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NU-IP3R

IP Converter

**Receives and shows 4K, HD, and
SD video streams from anywhere over the network**



The NU-IP3R, receives IP data for 4K, HD and SD video, and control signals from the NU-IP3T transmitter. The IP data comprises visually lossless video or uncompressed video with low latency of less than 1 frame through network interfaces. The video can be displayed in multiple layouts, allowing the surgeon to see several images simultaneously.

Key Features

Flexible Network Architectures

Video streams from the NU-IP3T (IP converter transmitter) or IP camera can be received over CAT5e or higher copper cable, or fiber network cable. Outside the OR, the low network bandwidth requirements enable the use of either copper or fiber infrastructure.

A Wide Variety of Video Formats

Video from SD and HD, 2D and 3D, all the way up to 4K@60fps 4:4:4 video output is supported, and output at the correct resolution for the connected monitor. 3D inputs can be output in 3D where the monitor supports it, and in 2D on standard monitors. Even non-standard SD video inputs can be transmitted and output as a pixel-perfect dot-by-dot representation on a modern 16:9 monitor where required without scaling or stretching using the full screen. For the details of the supported resolution and signal, please contact Sony dealer.

Data Safety

Data and command interfaces to the NU-IP3R are encrypted using SSL. Bandwidth optimized streams are always secured with AES-128 encryption used with a GCM rolling key scheme. This prevents third-party eavesdropping, spoofing, data tampering.

Primary Cabling

The NU-IP3R has a safety mechanism to control an attached monitor via serial communication (RS-232C). If IP transmission stops, the NU-IP3R can automatically switch the display to a primary cable via RS-232.

User Feedback

The digital operating room provides users with feedback on various system levels. The system LED indicates the power-on, the proper working of the NU-IP3R, and displays specific blinking patterns which indicating loss of a network, and the absence of an IP address. It makes easier for users to diagnose any problem. The receivers have a semitransparent overlay capability which can show any additional information on the display, for example recording and broadcasting indicators. This reassures users that their recording is active without looking away from the monitor.

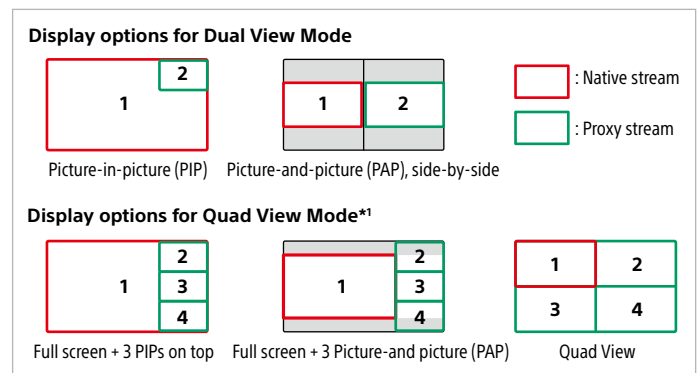
Designed for Simple Setup and Installation

- Small unit size to be easily fitted behind a monitor
- Optional IP converter bracket for installation between the monitor & the boom arm
- Chemical-resistant exterior in a medical white color

*1. Optional license (NU-IP3RE) is available for quad-view functionality.

Multiple Display Layouts

The NU-IP3R can receive additional HD proxy streams (max 3 streams in total) on top of the 4K native stream and can display these in different layouts. A set of preconfigured layouts include quad-view^{*1}, PIP, and PAP, can be configured symmetrically or asymmetrically. For boom-mounted surgical displays, the receiver can be 'invisibly' mounted between the boom and the display or as a larger (in-wall) overview screen.



Still Picture Preview

When taking a still image, the image can be previewed on the screen for a few seconds. The surgeon can easily confirm the contents of the image.



KVM Function

By connecting a keyboard or mouse, the NU-IP3R can control the source of the video being viewed, using KVM (Keyboard, Video and Mouse) technology. When a video source is switched to a monitor, the NU-IP3R connects a local keyboard & mouse to the remote device via the NU-IP3T without requiring extra hardware or cabling. As staff switch view from one source to another, their keyboard and mouse follow their workflow and allow flexible control of multiple devices.

This document is for NUCLeUS Version 3.8.



Rear Panel

Specifications

Video Specifications	
Inputs	Native and proxy streams
Outputs	Up to 4K @60 fps 4:4:4*1
Connectivity	
USB	USB Type A (KVM interface) (2) SFP+ (Ethernet network)*2 (2)
Control and Data	RJ-45 (Ethernet network) (1) RJ-45 (for serial control) (1)
Video Connectors (out)	3G-SDI (4), Display Port 1.2 (1), HDMI 2.0 (1) DVI*3
Power	AC Adaptor AC-82MD is required (not included)
Display Control	RS232 for control of supported monitor functions*4
Functions	
Encryption	SSL + AES-128 with GCM rolling key scheme (Proxy)
General	
Power Requirements	+24 V DC
Input Current	2 A
Operating Temperature	0 °C to +40 °C (32 °F to 104 °F)
Operating Humidity	30% to 85% (No condensation allowed)
Operating Pressure	700 hPa to 1,060 hPa
Storage and Transport Temperature	-20 °C to +60 °C, -4 °F to 140 °F
Storage and Transport Humidity	20% to 90%
Storage and Transport Pressure	700 hPa to 1,060 hPa
Noise Level	28 dBA (20 °C (68 °F), 1 m)
Mass	1.2 kg (2 lb 10 oz)
Dimensions (W x H x D)	189 x 47 x 157 mm (excluding projection) (7 1/2 x 1 7/8 x 6 1/4 inch)
Supplied Accessories	HDMI Cable Clamp (1), Before Using This Unit (1), CD-ROM (1), Service Contact List (1)

*1. For the details of the supported signal types, resolutions and frequencies, please refer to the Instruction Manual.

*2. Optional SFP+ module is required.

*3. Exchange adaptor is required.

*4. Serial control is supported on selected surgical display models. Contact nearest Sony dealer for details.

Related Products

IP Converter (Transmitter)
NU-IP3T

IP Converter 4CH License
NU-IP3RE

Switching & Routing
Pro License

NU-SR30E

Pro+ License
NU-SR30F

Network System Manager
NU-NM30E



AC Adaptor
AC-82MD



SFP+ Transceiver Module
OTM-10GSR1



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