

## NU-IP40D

Medical IP Converter (DVI/HDMI version)



### 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-IP40D 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.

Equipped with DVI and HDMI interfaces for integration with medical imaging systems, 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-IP40D. Video data can then be streamed via the hospital network 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 is not degraded by being sent over lengthy cable runs.

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

## Features

### **High quality video transmission**

The NU-IP40D can transmit high-quality video signals at 4K or Full HD resolution.

### **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 IP networks in near real time, with extremely low latency that's effectively imperceptible. Powerful Forward Error Correction (FEC) technology assists 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-IP40D 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.

### **RS-232C control**

The optional software accessory, Network System Manager,

allows control of other devices connected to the IP converter using the OR controller (available separately) connected via the RS-232C port.

## Specifications

### Connectors

Input Connectors	DVI (1) HDMI (Type A)(1) DC IN (3-pin DIN) (1)
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Output Connectors	HDMI (Type A)(1)
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Other Interfaces	Network (10GBASE-SR) LC type (2) RS-232C (for device control or for servicing) 9-pin D-sub(1) Equipotential(1)
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### Supported Interface (Tx or Rx are fixed by setting.)

Input(Tx)	HDMI DVI DVI-D DVI-A (Analog RGB *1, VIDEO *2, S-VIDEO *2, Component *2)
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Output(Rx)	HDMI
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## Transmission-mode

Transmission-mode	Uncompressed mode or Compressed mode(LLVC)*4
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## Audio signals

Audio signals	HDMI Audio 2 ch, 16 bit (32kHz/44.1kHz/48 kHz)
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## General

Power Requirements	+24 V DC
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Input current	1 A
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Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
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Operating Humidity	30% to 85% (non-condensing)
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Operating Pressure	700 hPa to 1060 hPa
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Storage and transport temperature	-20°C to +60°C (-4°F to +140°F)
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Storage and transport humidity	20% to 90% (no condensation)
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Storage and transport pressure	700 hPa to 1060 hPa
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Mass	Approx. 0.7 kg (Approx. 1 lb. 8.7 oz.)
Dimensions (W x H x D)	Approx. 180 x 48.5 x 120 mm (with foot, excluding protrusions) Approx. 180 x 42 x 120 mm (without foot, excluding protrusions)
Supplied Items	NUA-AA10(Analog adapter) (1) Cable Clamper (1) Before Using This Unit (1) CD-ROM (1) Service Contact List (1)
Optional Accessories	AC-80/81MD(AC Adaptor) NU-NM10B(Network System Manager) NUA-BK10(IP Converter Bracket) SMF-405(Single Cable)
Compliance with Medical Safety Standards	Yes

## Notes

\*1

Available when using with the supplied NUA-AA10 Analog adaptor.

\*2

Available when using the NUA-AA10 and optional SMF-405 cable.

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## Related products



### **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

