Base-TX, 1000Base-T (Auto Negotiation), Auto MDI/MDI-X	
			Connector	1 RJ-45	
General	AC adapter			Input: 100 - 240 VAC ± 10 %, 50 Hz / 60 Hz ± 3 Hz Output: 12 VDC, 3 A 36 Watts (AC adapter is supplied)	
	Power consumption			About 13 Watts	About 14 Watts
	Dimensions			8.27 (W) × 1.18 (H) × 5.51 (D)" (approx.) / 210 (W) × 30 (H) × 140 (D) mm (EIA 1/2U rack width, lower height, not including projections)	
	Weight			1.98 lbs. approx. (0.9 kg)	1.98 lbs. approx. (0.9 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)	

•Rear Panel



NJR-T01UHD



NJR-R01UHD

4Channel HDMI Network Extender | NJR-04HD

The IDK NJR-T04HD / NJR-R04HD is an HDMI network transmitter and receiver set which have built-in scan converter and scaler.
This extender can transmit 4 channels of HDMI signal by one duplex fiber, and it supports RS-232C bidirectional communication and LAN transmission.
It can be used for 4 inputs and 4 outputs digital matrix switcher or splitter. NJR-R04HD can configure four multi-display Video Wall by one unit, and it can configure larger Video Wall by using multiple units with synchronization signals.

•Features

Video
- **•Up to 1080p / QWXGA (RB)*** *(RB) = Reduced Blanking
- **•HDCP1.4 supported**
- **•Built-in Digital Cable EQ**
  - Input: From 33 ft. to 99 ft. approx. (10 m to 30 m) (NJR-T04HD)
  - Output: From 33 ft. to 165 ft. approx. (10 m to 50 m) (NJR-R04HD)
- •Extension distances of each SFP + module
  - Multimode fiber (OM3): 984.26 ft. approx. (300 m)
  - Singlemode fiber (OS1): 6.21 miles approx. (10 km)
  - Singlemode fiber (OS1): 24.84 miles approx. (40 km) (Option)
- •Motion adaptive I/P conversion •Scan conversion •Aspect ratio control

Audio
- •Lip Sync (up to 8 frame: NJR-R04HD)

Communication
- •RS-232C bidirectional communication •LAN transmission

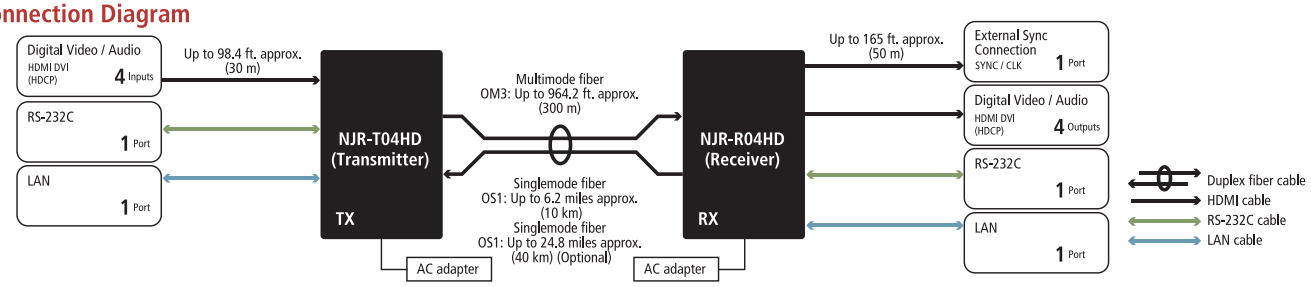
Network
- •Matrix switching, Video Wall, distribution, and extension using 10 GbE switch
- •All TX and RX in network can be managed and controlled by NJR-CTB •Easy to build up a system later by adding transmitters and receivers •Video Wall

Others
- •EDID emulation •Connection Reset

•Product Selection

Model Number	Fiber Type	Max. Distance
NJR-T04HD-MM	Multimode	OM3: 984 ft. approx. (300 m)
NJR-R04HD-MM		
NJR-T04HD-SM	Singlemode	OS1: 6.2 miles approx. (10 km)
NJR-R04HD-SM		
NJR-T04HD-SM40	Singlemode	OS1: 24.8 miles approx. (40 km)
NJR-R04HD-SM40		

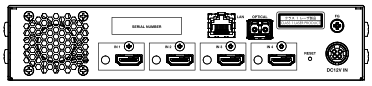
•Connection Diagram



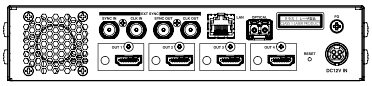
•Specification

Model number				NJR-T04HD (Transmitter)	NJR-R04HD (Receiver)
Input	Video	HDMI / DVI	Number / Signal	4 inputs / HDMI, DVI 1.0, HDCP 1.4, TMDS Single Link Dot clock: 25 MHz to 165 MHz, TMDS clock: 25 MHz to 225 MHz	1 input / Optical signal for extension
			Connector	1 female HDMI Type A	2 LC connectors
		Formats		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+ / VESA1080 / WUXGA / QWXGA * WUXGA / QWXGA are only supported by Reduced Blanking	
		Color depth		24 bit, 30 bit, 36 bit Deep Color	
		Others		Built-in cable EQ, EDID emulation	-
	Audio	Digital	Number / Signal	4 inputs / Multi-channel linear PCM up to 8 channels Sampling frequency: 32 kHz to 192 kHz, Sample bit: 16 bit to 24 bit Reference level: -20 dBFS, Max. input level: 0 dBFS	1 input / Optical signal for extension
			Connector	1 female HDMI Type A	2 LC connectors
Output	Video	HDMI / DVI	Number / Signal	1 output / Optical signal for extension	4 outputs / HDMI , DVI 1.0, HDCP 1.4 , TMDS Single Link Dot clock: 25 MHz to 165 MHz, TMDS clock: 25 MHz to 225 MHz
			Connector	2 LC connectors	1 female HDMI Type A
		Formats		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+ / VESA1080 / WUXGA / QWXGA * WUXGA / QWXGA are only output as Reduced Blanking	
		Color depth		24 bit, 30 bit, 36 bit Deep Color	
		Others		-	Built-in cable EQ
	Audio	Digital	Number / Signal	1 output / Optical signal for extension	4 outputs / Multi-channel linear PCM up to 8 channels Sampling frequency: 32 kHz to 192 kHz, Sample bit: 16 bit to 24 bit Reference level: -20 dBFS, Max. input level: 0 dBFS
			Connector	2 LC connectors	1 female HDMI Type A
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 supported * APC is not supported	
Signal transmission distance			Fiber	Multimode fiber (OM3): 984.25 ft .approx. (300 m) Singlemode fiber (OS1): 6.2 miles .approx. (10 km)	
			HDMI (EQ)	Max. 98.43 ft. approx. (30 m)	Max. 164.04 ft. approx. (50 m)
Control	Serial control port		Number / Signal	1 port / Full duplex up to 115.2 kbps	
			Connector	1 male 9-pin D-Sub	
	LAN control port		Number / Signal	1 port / 10Base-T, 100Base-TX, 1000Base-T (Auto Negotiation), Auto MDI/MDI-X	
			Connector	1 RJ-45	
Functions	Scan conversion			Motion adaptive I/P conversion Aspect ratio control	Aspect ratio control
	Others			Matrix switching	Matrix switching, Lipsync (up to 8 frame), Connection Reset
General	AC adapter			Input: 100 - 240 VAC ± 10 %, 50 Hz / 60 Hz ± 3 Hz Output: 12 VDC, 5 A 60 Watts (AC adapter is supplied)	
	Power consumption			About ** Watts	About ** Watts
	Dimensions			8.27 (W) × 1.73 (H) ×9.84 (D)" approx. (210 (W) × 44 (H) × 250 (D) mm) (EIA 1/2U rack width, lower height, not including projections)	
	Weight			** lbs. approx. (** kg)	** lbs. approx. (** 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)	

•Rear Panel



NJR-T04HD



NJR-R04HD

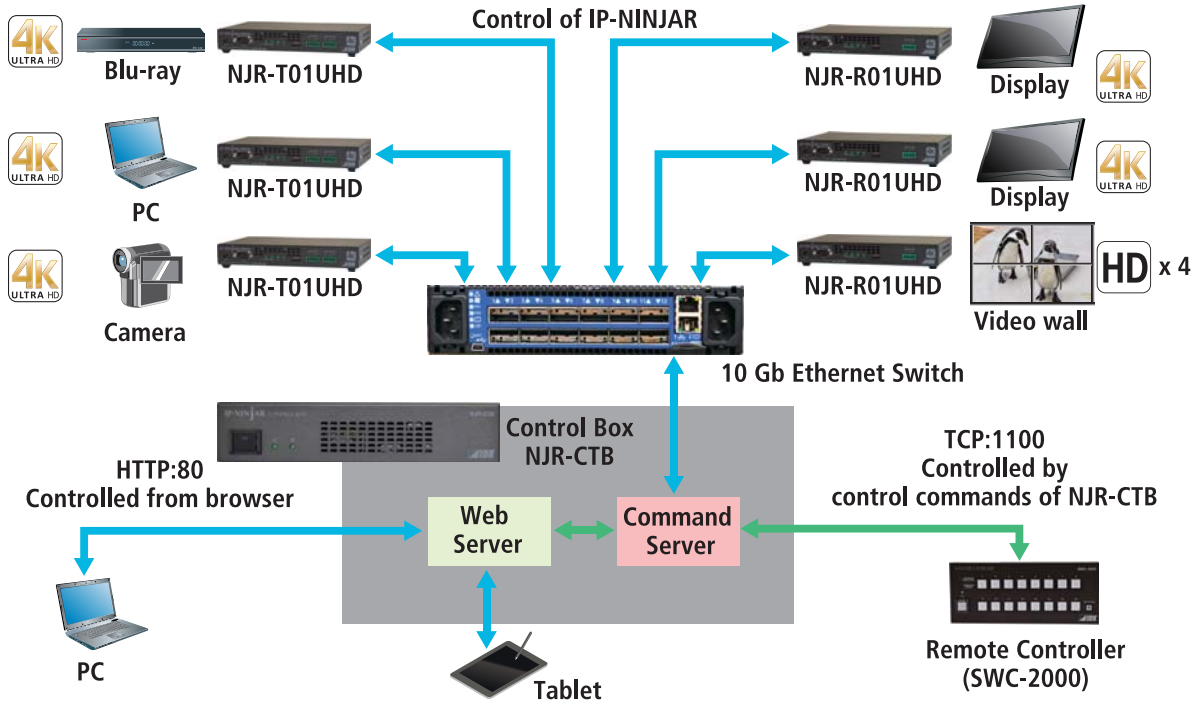
IP-NINJAR Management and Control Box | NJR-CTB

The IDK NJR-CTB is a management and control box for IP-NINJAR series products. The NJR-CTB can confirm status of unit, configure Video Wall settings, and control IP-NINJAR units which are connected in a network through LAN or web browser.

•Features

Management	•Auto recognition for IP-NINJAR units which are in a network and showing as a list •Device name registration setting, device group registration •Preset pattern registration
Control command input	•WEB browser control (no need to install extra software or application software) •External control by using external commands
Control command output	•To execute control command to external devices
Others	•AC adapter with locking mechanism

•Sample Connection Diagram



•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
	Video Wall		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 10Base-T / 100Base-TX / 1000Base-T (Auto Negotiation), Auto MDI / MDI-X
		Connector	2 RJ-45
General	AC adapter		Input: 100 - 240 VAC ± 10 %, 50 Hz / 60 Hz ± 3 Hz Output: 12 VDC 3 A 36 Watts (AC adapter is supplied)
	Power consumption		About 16 Watts
	Dimensions		8.27 (W) x 1.73 (H) x 5.91(D)" .approx. (210 (W) x 44 (H) x 150 (D) mm) (EIA rack 1/2U widths and low height, not including projections)
	Weight		2.65 lbs. approx. (1.2 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 humidity: 20 % to 90 % (Non Condensing)

•Rear Panel