



Features

- Video & Audio Transmission over IP
- JPEG 2000 Compression/Expansion
- Supports All Video Standards up to 1080p 60Hz
- Audio Embedding / De-embedding
- Audio and Video Synchronized to Each Other
- Video Signals: 3G HD-SDI, HDMI and DVI-D
- Audio Signals: Digital and Analog
- Dual 1 Gbps Ethernet Interface
- HDCP Encryption Over Ethernet
- USB 2.0 Master and Slave Port
- RS232 Programming Interface

Applications

- Video Conferencing
- Digital Signage
- Broadcast Contribution
- Distance Learning
- Command and Control Centers
- KVM Extension over IP

High-Definition JPEG 2000 Codec over IP

Emcore's NV SERIES is a professional grade encoder/decoder that simplifies the transmission over IP of HDMI, DVI, HD-SDI streams with analog and digital audio. Utilizing JPEG 2000 compression technology, the system can transmit high quality video streams with corresponding audio over an IP network with extremely low latency.

The NV SERIES are perfect for transmitting HD movies or images over IP, as well as for Digital Signage, Broadcast Contribution, or any other applications where low latency (<20ms per end) and the highest quality video and audio signals are required. The built-in switching functionality of the NV encoders and decoders, in conjunction with the IP network, eliminates the need for video matrix switches. High quality HD video from any source can be connected to any display at any time over an IP network.

NV SERIES modules are part of a complete HD video over IP solution. An HD video signal is received by the encoder, compressed, and transmitted via an IP network. A decoder captures data from the IP network, decompresses it and plays it back in the original form as HD video. The modules come equipped with either an HDMI, DVI or 3G HD-SDI interface as required. This means that the video interfaces between sources and outputs can be mixed (e.g. HD-SDI camera connected to an encoder with playback on an HDMI monitor connected to a decoder).

JPEG 2000 compression allows considerable reduction of the data rate in the network without visible loss of quality. Minimal delay means that the modules are also suitable for use in broadcast applications. With the HDMI and HD-SDI inputs, audio signals can be embedded and de-embedded using the optional audio interface card. By using the USB 2.0 interface, data can be sent over the IP network for KVM applications.

IP networks may be localized or extended to cover several regions by means of optional WAN technology.

Encoders and decoders are supplied as stand-alone modules. They can be mounted in a 19" 1RU rack enclosure by twos, or singularly in a desktop enclosure. The devices can be configured via a web server, CLI interface or over Telnet. A simple software interface allows direct activation of the devices by any control software.

NV SERIES

JPEG 2000 Encoder/Decoder with Analog/Digital Audio



DATASHEET

IP ENCODING & DECODING

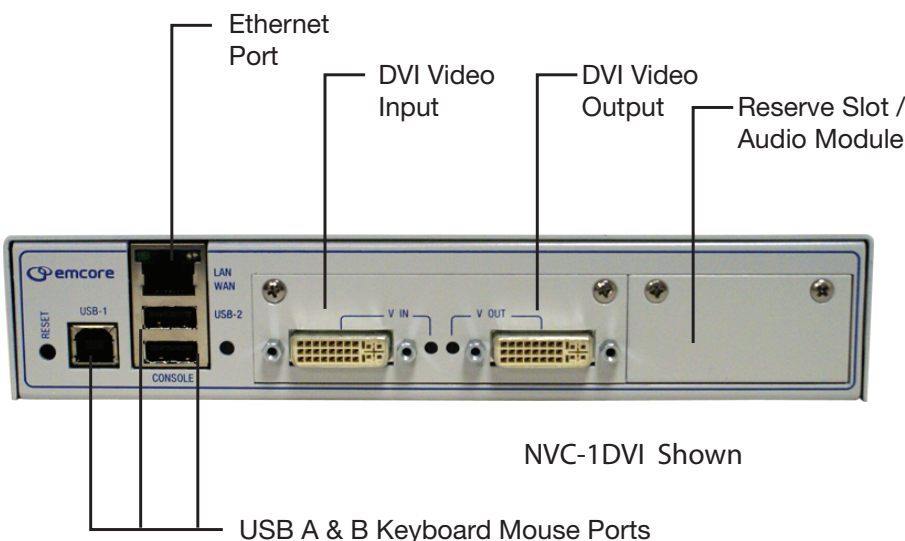
Ordering Information

Model	Description
NVC-1DVI	Codec, JPEG 2000, DVI-I or VGA (with adapter) input and output, HD, 1080P, USB, Stand-alone
NVE-1DVI	Encoder, JPEG 2000, DVI-I or VGA (with adapter) input, HD, 1080P, USB, Stand-alone
NVD-1DVI	Decoder, JPEG 2000, DVI-I or VGA (with adapter) output, HD, 1080P, USB, Stand-alone
NVC-1HDMI	Codec, JPEG 2000, HDMI 1.3 input and output, HD, 1080P, USB, Stand-alone
NVE-1HDMI	Encoder, JPEG 2000, HDMI 1.3 input, HD, 1080P, USB, Stand-alone
NVD-1HDMI	Decoder, JPEG 2000, HDMI 1.3 output, HD, 1080P, USB, Stand-alone
NVE-1-3G PRELIMINARY	Encoder, JPEG 2000, 3G HD-SDI, 1 BNC input, 3 BNC outputs, HD, SMPTE 424M, 292M and 259M, Stand-alone
NVD-1-3G PRELIMINARY	Decoder, JPEG 2000, 3G HD-SDI, 3 BNC outputs, 1 Genlock, HD, SMPTE 424M, 292M and 259M Stand-alone
NV-R1	19" 1RU rack mount chassis. Holds up to 2 NV series units
NV-PS	12 VDC Power supply

Physical Characteristics

Specifications	Values
Input Power	12 VDC +/- 10%
Power Consumption	13 Watts
Weight	6.2 lbs (2.8 kg)
Dimensions	16" W x 9.8" D x 1.77" H (40.5cm x 25cm x 4.5cm) (19" plug-in with 2 cards)
Operating Temperature	-20 to 80° C

Connection Diagram



Compliance



Encoding & Decoding

Specifications	Values
Compression	JPEG2000
Video Resolutions	1920x1080p maximum (HDMI) 1920x1200 maximum (DVI/VGA) 640x480i minimum
Latency	< 50 ms+ network latency
Frame Rate	24 Hz to 60 MHz
Pixel Clock	25 MHz to 150 MHz
Color Depth	12-Bit

HDMI/DVI

Specifications	Values
Video Input	HDMI 1.3 (HDCP Compliant) or DVI-D
Connectors	1 input HDMI/DVI and 1 output HDMI/DVI
DVI Interface	HDMI to DVI adapter (included)

3G HD-SDI

Specifications	Values
Data Rate	2.97 Gbps
Standards	SMPTE 424, 292 & 259
Encoder Video interfaces	1 input and 3 outputs
Decoder Video interfaces	3 outputs with Genlock
Connector Type	BNC

Audio

Specifications	Values
Channels	16 maximum
Frequency Range	20 Hz to 20 KHz
Sampling Rate	192 KHz
Coding	32-Bit uncompressed
Analog Interface	600 Ohm, 0 dB, Balanced & Unbalanced (switchable on the board)
Digital Interface	S/PDIF

Data Interface

Specifications	Values
Data	USB 2.0
Connector	USB type A (1), USB type B (1)

Network Interface

Specifications	Values
Ethernet	2x 10/100/1000 Base TX using RJ45
Data	USB 2.0

Management

Specifications	Values
Software	Internal web server
Serial Control	CLI over RS-232 comm port
Remote Monitoring & Control	SNMP v1, v2, v3