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MGW ACE

Compact HEVC / H.265 Hardware Encoder



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VITEC introduces MGW Ace, the world's first HEVC / H.264 hardware encoder in a professional grade compact streaming appliance. MGW Ace's advanced HEVC compression enables users to stream broadcast quality 1080p video with up to 50% bandwidth savings compared to today's H.264 standards.

Designed to support a diverse set of video streaming applications – MGW Ace features a wide range of inputs including HD-SDI, SDI, HDMI, DVI and Composite, user-intuitive web management software with full control of all H.265 compression settings. A secondary hardware based MPEG4-H.264 chip offers the ability to stream H.264 video in parallel to the network-efficient HEVC to support legacy systems.

MGW Ace boasts an all-hardware compression chip for real time encoding with advanced audio and metadata handling – all packaged in a portable device with low power consumption. MGW Ace makes it possible to take next generation HEVC encoding from the server rooms into the field for professional and industrial applications with easy integration to transport cases, TV trucks, military vehicles and aircraft.

Next-Generation HEVC / H.265 Streaming Reduces IPTV Bandwidth Costs

Whether it's live news broadcasting from the field, Point-to-Point contribution of HD video, live streaming from or within sports venues or distribution of mission-critical military imagery - demand for high quality real-time video anywhere, anytime is growing. The exponential increase of video services translates to rising expenses for purchasing more satellite, cellular or other dedicated network bandwidth. MGW Ace Encoder's cutting edge HEVC compression and streaming capabilities allows broadcasters, A/V teams, corporate IT as well as military forces and government agencies to reduce Operating Expenses (OPEX) for video streaming projects while managing demand for more video services and requests for higher quality video on existing bandwidth capability.

Flexible Connectivity Options with H.264 Backward Compatibility

Integrating with any video environment - the MGW Ace Encoder offers the largest selection of input types in the industry including 3G, HD-SDI, SD-SDI, DVI, HDMI and Composite video as well as analog and digital audio (embedded and discrete). A built-in video matrix enables routing of video sources to both the HEVC and H.264 compression cores for generating streams in both H.265 and H.264 formats. The on-board hardware scaler can be used for real-time downscaling, frame-sampling and flexible cropping options delivering the most optimized video output for your application.

KLV / STANAG Metadata Ingest for Intelligence, Surveillance and Reconnaissance (ISR) Applications

VITEC's MGW Ace Encoder is the world's first all-hardware HEVC ISR encoding system ingesting tactical video, aircraft and sensor metadata to create a network-efficient HEVC MISB-Compliant IP stream. The industrial-grade design combined with the low-power consumption allows high quality Full Motion Video streams to be delivered from the field through the most constrained network links. The secondary H.264 compression core allows government and military forces to deploy the next-generation ISR encoding solution while continuing to support legacy end-points and older IPTV receive suites.

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The Most Complete HEVC Offering for IPTV and Situational Awareness Video

MGW Ace Encoder can be used as stand-alone or integrated seamlessly into a Turn-Key HEVC solution. VITEC's comprehensive HEVC product offering includes encoders and streaming appliances, IPTV decoding appliances, video portal for distribution, archiving and playback, desktop and mobile video players in addition to PCI cards with SDK for integration projects. Take advantage of the revolutionary compression technology for deploying bandwidth-efficient video solutions that dramatically reduce bandwidth costs, extend high quality video reach to disadvantaged users and allow more content to be streamed on existing network capacity.

Increase Picture Quality and Details Using the Same Bandwidth



H.264 / AVC - 1080p @ 1.5Mbps



H.265 / HEVC - 1080p @ 1.5Mbps

Maintain the Same Video Quality Using 50% Less Bandwidth



H.264 / AVC - 1080p @ 6Mbps



H.265 / HEVC - 1080p @ 3Mbps

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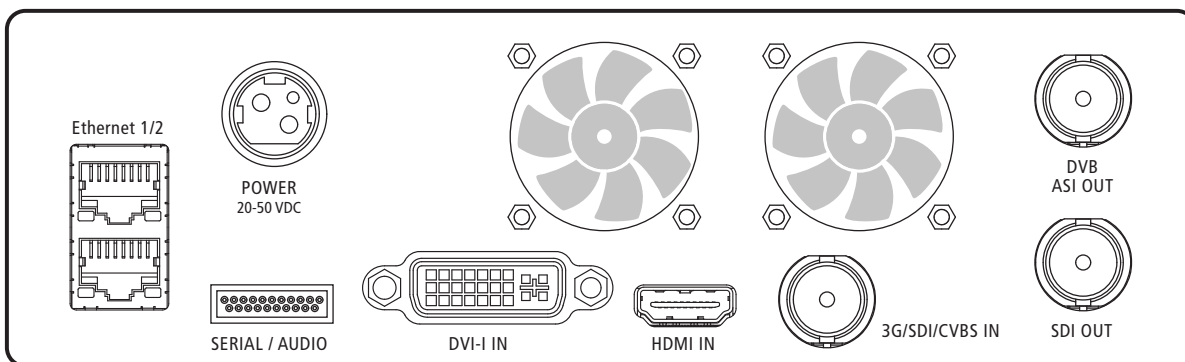
Applications

- Satellite News Gathering and Field Broadcasting
- Streaming Situational Awareness and FMV content across LANs and WANs
- Point-to-Point video contribution with low delay
- Intelligence, Surveillance and Reconnaissance (ISR) video from ground and airborne vehicles
- Full HD 1080p monitoring and Command and Control
- Encoding and multicasting High-Res HDMI / DVI / Computer sources
- Sharing PC Screen views over IP with local and remote users
- Streaming Full Motion Video to Desktop, TV and Mobile Devices over bandwidth-limited pipes

Benefits

- Next-generation HEVC / H.265 compression reduces network bandwidth by up to 50% compared to H.264
- Reduces costs associated with dedicated Satellite, Cellular, Broadband network pipes
- Transport infrastructure agnostic: Satellite, xDSL, LANs, WANs, 3G/4G/LTE and FTTx
- Portable, low-power hardware design – optimized for field use and for vehicles (28VDC power input)
- Supports both HEVC and H.264 – built for the future without losing support for legacy receivers/decoders
- KLV / STANAG metadata ingest and multiplexing – JITC-Compliant

Rear panel



* Ethernet #2, DVB output and SDI output ports will be activated via firmware update

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Video Inputs

- 1 x 3G/HD-SDI/SD-SDI/Composite CVBS (SMPTE 259M-C, SMPTE 292M, SMPTE 274M, SMPTE 296M, SMPTE 424M, SMPTE 425M)
- 1 x HDMI v1.3 (support for HDCP and non-HDCP protected sources)
- 1 x DVI-I (analog & digital)

Input Resolutions / frame rates:

- 1920x1080p @ 85, 75, 60, 59.94, 50, 30, 29.97, 25, 23.976 Hz
- 1920x1080i @ 60, 59.94, 50 Hz
- 1600x1200p @ 85, 60, 50 Hz
- 1400x1050p @ 60 Hz
- 1400x900p @ 60, 50 Hz
- 1366x768p @ 60, 50 Hz
- 1280x800p @ 60, 50 Hz
- 1280x1024p @ 60, 50 Hz
- 1280x768p @ 60, 50 Hz
- 1024x768p @ 60, 50 Hz
- 1280x720p @ 60, 59.94, 50, 30, 29.97, 25 Hz
- 800x600p @ 60, 50 Hz
- 720x480p @ 59.94 Hz
- 720x480i @ 59.94 Hz
- 720x576p @ 50 Hz
- 720x576i @ 50 Hz

Audio Inputs

- 1 x SDI Embedded audio
- 1 x HDMI Embedded audio
- 1 x Analog unbalanced stereo audio, AC-coupled (RCA Female)
- 1 x Balanced analog stereo audio (XLR)

Video Output - HEVC (H.265)

- MPEG-H HEVC (ISO/IEC 23008-2)
Modes:
 - o Main Profile Level 4.1 (4:2:0 8-bits)
 - o Main 4:2:2 Profile Level 4.1 (4:2:0 and 4:2:2 8-bits)
- Bit Rate: 100 Kbps - 30Mbps
- Frame Rate: 10-60 fps. Down sampling modes: quarter, third, half, three quarters
- Bit Rate Regulation Modes: Constant (CBR), Variable (VBR)
- Output Resolutions: Configurable from CIF up to 1920x1080
- Encoding Latency: 75 Milliseconds

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Video Output - MPEG-4 AVC/H.264

- MPEG-4 AVC/H.264 (ISO/IEC 14496-10 MPEG-4 AVC – Rec. ITU-T H.264)
- Modes:
 - o Baseline Profile L3
 - o Main Profile L3 and L4
 - o High Profile L4 and L4.2
- Bit Rate: 100 Kbps - 14 Mbps
- Frame Rate: 5-60 fps. Down sampling modes: fifth, quarter, third, half, three quarters
- Bit Rate Regulation Modes: Constant (CBR), Variable (VBR)
- Output Resolutions: Configurable from CIF up to 1920x1080
- Encoding Latency: 65 milliseconds (TurboVideo™ mode)

Audio Output

- MPEG-4 AAC-LC (ISO/IEC 14496-3), MPEG-1 L2
- Stereo and mono modes
- Bit Rate: 32Kbps - 256Kbps in Stereo, 16Kbps - 128Kbps in Mono
- Sampling Rate: 16 kHz - 48 kHz

Network Protocols

- Output Streams:
 - o UDP TS
 - o RTP TS
 - o RTSP
 - o RTP TS with ProMPEG forward Error Correction (SMPTE 2022)
- Peripheral:
 - o HTTPS, NTP, SSH, SAP

Management

- Secure Web based remote management interface (HTTPS)
- Dashboard with dynamically updating I/O signal detection and streaming stats
- SSH interface with "get/set" or XML API for integration with 3rd party control software
- Autostart mode recovers saved configuration after power cycle
- Remote firmware and software upgrade capability via browser and command line
- System and channel event logging
- Hardware push-button for restoring unit to factory settings

Security

- Real-time AES encryption for video, audio and metadata. Interoperability with EZ TV and FITIS systems
- Password-protected HTTPS and CLI control interfaces

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Metadata

- CoT over serial RS-232, KLV over IP, KLV over SDI (VANC per SMPTE 336M)
- UAS Datalink Local Metadata Set (MISB STD 0601.5, STD 0902)
- Time Stamping and Transport of Compressed Motion Imagery and Metadata (MISB STD 0604.2)
- Cursor on Target (CoT) Conversions to Key-Length-Value (KLV) Metadata (MISB EG 0805)
- Security Metadata Universal and Local Sets for Digital Motion Imagery (MISB STD 0102.8)
- STANAG 4609 output stream over UDP/IP

Environmental

- Operating Temperatures: -20° C to +50° C (-4° F to 122° F)
- Relative Humidity: 5% to 95% (non-condensing)
- EMC Standards: FCC part 15 class B and CE
- Designed to meet MIL-STD-810 and MIL STD-461 Criteria
- Power: 28VDC, 45W Max
- MTBF: Ground - 3.70 years. Airborne - 7.3 years (As per MIL-HDBK-217F)

Physical

- Dimensions: 2.55" H x 7.71" W x 7.83" D (65mm H x 196mm W x 199mm D)
- Weight: 4.85lb (2.2Kg)
- Enclosure: Industrial-grade
- Status LED's for power, network activity, Temperature and Fan Errors, streaming and video source indications
- Mounting holes for seamless installation in vehicles / onto flat surfaces

Advanced Features

- Encode and stream single source in multiple formats (HEVC and H.264) to one or more destinations
- Hardware based resolution and frame rate scaling
- Motion-adaptive adjustment of bit-rate utilization during static scenes
- ProMPEG Forward Error Correction
- Automatically adjust encoding format when input source changes while streaming

Ordering Information

14846 MGW Ace Encoder HD/SD

* Certain capabilities only apply to one of the compression formats