

### NetworkHD 600 Series (SDVoE)

#### NHD-610-TX | NHD-610-RX



#### In the Box

- 1x NHD-610-TX or NHD-610-RX
- 1x IR Emitter
- 1x IR Receiver
- 1x Pair of NHD-000-RACK4 Brackets
- 1x Pair of Wall Brackets
- 1x 12V DC Power Supply (US/UK/EU/AU)
- 1x 3-pin Phoenix Connector (for RS-232)

#### Key Features

- Pixel-perfect transmissions up to 4K60 4:4:4 8bit with Dolby Vision/HDR compatibility
- High speed USB 2.0 connectivity for extension of USB peripheral devices
- 2CH Dante/AES67 audio output on NHD-610-TX encoder
- NHD-610-RX decoder capable of video wall (8x8) and multiview processing (16 windows)
- Multi-purpose audio input/output for audio ingest or HDMI de-embed

#### NHD-600-TRX | NHD-600-TRXF



#### In the Box

- 1x NHD-600-TRX or NHD-600-TRXF
- 1x IR Emitter
- 1x IR Receiver
- 1x Pair of Wall Brackets
- 1x Pair of NHD-000-RACK4 Brackets
- 1x 12V 2A DC Power Supply (US/UK/EU/AU)
- 1x 3-pin Phoenix Connector (for RS-232)
- 1x 5-pin Phoenix Connector (for analog audio)

#### Key Features

- Operates as a transceiver that can encode and decode simultaneously
- Pixel-perfect transmissions up to 4K60 4:4:4 8bit with Dolby Vision/HDR compatibility
- USB HID connectivity for extension of keyboard and mouse
- Zero latency A/V transmissions using Genlock processing
- Instant matrix switching speeds using Fast Switch processing
- Native video wall (8x8) and multiview processing (16 windows)

#### TRXF Additional Features

- Fiber transport supporting up to 300m distance using OM3 multimode
- High speed USB 2.0 connecting for extension of USB peripherals over the network

### NetworkHD 500 Series (JPEG 2000)

#### NHD-500-TX | NHD-500-RX



#### In the Box

- 1x NHD-500-TX or NHD-500-RX
- 1x IR Emitter
- 1x IR Receiver
- 1x Pair of NHD-000-RACK4 Brackets
- 1x Pair of Wall Brackets
- 1x 3-pin Phoenix Connector (for RS-232)
- 1x 5-pin Phoenix Connector (for analog audio)

#### Key Features

- HDMI 2.0 encoding/decoding up to 4K60 4:4:4 8bit with Dolby Vision/HDR compatibility
- Ethernet or Fiber connections (550m w/ OM3 MMF or 10km with SMF)
- USB connectivity for extension and routing of USB peripheral devices
- Ultra-low latency transmissions of less than a single video frame
- NHD-500-RX decoder capable of 16x16 video wall processing, including mosaic
- High definition preview streams for control system interfaces
- Audio Return Channel via HDMI or Toslink

# NetworkHD 400 Series (JPEG 2000)

## NHD-400-TX | NHD-400-RX



### In the Box

- 1x NHD-400-TX or NHD-400-RX
- 1x Pair of Wall Brackets
- 1x Pair of NHD-000-RACK4 Brackets
- 1x IR Emitter
- 1x IR Receiver
- 1x 5-pin Phoenix Connector (analog audio) RX only

### Key Features

- Encoding/decoding up to 4K30 4:4:4 with HDR10/HLG compatibility
- USB connectivity for extension and routing of USB peripheral devices
- Ultra-low, single frame latency
- NHD-400-RX decoder capable of 16x16 video wall processing, including mosaic
- Discrete routing of all signal flows including video, audio, USB and control signals

## NHD-400-E-TX | NHD-400-E-RX



### In the Box

- 1x NHD-400-E-TX or NHD-400-E-RX
- 1x Pair of Wall Brackets
- 1x Pair NHD-000-RACK4 Brackets
- 1x 4-pin Phoenix Connector (RS232) RX only

### Key Features

- 'Lite' versions of the NHD-400-TX/RX with only essential I/O
- Encoding/decoding up to 4K30 4:4:4 with HDR10/HLG compatibility
- Ultra-low, single frame latency
- NHD-400-E-RX decoder capable of 16x16 video wall processing, including mosaic
- Compatible with all other NetworkHD 400 series models

## NHD-400-DNT-TX



### In the Box

- 1x NHD-400-DNT-TX Encoder
- 1x 3-pin Phoenix Connector (RS232)
- 1x Pair of NHD-000-RACK4 Brackets
- 1x Pair of Wall Brackets
- 1x IR Emitter Cable
- 1x IR Receiver Cable

### Key Features

- NHD-400-TX with added 2CH Dante/AES67 network output
- Includes additional stereo audio input (switchable)
- Encoding up to 4K30 4:4:4 with HDR10/HLG compatibility
- Ultra-low, single frame latency
- Compatible with all other NetworkHD 400 series models

## NHD-400-TX-IW



### In the Box

- 1x NHD-400-TX-IW Encoder
- 1x 12V DC Power Supply (US | UK | EU)
- 1x 2-Pin Terminal Block (DC Power)
- 1x 3.5mm Stereo TRS Plug to 3-pin Terminal Block RS-232 Adapter
- 1x White Decorative Plate with 4 Screws

### Key Features

- 2-Gang US style wall plate
- Dual input VGA & HDMI with auto switching
- 4K encoding up to 4K30 4:4:4 with HDR10/HLG compatibility
- USB connectivity for extension and routing of USB peripheral devices
- Ultra-low, single frame latency

## NetworkHD 100/200 Series (H.264/5)

### NHD-250-RX



### In the Box

- 1x NHD-250-RX Decoder
- 1x 12V DC Power Supply (US | UK | EU)
- 3x 3-pin Phoenix Connectors (RS232 & analog audio)
- 1x Pair of NHD-000-RACK4 Brackets
- 1x Pair of Wall Brackets

### Key Features

- Multiview processor supports up to 9 unique PiP windows
- Fully customizable multiview layouts
- 4K output scaling
- Interoperable with NHD-110-TX and NHD-140-TX

### NHD-140-TX



### In the Box

- 1x NHD-140-TX Encoder
- 1x 12V DC Power Supply (US | UK | EU)
- 1x Pair of NHD-000-RACK4 Brackets

### Key Features

- Quad encoder helps reduce amount of separate components
- Combines all four inputs into a single ethernet output
- Low bandwidth H.264 1080p60 encoding
- Interoperable with NHD-110-TX/RX
- Easily rack mountable with the NHD-140-RACK-1U

## NHD-110-TX | NHD-110-RX



### In the Box

- 1x NHD-110-TX or NHD-110-RX
- 1x IR Emitter
- 1x IR Receiver
- 2x 3-pin Phoenix Connector (RS232 & analog audio)
- 1x Pair of Wall Brackets
- 1x Pair of NHD-000-RACK4 Brackets

### Key Features

- Low bandwidth 1080p60 encoding/decoding
- Dual encoding options allow either H.264 or HEVC H.265
- Instant matrix switching with no freeze frames
- NHD-110-RX supports video wall processing up to 16x16
- Discrete routing of all signal flows including video, audio and control signals

## NHD-000-CTL (Controller)



### In the Box

- 1x NHD-000-CTL Controller
- 1x Pair of NHD-000-RACK4 brackets
- 1x Quickstart Guide
- 1x 6-pin Terminal Block
- 1x 12V Power Supply (US/UK/EU/AU)

### Key Features

- Provides automatic discovery of NetworkHD encoders and decoders
- Simple browser management of encoders and decoders
- Integrates with major control systems, including the NetworkHD Touch™ control app
- Dual Ethernet ports for complete isolation of control and AV network traffic
- PoE or DC power options

## NHD-CTL-PRO (Controller)



### In the Box

- 1x NHD-CTL-PRO Controller
- 1x Pair of Rack Brackets
- 1x Power Supply (US/UK/EU/AU)
- 1x 6-pin Terminal Block

### Key Features

- Auto discovery of all NetworkHD endpoints
- Powerful web-based UI for intuitive control & management
- Isolated AV and control LAN ports for seamless integration into any network
- LED screen for access to system info
- 1U chassis for easy installation into equipment racks

# Specifications

Audio and Video				
	NHD-610-TX	NHD-610-RX	NHD-600-TRX	NHD-600-TRXF
<b>Inputs/Outputs</b>	1x HDMI 2.0 Input 1x HDMI 2.0 Loop Output 1x 5-pin Balanced analog audio In/Out	1 x HDMI 2.0 Output 1x HDMI 2.0 Switchable Input 1x 5-pin Balanced analog audio In/Out	1x HDMI 2.0 Input 1x HDMI 2.0 Output 1x 5-pin Balanced Analog Audio In/Out	1x HDMI 2.0 Input 1x HDMI 2.0 Output 1x 5-pin Balanced Analog Audio In/Out
<b>Maximum Pixel Clock</b>	600Mhz			
<b>Video Encoding</b>	SDVoE Pixel Pipeline   Dante/AES67 proprietary protocols	SDVoE Pixel Pipeline	SDVoE Pixel Pipeline	SDVoE Pixel Pipeline
<b>Encoding Data Rate</b>	1080p@60Hz 8bit - 3.4Gbps 4K UHD@30Hz 4:4:4 8bit - 6.4Gbps 4K UHD@60Hz 4:4:4 8bit - 8.7Gbps (with light compression)			
<b>Max End to End Latency</b>	Genlock Mode: Uncompressed = 30us, Compressed <120us Fast Switch Mode: 1~2 video frames = min. between 16.7 – 33.4ms @ 60fps			
<b>Max Video Resolutions</b>	4096x2160p @ 60Hz 8bit 4:4:4 or RGB 3840x2160p @ 60Hz 12bit 4:2:2 Dolby Vision 3840x2160p @ 60Hz 10bit 4:2:2 HDR10/HLG 1920x1080p @ 60Hz 12bit			
<b>Supported Standards</b>	RGB   DCI   USB			
Communication and Control				
<b>HDMI</b>	HDMI 2.0b   HDCP 2.2   CEC   EDID			
<b>Network</b>	1x 10GbE RJ45 (AV) 1x 1GbE RJ45 (LAN/Dante)			1x 10Gbps SFP+ (AV) 10GBASE-SR: 300m using OM3 multi-mode 1x 1GbE RJ45 (LAN)
<b>RS-232</b>	1x 3-pin Phoenix Connector   2 Way   Broadcast   Routed   API Programmable			
<b>IR</b>	1x IR TX 3.5mm TS Mono Jack   API Programmable 1x IR RX 3.5mm TRS Stereo Jack   API Programmable			
<b>USB</b>	3 x USB 2.0 Type A 1 x USB 2.0 Type B Host USB Bandwidth: 480Mbps	3 x USB 2.0 Type A 1 x USB 2.0 Type B Host USB Bandwidth: 480Mbps	3x USB 1.1 Type A 1x USB 1.1 Type B Host	3x USB 2.0 Type A 1x USB 2.0 Type B Host USB Bandwidth: 480Mbps
<b>Security Protocols</b>	AES 128   SSH   TLS   HTTPS			
<b>Power</b>				
<b>Power Supply</b>	12V 2A DC PSU   802.3at PoE+ compliant	12V 2A DC PSU   802.3at PoE+ compliant	12V 2A DC PSU   802.3at PoE+ compliant	12V 2A DC PSU
<b>Power Consumption</b>	Max: 24w   Average: 10w			
Environmental				
<b>Operating Temperature</b>	+32°F ~ +104°F (0°C ~ +45°C)   10% ~ 90% non-condensing			
<b>Storage Temperature</b>	-4°F to ~ 140°F (-20°C ~ +70°C)   10% ~ 90% non-condensing			
<b>Maximum BTU</b>	34 BTU/hr			
<b>Dimensions &amp; Weight</b>	Length x Width x Height: 215mm x 140mm x 25mm Weight: 1.75lbs			
Regulatory				
<b>Safety and Emission</b>	CE   FCC   RoHS   RCM   EAC			

# Specifications

Audio and Video		
	NHD-500-TX	NHD-500-RX
<b>Inputs/Outputs</b>	1x HDMI In 1x 3.5mm TRS Analog In 1x 5-pin Balanced Analog Out 1x Toslink Digital Out	1x HDMI Out 1x 5-pin Balanced Analog Out 1x Toslink Digital In
<b>Maximum Pixel Clock</b>	600Mhz	
<b>Max Video Resolutions</b>	4096x2160p @ 60Hz 8bit 4:4:4 or RGB 3840x2160p @ 60Hz 12bit 4:2:2 Dolby Vision 3840x 2160p @ 60Hz 10bit 4:2:2 HDR10/HLG 1920x1080p @60Hz 12bit	
<b>Audio Formats</b>	<b>Passthrough:</b> 2ch PCM and up to DTS:X and Dolby Atmos <b>ARC:</b> 2ch PCM and up to Dolby Digital+ and DTS 5.1	
<b>Supported Standards</b>	RGB   DCI   USB	
<b>Output Video Encoding</b>	JPEG 2000	
<b>Encoding Data Rate</b>	Max: 850Mbps (Configurable)	
<b>End to End Latency</b>	1 video frame latency (pass-through mode) 16ms @ 4K60   2 video frames latency (scaler/VW mode)	
Communication and Control		
<b>HDMI</b>	HDMI 2.0b   HDCP 2.2   CEC   EDID   ARC	
<b>Network</b>	1x 1GbE RJ45   1 x 1Gbps SFP (1000Base-SX: 550m using OM3 multi-mode) (1000Base-LX: 5km using single-mode) (1000Base-LX10: 10km using single-mode)	
<b>RS-232</b>	1x 3-Pin Phoenix Connector   2-way   API Programmable	
<b>IR</b>	1x IR TX 3.5mm TS Mono Jack   API Programmable 1x IR RX 3.5mm TRS Stereo Jack   API Programmable	
<b>USB</b>	1x USB 2.0 Type Host (Max 300Mbps upstream)	2x USB 1.1 Type A 1x USB 2.0 Type A
<b>Security Protocols</b>	AES 128   SSH   TLS   HTTPS	
Power		
<b>Power Supply</b>	12V DC 1A   802.3af PoE Compliant	
<b>Power Consumption</b>	Max: 15.4w   Average: 8w	
Environmental		
<b>Operating Temperature</b>	0 to + 45°C (32 to + 113 °F), 10% to 90%, non-condensing	
<b>Storage Temperature</b>	-20 to +70°C (-4 to + 158 °F), 10% to 90%, non-condensing	
<b>Maximum BTU</b>	51.18 BTU/hr	
<b>Dimensions &amp; Weight</b>	Length x Width x Height: 215mm x 120mm x 25mm Weight: 1.75lbs	
Regulatory		
<b>Safety and Emission</b>	CE   FCC   RoHS   EAC   RCM	

# Specifications

Audio and Video				
	400 Series	400-E Series	NHD-400-DNT-TX	NHD-400-TX-IW
Inputs/Outputs	<b>TX</b>	<b>TX</b>	1x HDMI Input 1x Audio In: 3.5mm (1/8in) 1x IR In: 3.5mm (1/8in) 1x Audio Out: 3.5mm (1/8in)	1x HDMI Input 1x VGA Input 1x Audio In: 3.5mm (1/8in)
	1x HDMI Input 1x HDMI Output 1x Audio In: 3.5mm (1/8in)	1x HDMI Input		
	<b>RX</b>	<b>RX</b>		
	1x HDMI Output 1x Audio Out: 5-Pin Phoenix	1x HDMI Output		
Maximum Pixel Clock	300MHz			
Output Video Encoding	JPEG 2000			
Encoding Data Rate	Max: 850Mbps (Configurable)			
Max End to End Latency	1 video frame latency (pass-through mode) 16ms @60fps   2 video frames latency (scaler/VW mode)			
Max Video Resolutions	3840x2160p @ 60Hz 8bit 4:2:0 3840x2160p @ 30Hz 8bit 4:4:4 or RGB 3840x2160p @ 30Hz 10bit 4:2:2 HDR/HLG 1920x1080p @ 60Hz 12bit			
Communication and Control				
HDMI	HDMI 2.0   HDCP 2.2   CEC   EDID			
Ethernet	1x 1GbE 8-pin RJ-45			
RS-232	1x RS-232: 4-pin Phoenix (RX only)		1x RS-232: 3-pin Phoenix	1x RS-232: 3.5mm (1/8in) TRS Stereo   2 Way
IR	1x IR TX: 3.5mm TS Mono 1x IR RX: 3.5mm TRS Stereo Bidirectional Over Ethernet	N/A	1x IR TX: 3.5mm TS Mono 1x IR RX: 3.5mm TRS Stereo Bidirectional Over Ethernet	N/A
USB	RX: 2x USB Device: USB Type A   TX: 1x USB Host: USB Type B   Power: 5v 500ma per port   Data Rate: Max 9MB/s	N/A	1x USB Host: USB Type B Data Rate: Max 9MB/s	1x USB Host: USB Type B Data Rate: Max 9MB/s
Security Protocols	AES 128   SSH   TLS   HTTPS			
Power				
Power Supply	12V DC			
PoE	IEEE 802.3af			
Power Consumption	8W			
Environmental				
Operating Temperature	0 to + 45°C (32 to + 113 °F), 10% to 90%, non-condensing			
Storage Temperature	-20 to +70°C (-4 to + 158 °F), 10% to 90%, non-condensing			
Maximum BTU	51.18 BTU/hr			19.45 BTU/hr
Dimensions & Weight	Length x Width x Height: 220mm x 140mm x 25mm Weight: 1.75lbs			2-gang US J-Box H x W x D: 108mm x 91mm x 45mm Weight: 1lbs
Regulatory				
Safety and Emission	CE   FCC   RoHS   EAC   RCM			

# Specifications

Audio and Video			
	NHD-250-RX	NHD-140-TX	NHD-110 Series
Inputs/Outputs	1x HDMI Output 1x Audio Out: 3-Pin Phoenix	4x HDMI Input	<b>TX</b>
			1x HDMI Input 1x Audio Out: 3-Pin Phoenix
			<b>RX</b>
			1x HDMI Output 1x Audio Out: 3-Pin Phoenix
Output Video Encoding	N/A	H.264	H.264/H.265
Encoding Data Rate	N/A	120Mbps (30Mbps per encoder)	H.264: 30Mbps   H.265: 5Mbps
Max End to End Latency	~80ms (low latency mode)   ~300ms (high quality mode)		
Max Video Resolutions	3840x2160p @60Hz (Tile mode) 1920x1080p @60Hz	1920x1080p @60Hz 8bit	1920x1080p @60Hz 8bit
Communication and Control			
HDMI	HDMI 1.4   HDCP 1.4   CEC	HDMI 1.4   HDCP 1.4	HDMI 1.4   HDCP 1.4   CEC
Ethernet	1x 1GbE 8-pin RJ-45		
RS-232	1x RS-232: 3-pin Phoenix   Routed   API Programmable	N/A	1x RS-232: 3-pin Phoenix   Routed   API Programmable
IR	N/A	N/A	1x IR TX: 3.5mm TS Mono 1x IR RX: 3.5mm TRS Stereo Routed   API Programmable
Security Protocols	AES 128   SSH   TLS   HTTPS		
Power			
Power Supply	12V DC		
PoE	IEEE 802.3af	N/A	IEEE 802.3af
Power Consumption	8.3W	19.44W	6W
Environmental			
Operating Temperature	0 to + 45°C (32 to + 113 °F), 10% to 90%, non-condensing		
Storage Temperature	-20 to +70°C (-4 to + 158 °F), 10% to 90%, non-condensing		
Maximum BTU	31 BTU/hr	68 BTU/hr	20.47 BTU/hr
Dimensions & Weight	L x W x H: 220mm x 140mm x 25mm Weight: 1.75lbs	L x W x H: 260mm x 210mm x 25mm Weight: 2.25lbs	L x W x H: 175mm x 100mm x 25mm Weight: 1.25lbs
Regulatory			
Safety and Emission	CE   FCC   RoHS   EAC   RCM		

	NHD-CTL-PRO	NHD-000-CTL
Communication and Control		
Network	2x 1GbE RJ45 (Control & AV)	2x 1GbE RJ45 (Control & AV)
RS-232	1x RS-232 6-Pin Phoenix Connector	
HDMI	Reserved for future use	N/A
USB	Reserved for future use	N/A
Security Protocols	Telnet   Telnet over TLS   SSH   HTTPS	
Power		
Power Supply	100 ~240V AC	12V DC 1A
PoE	802.3af PoE Compliant	
Power Consumption	Max: 15.4w   Average: 10w	Max: 15.4w   Average: 5w
Environmental		
Operating Temperature	0 to + 45°C (32 to + 113 °F), 10% to 90%, non-condensing	
Storage Temperature	-20 to +70°C (-4 to + 158 °F), 10% to 90%, non-condensing	
Maximum BTU	51.18 BTU/hr	20 BTU/hr
Dimensions & Weight	Length x Width x Height: 440mm x 240mm x 40mm Weight: 2.3lbs	Length x Width x Height: 140mm x 90mm x 25mm Weight: 1lbs
Regulatory		
Safety and Emission	CE   FCC   RoHS   EAC   RCM	