SONY

NU-IP40S

Medical IP Converter

Overview

Convert 4K surgical video images to IP for streaming and sharing across hospital networks

4K imaging is becoming increasingly prevalent in modern hospital environments. With four times the resolution of Full HD, 4K lets medical staff view video images from surgery and other clinical procedures with enhanced resolution, contrast and colour accuracy.

The NU-IP40S IP Converter plays a central role in the distribution of images acquired from the latest generation of 4K medical modalities such as endoscopes, boom arm cameras and surgical microscopes.

The converter can be set for operation either as a 'transmitter' or 'receiver'. Digital video images captured in the integrated Operating Room (OR), consulting room or treatment centre are converted to IP using the NU-IP40S. Video data can then be streamed via the hospital network (LAN) to anywhere on the healthcare campus. At its destination, IP is converted back to SDI digital video using a separate NU-IP40S unit for output to a wide range of displays and recording devices.

Transmission is near-real time, with no perceptible latency: unlike conventional analogue video, image quality it not degraded by

being sent over lengthy cable runs.

The IP Converter has two SFP+ modules pre-inserted at the time of shipment.

Features

High quality video transmission

The NU-IP40S can transmit 4K or HD video, and is compatible with 4:2:2 (10-bit) video signals for accurate colour reproduction.

Transmit compressed or uncompressed 4K video over IP

Uncompressed 4K video signals can be transmitted using two network cables. Alternatively, compressed 4K signals can be transmitted with no visible image quality degradation using one network cable.

Reliable, low latency transmission over IP

Converted 4K video signals are transmitted over hospital IP networks in near real time, with extremely low latency (typically 6ms) that's effectively imperceptible. Powerful Forward Error Correction (FEC) technology maintains signal integrity, even under 'noisy' network conditions that can cause packet loss - such as RF electromagnetic interference from electronic scalpels.

Downconversion from 4K to HD

If required the NU-IP40S can downconvert 4K video streamed via the network to HD, for viewing on lower-resolution HD medical display devices that do not support 4K inputs.

Safeguard against accidental disconnection

An system alarm signal notification is output if a LAN cable is accidentally disconnected during use.

Remote control

The NU-IP40S can be remotely controlled via RS-232C connected devices via an optional device controller in the OR (available

separately). Supported plugin module for NU-NM11B is available from AMX, Crestron and Extron.

Specifications

Connectors	
Input Connectors	3G/HD SDI BNC type (4)*2 DC IN (3-pin DIN) (1)
Output Connectors	3G/HD SDI BNC type (4)*2
Other Interfaces	Network (10GBASE-SR) LC type (2) RS-232C (for device control or for servicing) 9-pin D-sub(1) Equipotential(1)

Supported Interface (Tx or Rx are fixed by setting.)	
Input(Tx)	3G/HD SDI (4:2:2YCbCr 10bit)*3
Output(Rx)	3G/HD SDI (4:2:2YCbCr 10bit)*3

Transmission-mode	
	Uncompressed mode or

Transmission-mode	Compressed mode(LLVC)*4

Audio signals

Audio signals	SDI embedded audio supported 2 ch 48 kHz 24 bit

General

Power Requirements	+24 V DC
Input current	1 A
Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Operating Humidity	30% to 85% (non-condensing)
Operating Pressure	700 hPa to 1060 hPa
Storage and transport temperature	-20°C to +60°C -4°F to +140°F
Storage and transport humidity	20% to 90% (non-condensing)
Storage and transport pressure	700 hPa to 1060 hPa
Mass	Approx.0.7 kg Approx. 1 lb. 8.7 oz.

Dimensions (W x H x D) *1	180 x 48.5 x 120 mm (with foot, excluding protrusions) 180 x 42 x 120 mm (without foot, excluding protrusions)
Supplied Items	Before Using This Unit (1) CD-ROM (1) Service Contact List (1)
Optional Accessories	AC-80/81MD(AC Adaptor) NUA-BK10(IP Converter Bracket)

Notes	
*1	The values for dimensions are approximate.
*2	BNC SDI connectors can be set either as input or output.
*3	Tx or Rx are fixed by setting
*4	Sony developed low latency video codec (LLVC) technology to support the video compression required for 4K 60p transmission over 10 Gbps Ethernet.

Related products

LMD-X310MD

31-inch 4K 2D LCD medical monitor

LMD-X550MD

55-inch 4K 2D LCD medical monitor

LMD-X550MT

55-inch 4K 3D/2D LCD medical monitor

LMD-X310MT

31-inch 4K 3D/2D LCD medical monitor

NU-NM11B

Network System Manager Software

Gallery