

## 1080p and 4K AV over IP Encoders and Decoders

### NetworkHD Full Product Range

# WyreStorm®

## Specification Sheet

WyreStorm is a leading manufacturer in professional A/V distribution. Their NetworkHD series of AV over IP products are award winning and innovative solutions for a wide variety of markets. The NetworkHD product line offers a vast array of technologies ranging from low bandwidth H.264 streaming, to JPEG2000 4K over IP, to zero latency 10GbE SDVoE. Pair any NetworkHD series product with the powerful and free NetworkHD Touch iPad app for live video preview, drag-and-drop matrix switching and video wall control.

# NETWORKHD

## NetworkHD 600 Series



4K HDR SDVoE™ 10GbE  
HDMI® 2160p 4:4:4 60 HDCP 2.2

## Key Features

- Supports 4K UHD and DCI resolutions at upto 60fps RGB or YUV 4:4:4
  - Supports Dolby Vision, HDR10 and HLG HDR formats and ITU-R BT.2020 and BT.2100 color spaces
  - HDCP 2.2 and HDCP 1.x support
  - HDMI or DisplayPort source input with optional auto-switch function
  - Powerful video scaling can match a connected display to the video source, leaving the original source content unaltered
  - Video resolution, framerate and color space conversion using SMPTE/ITU recommended methods with the NHD-600-RX
  - Genlock mode for zero millisecond end-to-end latency
  - Supports ultra-fast, seamless AV source switching
  - Secondary video stream with alternate scaling options can be used for Multiview source content using NHD-600-RX\*
  - Fully-featured Multiview image compositing includes arbitrary source window placement, resizing, image duplication and image offset functions\*
  - Video wall functionality with NHD-600-RX, including display bezel compensation\*
  - Audio capability for transport of multichannel audio, including Dolby Atmos and DTS:X
  - Multichannel PCM digital audio downmix supported
  - TX Analog audio port can be configured as an input for a discrete audio stream or audio embedding
  - Analog audio ports can be configured to de-embed audio from the main stream, stream downmix or analog channels
  - Full EDID management
  - Bidirectional IP to Infrared/RS-232 functionality via API or 3rd-party drivers\*\*
  - Auxilliary 1GbE Ethernet channel for network connectivity of attached source devices
  - Powerful matrix functionality includes routing control of all audio, video, RS-232 and IR signals
  - Exclusive, ingenious passive chassis design eliminates fan noise and maintenance concerns whilst maintaining class-leading thermal cooling
  - Software configuration environment is uniform accross the entire NetworkHD family
- \*Multiview and videowall functions available with future firmware update  
\*\* IR data receiver decoding to API / Driver in Pronto HEX format available with future firmware update

## In the Box

1x NHD-600-TX or NHD-600-RX  
1x 12V DC Power Supply (US/UK/EU)  
1x IR Emitter  
1x IR Receiver

1x 4-Pin Male Phoenix Connector  
2x Wall Mounting Bracket  
4x Feet for Shelf Mounting  
1x Quickstart Guide

## NetworkHD 400 Series



### Key Features

- Stunning visually lossless 4K UHD video with HDR and multichannel audio up to DTS:X & Dolby Atmos
- Image scaling - use a mix of 4K & 1080p displays throughout the install
- Ultra-low latency – only a single frame of video (16ms @ 60fps)
- Flexible routing of all signals. True breakaway of video, audio, IR, RS-232 and USB for custom signal routing between endpoints
- CEC One-Touch Play & Standby, bidirectional IR or RS-232 control of connected devices, plus USB passthrough
- Fully HDMI & HDCP 2.2 Compliant
- Up to 16x16 video walls with image rotation
- Easy network setup using standard L2+ or L3 managed PoE switches
- Custom "No Source" idle image upload for branded down time
- Support all SD, HD and UHD video formats - including interlaced content
- NetworkHD Touch™ iPad control app with live video preview and integration with major control systems including WyreStorm Enado

### In the Box

1x NHD-400-TX or NHD-400-RX  
2x Wall Mounting Brackets  
2x Rack Mounting Brackets

1x IR Emitter  
1x IR Receiver  
1x Quickstart Guide

## NetworkHD 400-E Series



### Key Features

- Stunning visually lossless 4K UHD video with HDR over 1GbE / IP networks
- Ultra-low end-to-end latency – only a single video frame (16ms at 60fps)
- Multi-channel audio including DTS:X & Dolby ATMOS supported over HDMI
- Image scaling with 400 Series decoders - use a mix of 4K & 1080p displays throughout an installation
- Easy network set-up using standard Layer 2 or Layer 3 managed switches
- Hugely scalable I/O, utilizing multicast technology
- Live video unicast preview streams for use with NetworkHD Touch or a custom control UI
- Powerful audio matrix functionality - route audio separately from video to any decoder
- CEC One-Touch Play & Standby, IR or RS-232 control of connected devices using 400 Series decoder
- 400 Series supports up to 16x16 video walls with image scaling, bezel compensation and rotation
- 400 Series supports custom "No Source" idle image upload for branded down time
- Support all SD, HD and UHD video formats - including interlaced content
- Batch firmware update and batch settings functions offers a massive reduction on installation times
- Custom EDID management with import/export
- HDCP 2.2 Compliant
- IEEE 802.3af PoE compliant PD
- Compatible with NHD-000-RACK4 rack mounting kit (brackets included with encoder)

### In the Box

1x NHD-400-E-TX or NHD-400-E-RX  
1x Wall Mounting Brackets

1x Rack Mounting Brackets  
1x Quickstart Guide

## NetworkHD NHD-400-DNT-TX



### Key Features

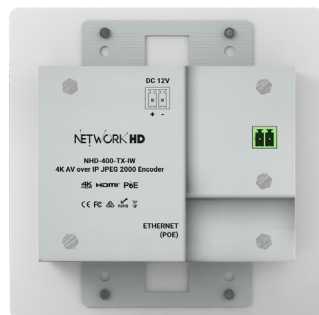
- Stunning visually lossless 4K UHD video with HDR over 1GbE / IP networks
- Ultra-low end-to-end latency – only a single video frame (16ms at 60fps)
- Dante encoder for 2ch audio from HDMI or analog - compatible with all Audinate Dante software tools
- Analog audio input for HDMI audio embedding
- Multi-channel audio including DTS:X & Dolby ATMOS supported over HDMI to decoder
- Image scaling with 400 Series decoders Easy network set-up using standard Layer 2 or Layer 3 managed switches
- Live video unicast preview streams for use with NetworkHD Touch or a custom control UI
- Powerful audio matrix functionality - route audio separately from video to any decoder
- CEC One-Touch Play & Standby, IR or RS-232 control of connected devices using 400 Series decoder
- 400 Series supports up to 16x16 video walls with image scaling, bezel compensation and rotation
- 400 Series supports custom "No Source" idle image upload for branded down time
- Infrared signal generation direct from encoder or decoder - supports HEX IR format
- Analog audio de-embed output with volume control
- Batch firmware update and batch settings functions offers a massive reduction on installation times
- Custom EDID management with import/export
- HDCP 2.2 Compliant

### In the Box

1x NHD-400-DNT-TX Encoder  
1x 3-pin Terminal Block  
2x Mounting Brackets for NHD-000-RACK4  
2x Wall Mounting Brackets

1x IR Emitter Cable  
1x IR Receiver Cable  
1x Quickstart Guide

## NetworkHD NHD-400-TX-IW



### Key Features

- Stunning visually lossless 4K UHD video with HDR over 1GbE/IP networks
- Ultra-low end-to-end latency – only a single video frame (16ms at 60fps)
- Auto-switching inputs between HDMI and VGA + Audio
- Multi-channel audio including DTS:X & Dolby ATMOS supported over HDMI
- Image scaling with 400 Series decoders - use a mix of 4K & 1080p displays throughout an installation
- Easy network set-up using standard Layer 2 or Layer 3 managed switches
- Live video unicast preview streams for use with NetworkHD Touch or a custom control UI
- Powerful audio / control matrix functionality - route audio / control separately from video to any decoder
- Support all SD, HD and UHD video formats - including interlaced content
- CEC One-Touch Play & Standby, IR or RS-232 control of connected devices using 400 Series decoder
- 400 Series supports up to 16x16 video walls with image scaling, bezel compensation and rotation
- 400 Series supports custom "No Source" idle image upload for branded down time
- Independent routing of all video, audio, IR, USB and RS-232 streams
- Batch firmware update and batch settings functions offers a massive reduction on installation times
- Custom EDID management with import/export
- HDCP 2.2 Compliant

### Box Contents

1x NHD-400-TX-IW Encoder  
1x 12V DC Power Supply (US | UK | EU)  
1x 2-Pin Terminal Block

1x 3.5mm Stereo TRS Plug to 3-pin Terminal Block RS-232 Adapter  
1x White Decorative Plate with 4 Screws  
1x Quickstart Guide

## NetworkHD NHD-250-RX



HDMI® HDCP PoE

### Key Features

- Multiview capable of displaying 1 to 9 simultaneous NetworkHD 2K encoder streams on a single 4K display
- Up to 6 simultaneous NetworkHD 2K encoder streams on a single 2K display in overlay mode
- Ideal for commercial monitoring of remote displays within a venue from a central location to quickly verify content transmitted to screens
- Multiple configurable layouts including hybrid grid layouts, PiP, PaP, arbitrary layouts and preset multiscreen arrangements
- Graphic or logo can be inserted into central image placeholder for screen indication or additional branding
- Configurable resolution output scaling, timing and mode
- Instant switching with WyreStorm QuickSync™
- RS-232 with integration with leading 3rd party control systems, including WyreStorm Enado and the NetworkHD Touch app
- CEC control of connected displays
- Analog audio breakout
- Configurable source audio switching
- Multiple NHD-250-RX units can be combined to suit the monitoring needs of the project
- Dramatically reduces the number of components required to monitor a venue - less decoders and screens - for reduced project complexity and less potential points of failure within installations
- Also provides video wall-like functionality on large screens or multiple screens combined with different layouts for custom display configurations
- Backwards compatible - able to be added to any existing NetworkHD 100/200 Series system
- IEEE 802.3af PoE compliant PD
- Compatible with NHD-000-RACK4 rack mounting kit

### In the Box

1x NHD-250-RX Decoder  
1x 12V DC Power Supply (US | UK | EU)  
3x 3-pin Phoenix Connectors

2x Rack Mounting Brackets  
2x Wall Mounting Brackets  
1x Quickstart Guide

## NetworkHD NHD-140-TX



HDMI® HDCP

### Key Features

- Ultra low network bandwidth compact encoder for up to 4 simultaneous HDMI inputs
- 4 streams over 1 Ethernet connection reduces network switch requirements
- Hugely scalable I/O, utilizing multicast technology to allow for very large commercial AV deployments
- Supports all SD and HD video formats - including interlaced content
- Configurable encode bandwidth and audio delay
- Seamlessly integrates with NetworkHD™ 100 and 200 Series decoders
- NetworkHD Touch™ control app for live video previews with drag and drop source selection
- Utilizes bandwidth-efficient H.264 encoding for visually lossless HD video distribution
- Features 4x HDMI inputs to 1 output via Ethernet port
- Plug and Play setup with quick networking configuration and auto discovery of components
- Live video unicast preview streams for use with NetworkHD Touch or a custom control UI
- Standards-based H.264/MPEG-4 AVC video compression
- Batch firmware update and batch settings functions offers a massive reduction on installation times

### In the Box

1x NHD-140-TX Encoder  
1x 12V DC Power Supply (US | UK | EU)  
2x Rack Mounting Brackets

2x Wall Mounting Brackets  
1x Quickstart Guide

## NetworkHD 110 Series



### Key Features

- Supports up to 1080p @ 60Hz video content
- Support all SD and HD formats - including interlaced content
- Flexible encoding using either H.264 or H.265 encoding. Encoding is configurable between a constant bitrate or variable bitrate.
- Low bandwidth or high-quality transmission methods. Low latency ~ 80ms. High-quality ~250ms
- Compatible with NHD-250-RX Multiview receiver
- Analog audio de-embed for easy connection to external audio DSP or amplifier
- Seamless video switching – no black screens or freeze frames
- Hugely scalable I/O, utilizing multicast technology
- Live video preview streams for use with NetworkHD Touch or a custom control UI
- Zero-configuration switch setup using unicast technology
- Flexible IP address settings: AutoIP/Static/DHCP
- Customizable, IR or RS-232 control of connected devices
- Infrared signal generation via API – supports Hex Global Cache format
- Batch firmware update and batch settings functions offers a massive reduction on installation times
- Custom EDID management with import/export
- HDCP 1.4 compliant
- IEEE 802.3af PoE compliant PD
- Includes optional DC power adapter and mounting brackets
- Compatible with NHD-000-RACK4 rack mounting kit (brackets included with decoder)

### In the Box

1x NHD-110-TX or NHD-110-RX  
1x IR Emitter  
1x IR Receiver  
2x 3-pin Terminal Block

2x Wall Mounting Brackets  
2x Rack Mounting Brackets

*Note: Device is PoE powered, 12V 1A PSU sold separately*

## NetworkHD NHD-000-CTL



### Key Features

- Compatible with all NetworkHD 100/200/400 and 600 components
- Instant deployment available for the NetworkHD Touch iPad control App to provide live video previews and drag and drop source selection\*
- Provides automatic discovery of NetworkHD devices
- Simple, intuitive Web-based configuration of encoder and decoder settings
- Interface to major control systems through powerful drivers
- Dual Ethernet Ports for complete isolation of control and AV network traffic
- IP control via LAN (Telnet & Web GUI) and a third party controller (API)
- Unified control and configuration access for most NetworkHD components
- Compatible with configuration files from PC configurator to quickly and reliably perform matrix operations for encoders and decoders
- Web-based configuration
- Threaded DC 12V power connection
- LED Power and Status indication
- Unit reset button
- Unit label holder

\* Supported on 600 Series with future firmware upgrade

### In the Box

1x NHD-000-CTL Controller  
1x Mounting Brackets for Rack Kit  
1x Quickstart Guide

1x 6-pin Terminal Block  
2x Wall Mounting Brackets  
1x 12V Power Supply (US/UK/EU/AU)

# Specifications

Audio and Video				
	110 Series	NHD-250-RX	400 Series	600 Series
Inputs	<b>TX</b>	1x 8-pin RJ-45 (Transmission from TX)	<b>TX</b>	<b>TX</b>
	1x 19-pin HDMI type A female		1x 19-pin HDMI Type A	1x DisplayPort 20-pin 1x HDMI 19-pin type A 1x 3.5mm (1/8in) TRS Stereo
	<b>RX</b>		<b>RX</b>	<b>RX</b>
	1x 8-pin RJ-45		1x 8-pin RJ-45	1x 8-pin RJ-45
Outputs	<b>TX</b>	1x 19-pin HDMI Type A 1x Audio Out: 3-pin Phoenix	<b>TX</b>	<b>TX</b>
	1x 8-pin RJ-45 female 1x Audio Out: 3-pin Phoenix		1x 19-pin HDMI Type A 1x 3.5mm (1/8in) TRS Stereo 1x 8-pin RJ-45	1x 8-pin RJ-45 1x 3.5mm (1/8in) TRS Stereo
	<b>RX</b>		<b>RX</b>	<b>RX</b>
	1x 19-pin HDMI Type A 1x Audio Out: 3-pin Phoenix		1x HDMI Out 19-pin type A 1x Audio Out: 5-Pin Phoenix 1x 3.5mm (1/8in) TRS Stereo (v2)	1x HDMI 19-pin type A 1x 3.5mm (1/8in) TRS Stereo
Output Video Encoding	H.264/H.265	H.264	JPEG 2000	SDVoE
Encode/Decode Data Rate	2~30Mb/s	Max: 30Mb/s per stream	850Mbps	10Gbps
Max End to End Latency	60~90 ms (Low latency mode)   250~300 ms (High quality mode)	~80ms (low latency mode)   ~300ms (high quality mode)	1 video frame latency (pass-through mode) 16ms @60fps   2 video frames latency (scaler/VW mode) 33ms @60fps	Genlock Mode: Uncompressed = 30us, Compressed <120us Fast Switch Mode: 1~2 video frames = min. between 16.7 – 33.4ms @ 60fps
Audio Formats	2ch PCM	2ch LPCM 48KHz	2ch LPCM   Multichannel: LPCM up to 7.1 and up to DTS:X and Dolby Atmos	2ch PCM   Multichannel: LPCM and Up to Dolby Atmos and DTS-X
Max Video Resolutions	1920x1200p @60Hz 8bit	1920x1200p @60Hz 8bit	3840x2160p @60Hz 8bit 4:2:0	2160p @60Hz 12bit 4:2:2
Max Pixel Clock	165MHz	594MHz	300 MHz	595 MHz
Supported Standards			HDR10, HLG, BT.2020	HDR10   HLG   BT.2020   3D Video   Dolby Vision
Communication and Control				
HDMI	HDCP 1.4   CEC	HDCP 1.4   CEC	HDCP 2.2   CEC	HDCP 2.2   CEC
Ethernet	1x 8-pin RJ-45 female   10/100Base-T   PoE	1x LAN (PoE): 8-pin RJ-45 ANSI/TIA-568 8P8C, 1000Base-T, PoE PD (IEEE 802.3af)	1x LAN (PoE): 8-pin RJ-45 ANSI/TIA-568 8P8C, 1000Base-T, PoE PD (IEEE 802.3af)	1x 10GbE SDVoE: 8-pin RJ-45 Female 10GBASE-T   1x LAN: 8-pin RJ-45 Female 1000BASE-T
USB	RX: 2x USB 1.1 Device: Type A TX: 1x USB 1.1 Host: Type B Power: 5v 500ma per port Data Rate: Max 115200bps	NA	NARX: 2x USB 2.0 Device: Type A TX: 1x USB 2.0 Host: Type B Power: 5v 500ma per port Data Rate: Max 9MB/s	NA
IR	1x IR TX: 3.5mm (1/8in) TS Mono   1x IR RX: 3.5mm (1/8in) TRS Stereo   Bidirectional Over Ethernet   2 Way   Broadcast   Routed   API Programmable	NA	1x IR TX: 3.5mm (1/8in) TS Mono   1x IR RX: 3.5mm (1/8in) TRS Stereo   Bidirectional Over Ethernet   2 Way   Broadcast   Routed   API Programmable	1x IR TX: 3.5mm (1/8in) TS Mono Jack   1x IR RX: 3.5mm (1/8in) TRS Stereo Jack   2 Way   Broadcast   Routed   API Programmable
RS-232	1x RS-232: 3-pin Phoenix   Routed   API Programmable	2x RS-232: 4-pin Pheonix   2-Way	1x RS-232: 4-pin Phoenix   2 Way (RX only)   Routed   API Programmable	1x RS-232: 4-pin Phoenix Connector   2 Way   Broadcast   Routed   API Programmable
Power				
Power Supply	12V DC 1A	12V DC 1A	12V DC 1A	12V DC 3A
PoE	IEEE 802.3af   12V 1A 12.95W	IEEE 802.3af (15.4W at PSE)	IEEE 802.3af (15.4W at PSE)	NA
Power Consumption	6W (DC adapter)	8.3W (with PSU)	8W (with PSU)	TX: 15.24W   RX: 18.64W
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	20.47 BTU/hr	31 BTU/hr	51.18 BTU/hr	63.6 BTU/hr
Regulatory				
Safety and Emission	CE   FCC   RoHS   EAC   RCM			

For all discontinued NetworkHD documentation, visit the [Discontinued webpage](#).