

Matrox Endea



Comprehensive OEM reference platform offers strategic H.264 encode/decode and video processing capabilities—including support for multiple formats up to 4K

Matrox Endea™ (Encoder and Decoder Appliance) is a highly customizable OEM reference platform that greatly facilitates the development of purpose-built encoders, decoders, and transcoders dramatically reducing R&D investment for designers of H.264 encoding and decoding and video switching/processing applications.

The Endea platform offers custom I/O options and flexible streaming and recording capabilities manipulating a mix of SD, HD, 4K (UHD & Digital Cinema), capture, display, switching, encoding, decoding, scaling, de-interlacing, compositing, framelock, genlock, mix of chroma sampling (4:2:0, 4:2:2 and 4:4:4), support for 8- and 10-bit color in RGB and YUV, and more.

Matrox provides basic input/output options to ingest and/or display video, but also gives OEMs reference designs, engineering schematics, FPGA source code, low-level hardware and software development libraries, best practices implementations for building encoders and decoders, reference materials for designing zero-latency pass-through, and individualized support as needed.

Feature Highlights

Encoding & Decoding

- Multiple simultaneous encoding/decoding support:
 - 2x UHD (60Hz)
 - 4x UHD (30Hz)
 - 8x Full-HD (60Hz)
 - 16x Full-HD (30Hz)
 - 100x SD (30Hz)
- 4:2:0, 4:2:2, 4:4:4 chroma sampling
- 8- and 10-bit YUV and/or RGB color modes
- Panasonic® AVC-Ultra and Sony® XAVC support
- Variable, user-defined programmable bit rates (CBR and VBR)
- Fully-programmable codec engine including GOP structure and frame management
- Low latency encode and decode modes

Streaming, Network and Recording

- Dual, independent 1GbE and MAC addressing offers managed, partitioned streaming and control links
- Multicast, Unicast and Multi-Unicast support
- Storage & Recording: Local, NAS or shared network drives
- Varied streaming protocol support:
 - RTSP/RTP/RTCP
 - RTP
 - RTMP
 - MPEG-TS
- Framelock based on IEEE1588 v2
- Rack mountable – dual-density 2U platform

General I/O

- Embedded Linux OS
- Main baseboard supports I/O such as:
 - Up to 8x USB 2.0 & 3.0 ports
 - 2x 1GbE ports
 - 2x SATA 2.0 ports
 - 2x RS-232 ports
 - Multiple GPIOs, Genlock
 - 2x DisplayPort 1.1 local console outputs
 - LINE IN/OUT, MIC IN and variety of audio formats
 - Flexible video I/O (e.g. HD/3G/6G-SDI, HDMI, DisplayPort, VGA and more; optional zero-latency pass through)
- Supplied with HDMI input and DisplayPort 1.1 output boards

Video Processing

- Multitap, multichannel upscaling and down scaling
- Content adaptive de-interlacing with antialiasing
- Multilayer compositing, keying, blending

Software and Management

- Matrox SDK for OEM development
- Develop and run application(s) locally
- Optional, high-quality, programmable touchscreen
- Built-in multi-viewer from local console outputs

Several Application Areas

High-Density Encoding/Decoding

- OEMs can target high-density applications of encoding/decoding including: resolution, quality, and number of streams for any vertical application.

Video Wall Distribution (Extend/Record/Share)

- Video wall outputs can be encoded into time-stamped H.264 streams sent over IP to be viewed/recorded at any end point. For complete video wall replication, multiple encoder platforms can be used to stream entire display walls to multiple decode units (all screens synchronized).

Multi-Channel Video & Digital Signage Distribution

- Encode and stream any content media including digital signage player PCs over the network. Standard H264 streams can be decoded by standard digital signage players as streaming content being displayed within the digital signage environment (example: sports/news).

Recording (PC, Camera, and Other Media)

- Most control rooms, emergency call-centers, medical operating rooms, military installations and critical applications require records of critical real-time desktop and video. The Endea platform can record any content type at full quality and in very low bit rates.

Communication & Collaboration

- Acquire and distribute a variety of AV and desktop sources simultaneously by streaming to/from Endea platforms for telepresence, security and/or collaboration in industrial, government, enterprise, and education applications.



HDMI add-in card
DisplayPort 1.1 add-in card

Matrox Endea front view



Matrox Endea back view

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