



) eStreaming

Solution to transmit DVI Signals over Standard TCP/IP and low Latency Realtime Networks

) PRODUCT DESCRIPTION

In the past, the distribution of DVI signals was realised with hardware based matrix switchers. Providing these kinds of signals in different rooms or other destinations across long distances has become an important issue. Today, these signals have to be distributed to any location without borders and limitation. The eyevis eStreaming solution now provides a technology to transmit DVI Signals in real-time across networks with a very low latency. The system is based on an encoder/decoder solution which transmits the signal with a special eyevis eJPEG compression over networks which needs only little bandwidth on the network. The signals can be decoded again everywhere without a loss of quality. This functionality offers a flexible virtual network matrix with a wide range of possibilities to transmit signals.

Encoder and Decoder in one Box

The system is based on encoders and decoders, so called eStreamers. The eStreamer can work in encoder or decoder mode and even in both modes simultaneously in bi-directional connections.

Inputs

The eStreamer can process any DVI signal up to a resolution of 1920x1200 pixels. Interlaced signals are also supported. The eStreamer is further equipped with a loop-through DVI output to connect a local monitor on the encoder side.

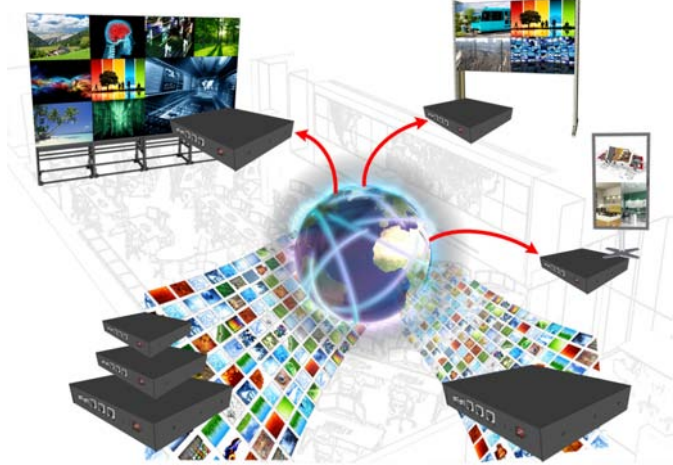
Low Latency Full Frame Rate Video Transmission

The signals are captured at full frame rate and will be compressed to reduce the bandwidth on the network to increase the number of possible simultaneous video streams in the network. The real-time mode is based on an eJPEG compression and can stream signals in lossless quality up to 4:4:4 across the network. The mode supports resolutions up to 1920x1080px with 60fps or 1920x1200px with 30fps with a low latency. The compression method is suitable for any kind of video content and can be used for broadcast solutions or high-end applications in which quality and refresh have to be guaranteed.

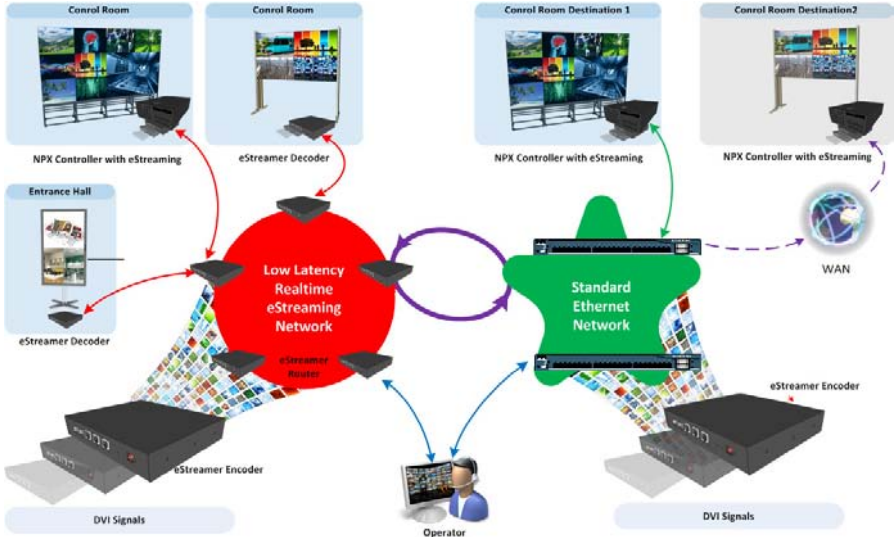
In static mode the eStreamer is streaming signals on a network with the standard eyecon capture compression which needs an ultra-low bandwidth across the network. Signals are refreshed only with 5-10fps but with a very high quality. These modes are usually used for KVM control and transmitting signals over limited networks. In this mode hundreds of signals can be transmitted over 100MB & 1GB connections.

Nearly Zero Latency Network

The key benefit of the system is the capability of the eStreaming solution to work on standard Ethernet networks as well as on an unique dedicated guaranteed nearly zero latency network. This guarantees zero latency even if large numbers of signals are streamed on the network. The nearly zero latency network is unique in the market and uses special eyevis network routers to provide a guaranteed latency, high bandwidth and fully synchronized delivery in the network without packet loss. The eStreamers will in future also support the new IEEE 802.1 Audio Video Bridging (AVB) technology.



) SYSTEM OVERVIEW



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) STANDARD OR FIBER OPTIC NETWORK INTERFACE

The eStreamer S460 comes with a standard 1GB ethernet interface and also with a fiber optic ethernet interface. The unique fiber optic interface can be used for long distance networking, to avoid disturbing interferences or in special environments.



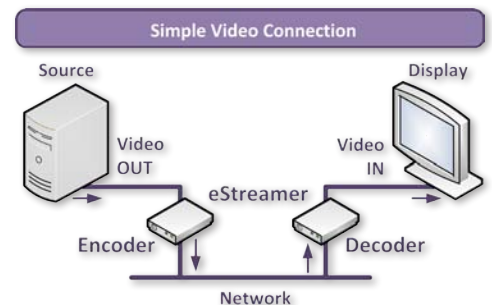
) KEYBOARD AND MOUSE CONTROL

With the USB connector on the encoder and decoder it is possible to connect a keyboard and mouse from an external PC. The control can be done on the decoder but also with software on every PC client in the network. The global management tool is the eyevis eyecon control room manager software and eyeKVM software solution.



) KEY BENEFITS:

-) Streaming over standard TCP/IP or real-time network with zero latency
-) Guaranteed fully synchronized delivery of streams
-) eyevis unique eJPEG compression for low bandwidth and high quality up to 4:4:4 and full frame rates
-) Encoder and decoder in one box with bi-directional streaming
-) KVM support
-) eyevis eyecon capture stream compatibility
-) Standard RJ45 & fiber optical connection with standard SFP modules



) CONTROL SOFTWARE

The setup and control of each eStreamer is managed with the powerful eyecon software. For an easy management of large screen displays, we recommend to include eyecon wall management software in your system. With this software, especially developed for large screen displays, the user has nearly unlimited possibilities for the management and operation of his display wall.



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) SOLUTIONS & MARKET



The solution can be used for the transmission of DVI signals over long distances, in WAN connection, multiple rooms, between buildings or technical rooms. The eStreaming solutions are ideal for control rooms, meeting rooms, simulation, training and education. All devices work together in virtual matrix functionality.

The eStreaming solution can be combined with all eyevis products to stream signals across the network and display them on NPX Controllers, standalone displays, projectors or video walls.

) FEATURES & MODEL VERSIONS

- eStreamer:** Global features eS100 & eS460
-) Real-time streaming or static eyecon capture streaming
 -) Low latency streaming
 -) DVI-D inputs with support of computer resolutions up to 1920x1080px with 60fps
 -) 4:2:0, 4:2:2 & 4:4:4 and selectable bandwidth rate and quality
 -) Switchable encoder/decoder with bi-directional streaming
 -) Unicast / multicast support
 -) USB connection for KVM control (keyboard & mouse)

- eStreamer S100:** Streamer for standard TCP/IP networks
-) Transmission over any ethernet network in LAN & WAN
 -) Framerate up to 30fps with 1080p in 4:4:4, 60fps with 4:2:0. 720p@60fps in 4:4:4.
 -) Standard Ethernet network interfaces

- eStreamer S460:** Streamer for standard TCP/IP & real-time low latency networks
-) Transmission over any ethernet network in LAN & WAN
 -) Transmission over eyevis eStreaming real-time low latency networks
 -) Guaranteed fully synchronized delivery of streams
 -) Framerate up to 60fps up to 1080p in 4:4:4
 -) Standard ethernet network interfaces
 -) Low latency eStreaming network
 -) SFP ports module for fiber optical connection
 -) Possibility to connect 15x other encoder & decoder devices in daisy chain network

- eRouter:** Real-time low latency networks
-) Standard Ethernet network interfaces,
 -) Low Latency eStreaming network
 -) SFP ports module for fiber optical connection
 -) Possibility to connect many routers together in a ring topology

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Solution to transmit DVI Signals over Standard TCP/IP
and low Latency Realtime Networks

) TECHNICAL SPECIFICATIONS

) eStreamer eS100/eS460

Encoder Input:	Signal type:	1x DVI-D Input (HDMI/DisplayPort with optional adapter)
	Resolutions:	640x480 to 1600x1200 and 1920x1200, 720P, 1080i, 1080p
	Loop through:	1x DVI-D Output (HDMI/DisplayPort with optional adapter)
Decoder Output:	Signal type:	1x DVI-D Output (HDMI/DisplayPort with optional adapter)
	Resolutions:	640x480 to 1600x1200 and 1920x1200, 720P, 1080i, 1080p
Processing:	Sampling:	24Bit
	Colors:	16M
	Color format:	All resolutions with 4:2:0, 4:2:2 and 4:4:4 Chroma subsampling
	Compression:	eyevis eJPEG Codec or eyevis Capture Stream
	Latency:	35ms
	Bitrate:	10Mbit – 500Mbit (Selectable)
	Quality:	10-100 (selectable)
	Frame rate:	eS100: up to 60fps at 1920x1080 with 4:2:0 and 1280 x720 with 4:4:4 eS460: up to 60fps at 1920x1080 in 4:4:4
Network:	Ethernet Port:	1x 10/100/1000Mbit TX Ethernet Port half/full duplex AutoDetect
	eStreaming Port: (only eS460)	2x RJ45 - high speed (eS460 only) 2x SFP Port - high speed (eS460 only)
	Protocol:	ICMP & IGMP, TCP/UDP, RTP, Unicast/Multicast
	Management:	eyeconControl, eyecon Setup
General:	Power:	External Power supply 100VA to 240VA, 50 -60Hz, 5VDC, 5A max.
	Operating conditions:	0°C to 35°C temperature environment, 20% - 80% non-condensing
	Weight:	1.1 kgs
	Dimensions:	220 x 44.5 x 198mm (W x H x D)

) eRouter

Network:	Ethernet Port:	1x 10/100/1000Mbit TX Ethernet Port half/full duplex AutoDetect
	eStreaming Port: (only eS460)	1x RJ45 - full speed 4x RJ45 - high speed 1x SFP Port - high speed
	Protocol:	ICMP & IGMP, TCP/UDP, RTP, Unicast/Multicast
	Management:	eyeconControl, eyecon Setup
General:	Power:	External Power supply 100VA to 240VA, 50 -60Hz, 5VDC, 5A max.
	Operating conditions:	0°C to 35°C temperature environment, 20% - 80% non-condensing
	Weight:	0.8 kgs
	Dimensions:	220 x 44.5 x 135mm (W x H x D)