

AV Over IP Scaling Multimedia Extender with USB KVM, RS-232 and IR



VINX-120-HDMI-ENC

Description

VINX-120-HDMI-ENC is a LAN based encoder multimedia device to extend HDMI video from a local source to a remote sink. The VINX encoder and decoder devices connect either via a direct CATx cable connection or through a Gigabit Ethernet switch in between. The maximum delivery distance can reach to up to 100 m with minimal latency and employing a quality, proprietary wavelet transform based image compression.

The maximum supported resolution is 3840 x 2160 @ 30Hz with 7.1 audio.

VINX devices support both static and dynamic (DHCP) IP address settings. 100 factory EDID presets and five user EDIDs are stored in the encoder. These units feature embedded web for control.

Front panel DIP switches serve quick manual setting for pairing maximum 15 encoder devices to decoders over the network, a quick and easy installation advantage for digital signage applications. Gap and bezel compensation can be adjusted for video walls. Scaling is available on the decoder side and videos can be freely cropped. With the help of the VINX Video Wall Wizard, installation of a video wall can be reduced to one tenth of the usual time needed when using similar, third party products.

Network Requirements

1GbE network with Layer 3 switch (IGMPv2, IGMP Snooping, IGMP Fast Leave, Jumbo Frame Support, Multicast Filtering).

Highlight Features

- 3840 x 2160 @ 30Hz resolution over a 1 Gigabit network with very low latency
- Up to HDMI 1.4 4K 2160p@60Hz 4:2:0 Video Input supported
- Audio supports LPCM and Dolby Digital /Dolby Digital Plus/DTS/ Dolby TruHD/DTS-HD bit stream
- HDCP compliant
- Local HDMI port for monitoring on the TX
- Variable maximum bit rate (10 Mbps ~ 800 Mbps)
- USB pass-thru for IP KVM application
- LED feedbacks, DIP switches and physical buttons for quick and easy setup and operation
- Embedded web control, direct and networked control via PC
- The device can be controlled via Lightware's proprietary LW3 protocol commands
- Gap and bezel compensation for video wall applications, cropping adjustment capability
- Output video signal scaling to adjust to sink properties
- No Acoustic Noise

Recommended Applications

- Shopping malls and video walls
- Sports bars
- Schools/universities
- Server farms (KVM)
- Corporate meeting rooms
- Multiroom ocean cruisers

Specifications

Component Type	Transmitter
Dimension (Lx W x H)	140 x 119 x 26 mm
AV Interface	HDMI Female (In) HDMI Female (Out, Loopback)
USB Device	Mini USB Type B
Power consumption	Max 8W
TX/RX Connector	RJ45 Female
Switch	4 Position Dip Switch
IR	3.5mm Jack Female
RS-232	RJ12 Female
Max Image Resolution	3840 x 2160 @30Hz, 1080p@120Hz
Power Adapter	DC 5V
Operation Temperature	0 ~ 40°C
Storage Temperature	-20 ~ 60°C
Humidity	0~90% RH, Non-condensing
Weight	310g
Housing	Metal enclosure
Safety / Emission	CE, FCC

Video Transmission Modes

In AV-Over-IP operation the bandwidth needs of signal transfers depend on the properties of the video signal: larger resolution and better quality videos require more bandwidth in the network. VINX is designed to operate in 1G networks, but unlike most competition products, VINX does not need the whole bandwidth to perform well.

Typical Video Network Bandwidth Values

- Still frame < 216Kbps
- Web browsing 70~100Mbps (1920x1080) 60fps
- YouTube full screen 21~132Mbps (1920x1080) 60fps
- Movie average 165~315Mbps (1920x1080) 60fps (Avatar BD Scenes 3 7:53~12:05)

VINX Video Transfer Bandwidth* Values*

Video Resolution	Quality Level	Max Frame Rate	Average Network Bandwidth (Mbps)
3840x2160 (2160p30)	Auto	30	218 (146~268)
1920x1080 (1080p)	Auto	60	133 (80~210)
1280x720 (720p)	Auto	60	147 (112~177)
1600x1200 (UXGA)	Auto	60	81 (57~105)
1280x1024 (SXGA)	Auto	60	113 (79~150)
1024x768 (XGA)	Auto	60	81 (72~120)
800x600 (SVGA)	Auto	60	66 (49~82)
640x480 (VGA)	Auto	60	43 (29~56)

* The video bandwidth may at moments reach up to 850 Mbps in rare usage scenarios. In most cases however, bandwidth charge is much smaller, as this table shows.

There are two Quality Modes selectable in VINX:

1. Video Mode (Lower Quality vs Less Bandwidth): using adaptive video encoding VINX determines the optimal video quality for the available network bandwidth. In this mode the priority is on the safe and secure video transfer performed without losing frames. If the available bandwidth is poor, then less demanding video quality setting is used, while if a bigger bandwidth is safely available then the video quality will be set to be better.
2. Graphic Mode (Higher Quality vs More Bandwidth): VINX will not consider available bandwidth, but selects the best possible video quality. If the bandwidth is not good enough to transfer all the information, then some of the frames may be dropped.

Setting Maximum Bandwidth Limit

The preferred and default setting in VINX is the Video Mode. In Video Mode it is also possible to set the maximum video bandwidth in the encoder VINX device. The maximum video bandwidth to be used can be set to 10/20/50/100/150/200 Mbps values. When the device is in Video Mode, the system automatically sets the maximum usable bandwidth to the set value which will not be exceeded.

If users set a limit to the maximum bandwidth for transmitting video, then a 1Gbps network can safely accommodate multiple VINX unit based video transmissions without lockups in the data stream.

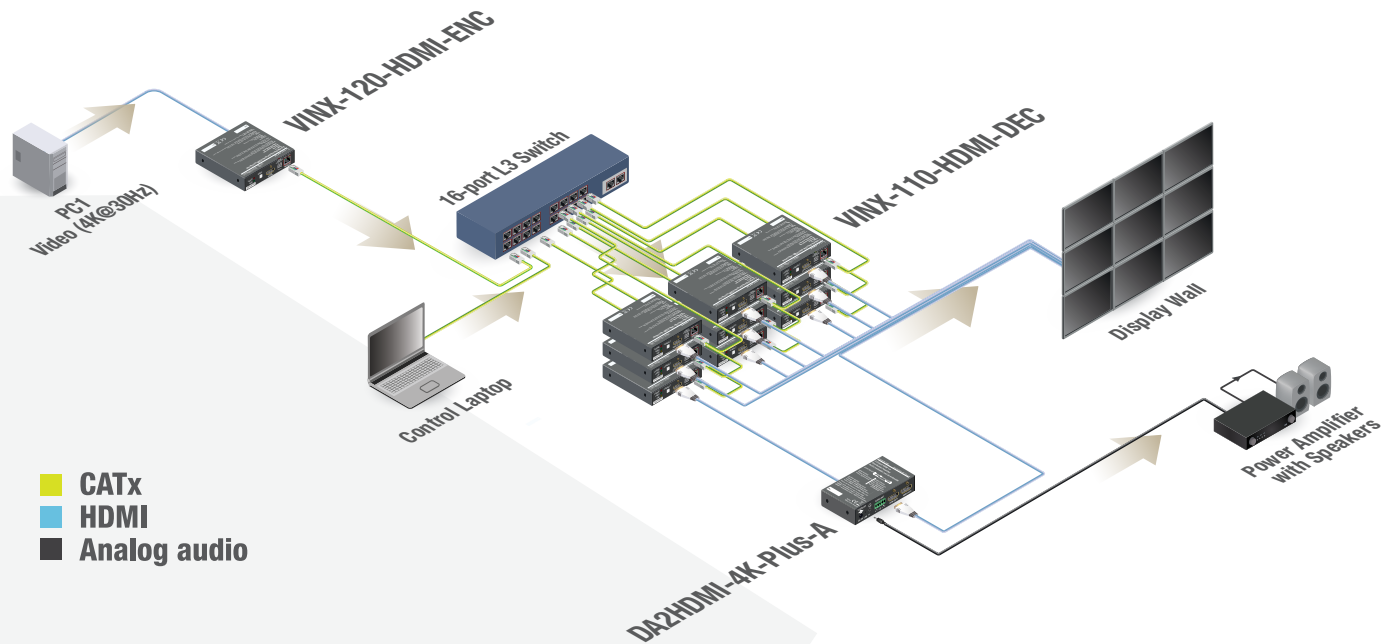
Supported Video Formats

Resolution	Refresh Rate (Hz)
640 x 480	50/59/60/72/75
720 x 480 (480P)	56/59/60/72/75
720 x 576 (576P)	50/60/70/72/75
800 x 600	56/60/70/72/75
1024 x 768	60/70/72/75
1152 x 864	50/69/60/75
1280 x 600	50/59/60
1280 x 720 (720p)	50/59/60/75
1280 x 768	50/59/60/75
1280 x 800	50/59/60/75
1280 x 960	50/59/60
1280 x 1024	50/59/60/75
1280 x 768	50/59/60/75
1280 x 768	50/59/60/75

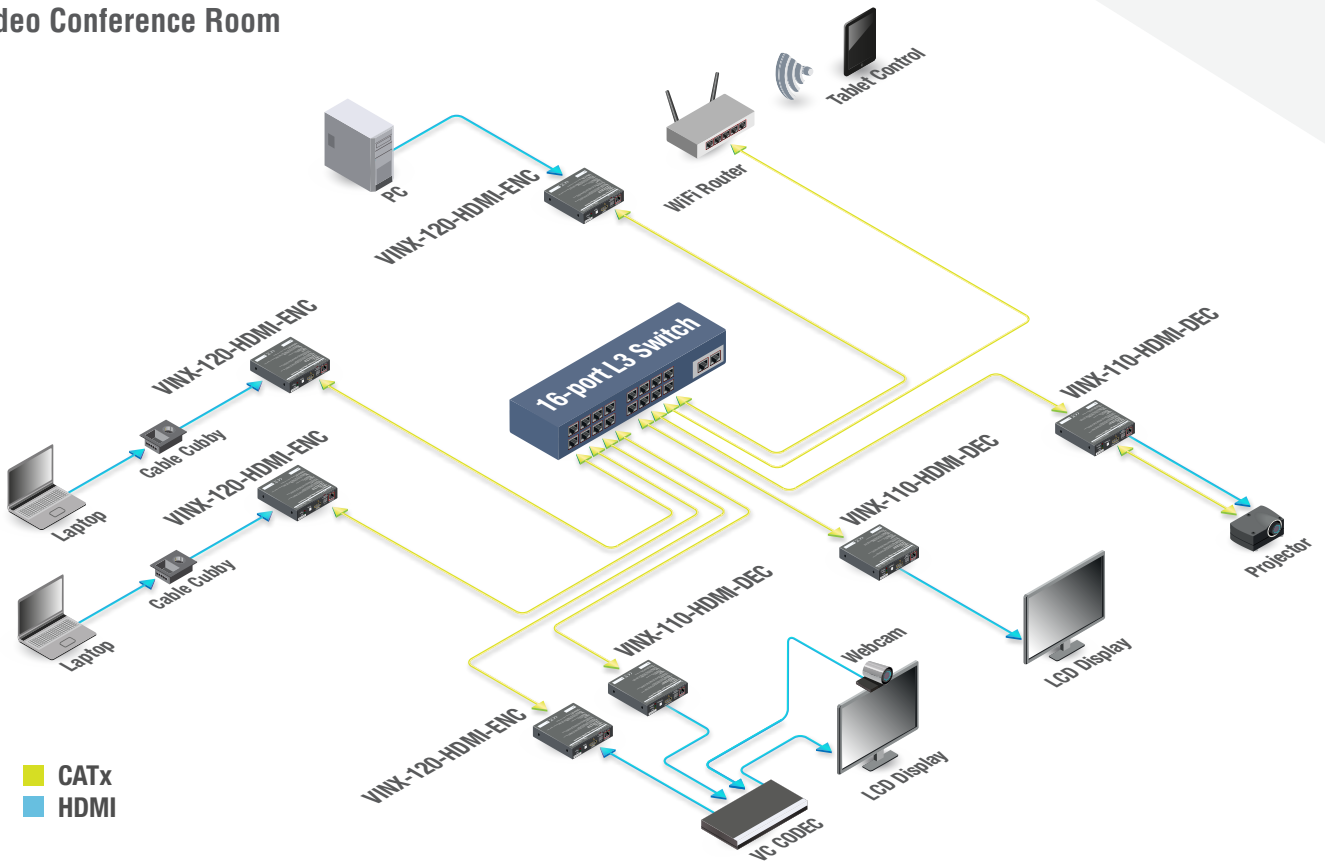
Resolution	Refresh Rate (Hz)
1400 x 1050	50/59/60
1440 x 900	50/59/60/70/75
1600 x 900	50/59/60
1600 x 1024	59/60
1600 x 1200	50/60
1680 x 1050	59/60
1920 x 1080i	25/29/30
1920 x 1080 (1080P)	50/59/60
1920 x 1200	50/60
2560 x 1080	24/25/30/60
2560 x 1200	30/60
2560 x 1600	60
3840 x 2160	24/25/30/60
4096 x 2160	24/25/30/60

Network AV Application

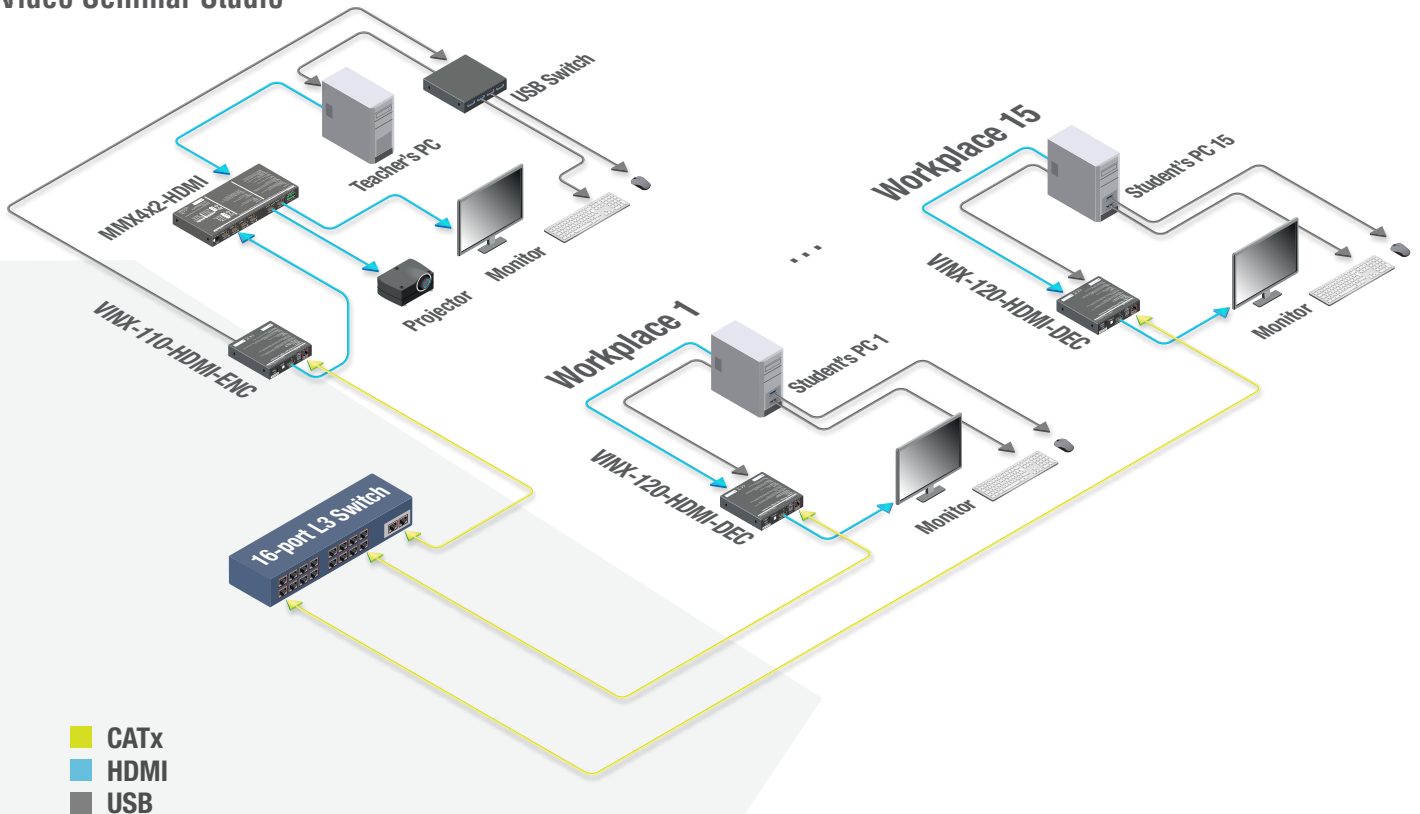
Video Wall



Video Conference Room



Video Seminar Studio



VINX Variant Comparison Table

	VINX-120-HDMI-ENC	VINX-120AP-HDMI-ENC	VINX-120AP-HDMI-ENC-DNT	VINX-210AP-HDMI-ENC		
AV Ports of Encoders						
HDMI input	✓	✓	✓	✓		
VGA input	✗	✗	✗	✓		
HDMI local output	✓	✓	✓	✗		
Analog audio input	✗	✓	✓	✓		
Dante / AES67 Audio output	✗	✗	✓	✗		
	VINX-110-HDMI-DEC	VINX-110AP-HDMI-DEC				
AV Ports of Decoders						
HDMI output	✓	✓				
Analog audio input	✗	✓				
	VINX-120-HDMI-ENC	VINX-120AP-HDMI-ENC	VINX-120AP-HDMI-ENC-DNT	VINX-210AP-HDMI-ENC	VINX-110-HDMI-DEC	VINX-110AP-HDMI-DEC
Ethernet and Control Ports						
RJ45 Ethernet	✓	✓	✓	✓	✓	✓
SFP Ethernet	✗	✓	✓	✓	✗	✓
RS-232	RJ12	9-pole D-sub	9-pole D-sub	9-pole D-sub	RJ12	9-pole D-sub
USB	Mini USB Type B	USB Type B	USB Type B	USB Type B	4x USB Type A	4x USB Type A
Video Features						
Image resolution	3840 x 2160 @ 30Hz	3840 x 2160 @ 30Hz	3840 x 2160 @ 30Hz	3840 x 2160 @ 30Hz	3840 x 2160 @ 30Hz	3840 x 2160 @ 30Hz
EDID Management	Advanced Management	Advanced Management	Advanced Management	Advanced Management	Transparent	Transparent
HDCP	HDCP 2.2	HDCP 2.2	HDCP 2.2	HDCP 2.2	HDCP 2.2	HDCP 2.2
Scaling	✗	✗	✗	✗	✓	✓
Powering and Mounting						
Local Power	5V	12V	12V	12V	5V	12V
Acoustic Noise	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB
PoE Remote powering	✗	✓	✓	✓	✗	✓
RU Width for rack mounting	1/4	1/2	1/2	1/2	1/4	1/2
Power Rack Tray compatibility	✓	✗	✗	✗	✓	✗