Data sheet

AVoIP Models

VHX-EN6350
VHX-DC6350

VHX
www.smart-e.com

Professional high definition AVoIP 1080p encoder and decoder for HDMI, Audio, IR, RS232 & USB with POE

VHX-EN6350

Features

The VHX-EN6350 is a flexible and cost-effective Audio and Video over Internet Protocol (AVoIP) encoder for HDMI, audio, infrared, R232, IR and USB 1.1 signals. The units enable high definition HDMI signals up to 1080p or 1920x1200 resolutions to be transmitted over a 1G Ethernet network with minimal latency and excellent visual quality.

Tech spec

- HDMI 1.3
- 1080p@60Hz, 4:4:4
- 1920 x 1200, 4.95G
- HDCP 1.4 compliant
- USB 1.1
- 1G Ethernet
- H.264/265 compression
- Monitoring H.265 stream
- RS232 extension
- 100m CAT 6 cable
- Video matrixing
- CEC compliant

Features

- Scalable
- Low latency
- Unicast & Multicast
- Point to point
- Video matrixing
- Mounting brackets
- HD digital audio
- Near unlimited distance
- Video Wall 9x9 feature
- Secure DC connection
- POE – switch powered
- Compact metal box

Description

The VHX-EN6350 encoder allows the connected HDMI video to be compressed into 2 independent IP streams. The primary H.265 stream provides a very high quality video and audio transmission with less than a frame duration latency whilst the secondary H.264 stream can be used for monitoring via standard software or third party applications. The VHX-EN6350 can accept HDMI signals up to 1080p or 1920 x 1200 resolutions and up to 60Hz frame rate.

Video streaming is compatible with a standard 1G Ethernet IGMP switcher using the Unicast and Multicast protocols. Point to point, point to multipoint and matrix switching can be achieved easily using industry standard Ethernet switchers and installation enhanced with the POE feature. Switching is fast and seamless giving a professional broadcast experience. A USB host connection allows a connected computer to extend USB V1.1 signals to a VHX-DC6350 decoder which can provide the facility for up to 5 peripherals to be added. Other control signals can also be transmitted over the same network which can be used for RS232, infrared and CEC signals.

The VHX-EN6350 together with the decoder VHX-DC6350 provide a highly scalable and cost-effective solution for distributing HD video and control signals for a multitude of applications. Video walls can also be created with multiple decoders up to a 9x9 system.

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VHX-DC6350

Features

1080p 4:4:4 60Hz	HDMI V1.3	HDCP V 1.4	EDID Management	1Gbps Ethernet	POE Remote power	iR Bi-dir & routing
Seamless switching	AUDIO De/Embedding	Output video scaling	RS232 Full duplex & routing	Video wall	USB V1.1 for KVM	Preview channel

The VHX-DC6350 is a flexible and cost-effective Audio and Video over Internet Protocol (AVoIP) decoder for HDMI, audio, infrared, R232, IR and USB 1.1 signals. The units enable high definition HDMI signals up to 1080p or 1920x1200 resolutions to be received over a 1G Ethernet network with minimal latency and excellent visual quality.

Tech spec

- HDMI 1.3
- 1080p@60Hz, 4:4:4
- 1920 x 1200, 4.95G
- HDCP 1.4 compliant
- USB 1.1
- 1G Ethernet
- H.264/265 compression
- Monitoring H.265 stream
- RS232 extension
- 100m CAT 6 cable
- Video matrixing
- CEC compliant

Features

- Scalable
- Low latency
- Unicast & Multicast
- Point to point
- Video matrixing
- Mounting brackets
- HD digital audio
- Near unlimited distance
- Video Wall 9x9 feature
- Secure DC connection
- POE – switch powered
- Compact metal box

Description

The VHX-DC6350 decoder provides the interface and conversion between the IP stream present on the Ethernet network and the HDMI and control signal outputs. The VHX-DC6350 is able to convert the compressed H.265/264 stream back to the original HDMI signal and output it as a 1080p resolution video up to 60Hz frame rate. The unit also has an output scaler enabling the video to be adjusted to the native resolution of the connected display.

Video streaming is compatible with a standard 1G Ethernet IGMP switcher using the Unicast and Multicast protocols. Point to point, point to multipoint and matrix switching can be achieved easily using industry standard Ethernet switchers and installation enhanced with the POE feature. Switching is fast and seamless giving a professional broadcast experience. A USB host connection to the VHX-EN6350 encoder allows a computer to extend USB V1.1 signals to a VHX-DC6350 decoder which can provide the facility for up to 5 peripherals to be added. Other control signals can also be transmitted over the same network which can be used for RS232, infrared and CEC signals.

The VHX-DC6350 together with the encoder VHX-EN6350 provide a highly scalable and cost-effective solution for distributing HD video and control signals for a multitude of applications. Video walls can also be created with multiple decoders up to a 9x9 system.

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Technical Specification

Video – Digital

Connectors	1 x HDMI (Type A) input/output VHX-EN6350 1 x HDMI (Type A) output VHX-DC6350
Signal type	HDMI - TMDS
Standards	HDMI 1.3. HDCP 1.4
Compression standard	H.264/H.265
Maximum data rate	1.65Gbps per colour
Maximum pixel clock	165MHz
Resolution range - DTV	Max 1920x1080 @60Hz 36 bit colour depth
Resolution range - PC	Max 1920x1200 @60Hz 36 bit colour depth
Frame rate	24, 25, 30, 50 & 60 Hz
Gain	0 dB
Formats	RGB and YCrCb
Colour space	4:4:4, 4:2:2 & 4:2:0
Colour depth	Input: 8-bit, 10-bit, 12-bit (1080p@60Hz) Output: 8-bit
Clock jitter	<0.15T bit
Rise time	<0.3T bit (20-80%)
Fall time	<0.3T bit (20-80%)
Maximum transmission delay	5ns (+/- 1ns)
Signal strength	TMDS +/- 0.4V pk-pk
TMDS signal level	2.9V – 3.3V
Impedance	50R
Maximum DC offset	15mV
Maximum input cable length	15m 24 AWG
Maximum output cable length	15m 24 AWG

Audio – Digital

Standards	Embedded in HDMI - LPCM 2CH 32/44.1/48KHz
Maximum audio channels	8
Maximum sample rate per channel	192 kHz
Sample size	16-24 bits

Audio – Analogue

Standards	Stereo - unbalanced
Bandwidth	20 - 20 kHz
Connector	3 pin phoenix

Power

POE	802.3af Class 3, PD mode
Optional DC Voltage	External 12V/1A PSU
DC connector	2.1mm jack with screw fitting
AC Voltage (External Supply)	100-230 VAC
AC frequency (External Supply)	50/60 Hz
Power consumption	<8W encoder and <4W decoder
Operating temperature	(-10) to 45 degrees C
Storage temperature	(-20) to (-60) degrees C
Relative humidity	20 to 90% RH (no condensing)
Dimensions	205 x 100 x 21.5mm
Product weight	0.5Kg
MTBF	30,000 hours

Control – USB

Connector	USB type A & B (encoder) type A (decoder)
Signal type	USB - half duplex
Standards	USB 1.1
Maximum datarate USB 1.1	12 Mbits/s
USB signal level	0-3V3 logic zero or one
Impedence	100R

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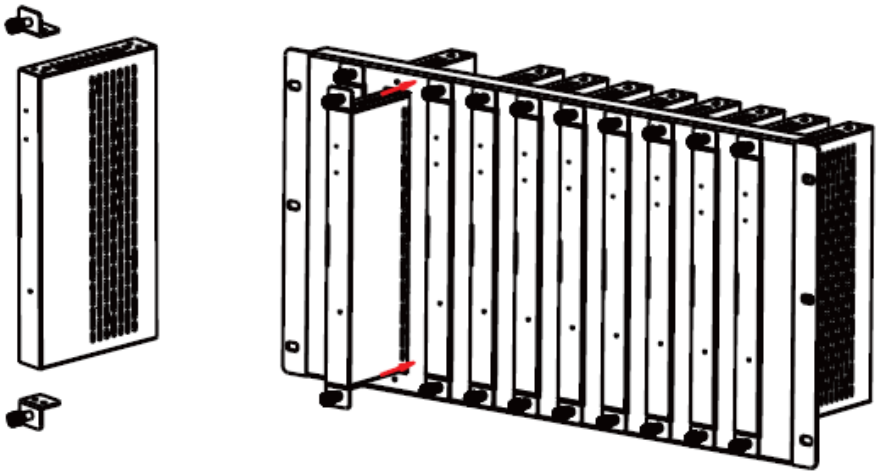
Technical Specification (cont)

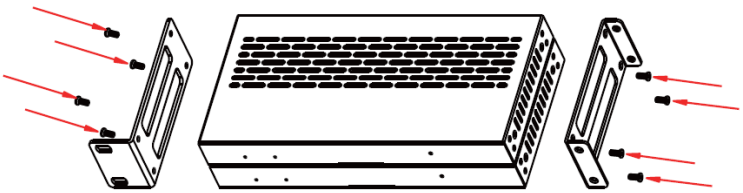
Control – RS232	
Connector	3pin Phoenix
Signal type	Full duplex
Signal level	+/- 5V
Baud rate	Up to 115200
Data bits	8
Stop bits	1
Parity	None
Pinout	1-RX, 2-0V, 3-TX
Control – IR	
Connector	3.5mm mini-jack socket
Signal type	Full duplex (via 2 connections)
Signal bandwidth	20-60KHz

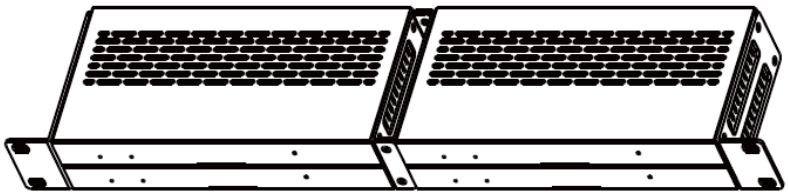
Cat cable connectivity	
Number of cables	4 x Cat 5e/6 screened twisted pair cables
Connectors	4 x female screened RJ45 connectors per unit
Termination standard	TIA/EIA T568B
Cable requirements	Solid conductor, 24 AWG or better
Cable recommendations	400 MHz bandwidth STP (shielded twisted pair)
Transmission distance	100m 100ME or 1GE Ethernet

Rack mounting kit x 10 (6U)



Rack mounting kit x 4 (1U)





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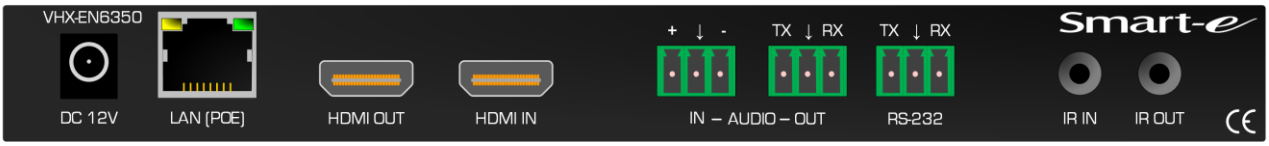
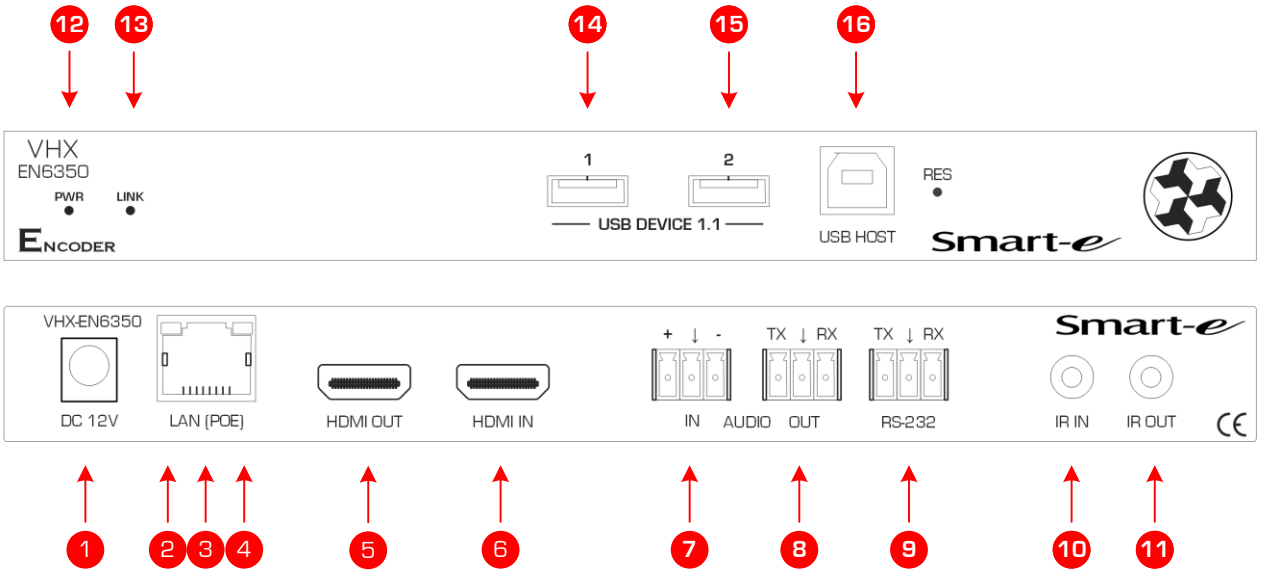
VHX-EN6350 – panel drawing



VHX-EN6350 - connectivity

12	Power LED	Power on status - red
13	Network LED	Network status – green
14	USB V1.1	USB 1.1 device connection
15	USB V1.1	USB 1.1 device connection
16	USB V1.1	USB 1.1 host connection



1	DC	12V local PSU (optional)
2	Data LED	Flashing data status – yellow
3	RJ45	100m/1G network connection
4	Link LED	Network link – green
5	HDMI OUT	HDMI looping output
6	HDMI IN	HDMI input

7	AUDIO IN	Stereo analogue audio i/p
8	AUDIO OUT	Stereo analogue audio o/p
9	RS232	RS23 full duplex connection
10	IR IN	Infrared input via receiver
11	IR OUT	Infrared output via emitter

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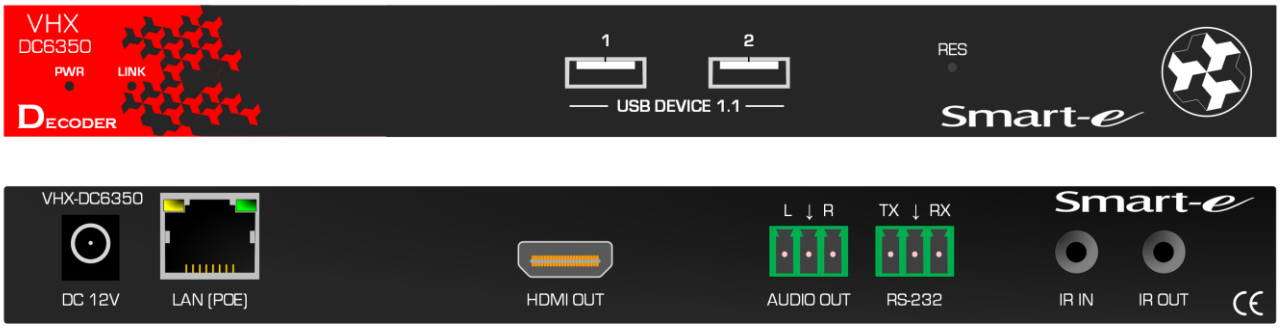
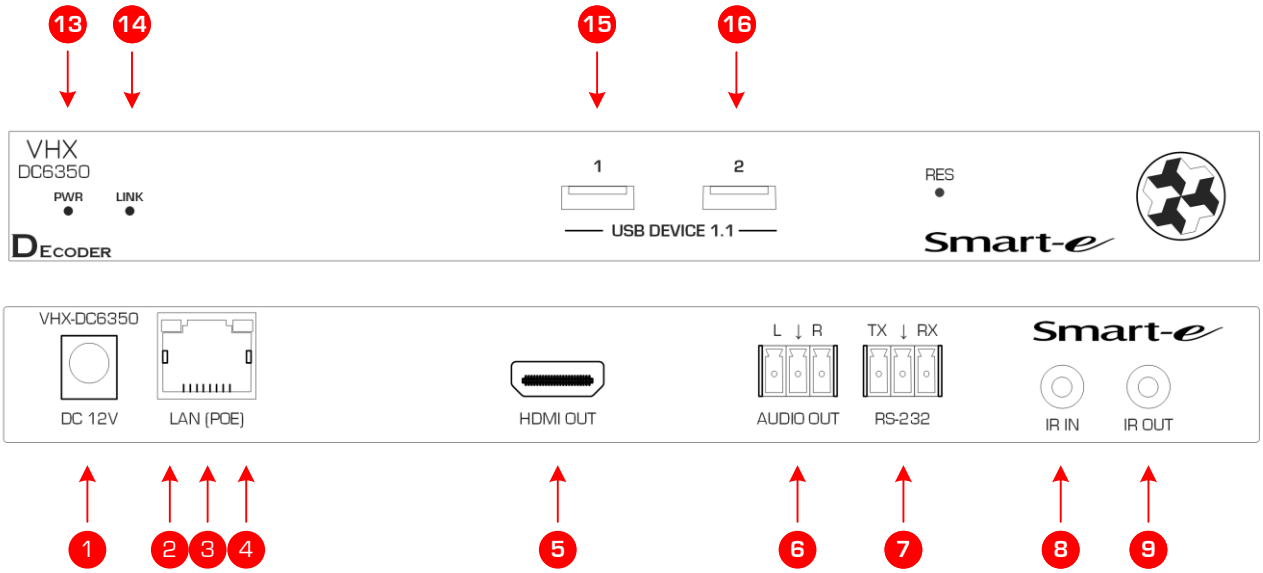
VHX-DC6350 – panel drawing



VHX-DC6350 - connectivity

13	Power LED	Power on status - red
14	Network LED	Network status – green
15	USB V1.1	USB 1.1 device connection
16	USB V1.1	USB 1.1 device connection



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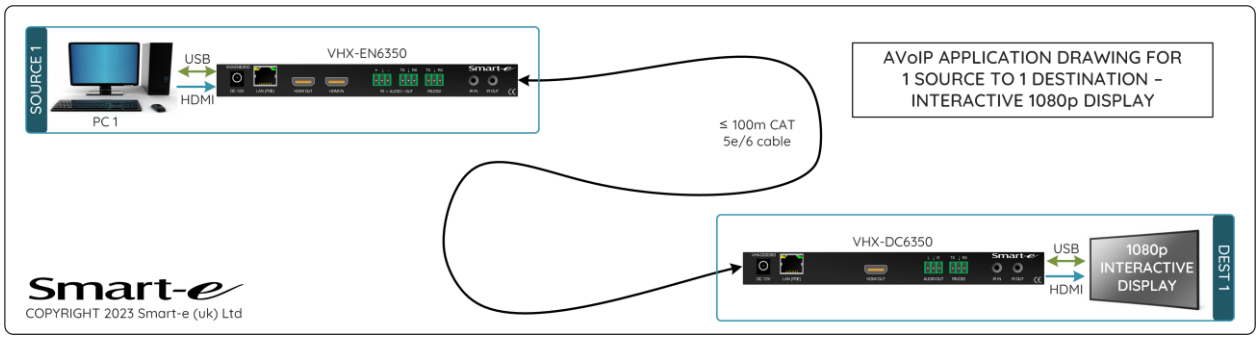
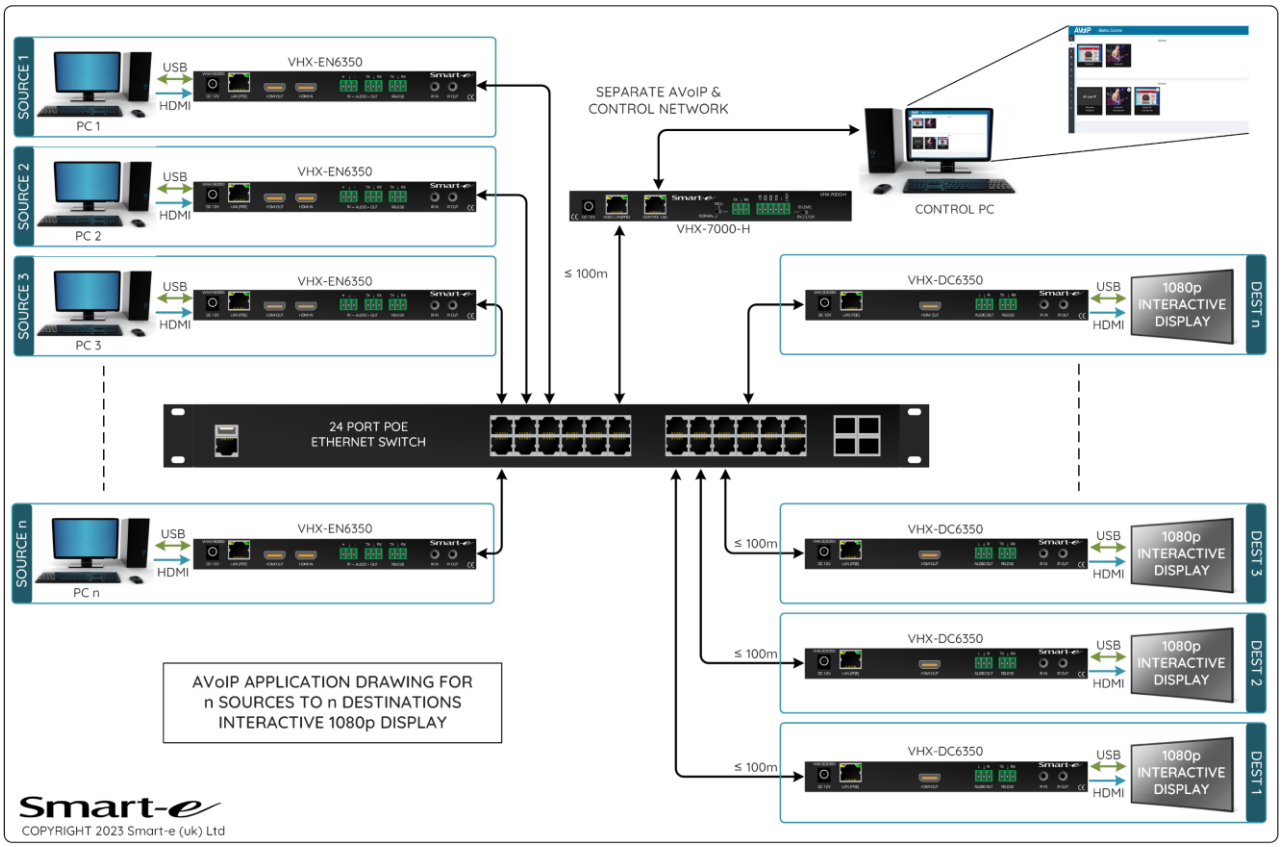
Application drawing – point to point



Application drawing – multicasting



Controller – VHX-7000-H

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