



MGW Ace Decoder

Professional Portable HEVC & H.264 Decoder



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MGW Ace Decoder is a professional grade, high performance IP decoding appliance supporting the latest bandwidth efficient HEVC/H.265 and legacy H.264/AVC compression standards.

For point-to-point application, paired with VITEC MGW Ace Encoder, the solution delivers an impressive and unprecedented 16ms glass-to-glass latency in HEVC 4:2:2 10-bit for flawless Remote Production application. Additionally, the bandwidth efficient HEVC codec and built-in error correction technologies deliver an optimal quality of service for contribution application on any network including the Internet.

MGW Ace Decoder is available either as a portable appliance featuring a robust enclosure perfectly suited for field use or as an openGear card for easy integration within production studios and broadcast facilities. Both product versions provide best-in-class video quality over a rich and industry-standard audio/video connectivity.

Compact, Professional Grade Appliance for Low Latency Broadcast Decoding

MGW Ace Decoder is a single channel HEVC & H.264 decoder with easy setup delivering fast operation in the field via its intuitive web interface. Designed in a robust aluminum enclosure, it delivers reliable and broadcast quality decoding of HEVC or H.264 streams up to 1080p60 4:2:2 10 bits (respectively Main422 10P@4.1 and Hi10@L4.2). As latency is key in any IPTV application, MGW Ace Decoder minimizes the decoding process cycle without compromising video quality.

Best-in-Class Video Quality and Versatile Connectivity

MGW Ace Decoder provides pristine video quality and versatility with its high quality video scaling, frame sampling and de-interlacing for any stream to any output resolutions/framerate. The appliance offers a large panel of video connectivity with 12G-SDI, HDMI2.0, SD-SDI and composite outputs which can be activated simultaneously. To cover any broadcast setup, MGW Ace Decoder features a genlock reference input. It delivers audio as embedded in SDI/HDMI as well as separate over analog balanced or unbalanced stereo audio and digital AES outputs. IP feeds can be received from two ethernet ports to match any network topology (each port is configurable as management and/or streaming ports) or from the DVB-ASI input.

Optimal Quality of Service

Covering an event or for sensitive applications, MGW Ace Decoder is designed to always provide the best possible viewing experience and never miss a single frame. Shipping with Zixi™ forward error technology, the appliance protects video, audio and metadata on networks with up to 30% packet loss or data corruption. For point-to-point application, paired with MGW Ace Encoder, the pair provides a bandwidth efficient artifacts-free video streaming solutions over any network including the Internet. With its stream forwarding feature, MGW Ace Decoder is able to decode the HEVC or H.264 stream over its baseband video outputs while delivering the stream for IPTV distribution within a private LAN/WAN network. Additionally, MGW Ace Decoder provides industry standard SMPTE 2022 ProMPEG error correction technology for compatibility with other encoders.

Future-Proof Solution

The video industry is moving fast, providing continuous quality improvement and larger resolution for the best viewing experience. With its unique flexible FPGA architecture, MGW Ace Decoder is a future proof solution and ensures staying ahead of the game. VITEC will deliver software options to support up to 4K60p 4:2:2 10 bits HEVC streams (Main422 10P@L5.1).

Get the Best of Your Team in the Field

In broadcast / DSNG applications, cellular phones are widely used to connect with teams and operators. This communication is outdated and does not benefit from the powerful hardware deployed in the field. With MGW Ace Decoder, IFB/Talkback feature provides an easy communication path between remote teams.



Applications

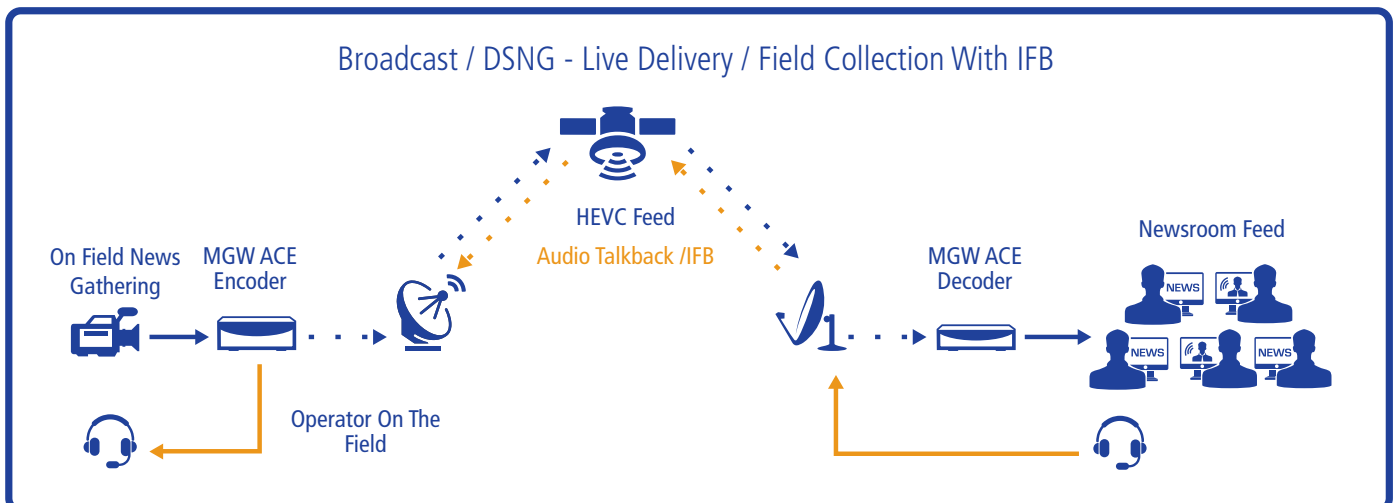
- DSNG contribution decode over satellite, cellular networks and more
- Remote / At Home production (REMI) over dedicated transmission links or the Internet
- Point-to-Point live contribution on private or public networks
- Low Latency Point-to-Point contribution over the Internet using Zixi or ProMPEG
- Situational Awareness and Full Motion Video (FMV) display on video walls and monitors
- HEVC and H.264 IP feed monitoring over SDI / HDMI or Composite

Benefits

- HEVC and H.264 decoding of HD/SD IP streams with optimal latency
- Broadcast quality decoding up to 4:2:2, 10 bits, 50Mbits
- Up to 2 pairs of audio decoding (x8 pairs in the roadmap)
- Rich, Industry standard video and audio output interfaces to match any setup
- Intuitive web interface for monitoring and control
- Time-synchronized playback across several decoders
- Audio Talkback/IFB for easy communication between teams
- Future-proof design with 4K decoding in the roadmap
- Compact portable design with 19" 1RU rack mount kit option

Diagrams

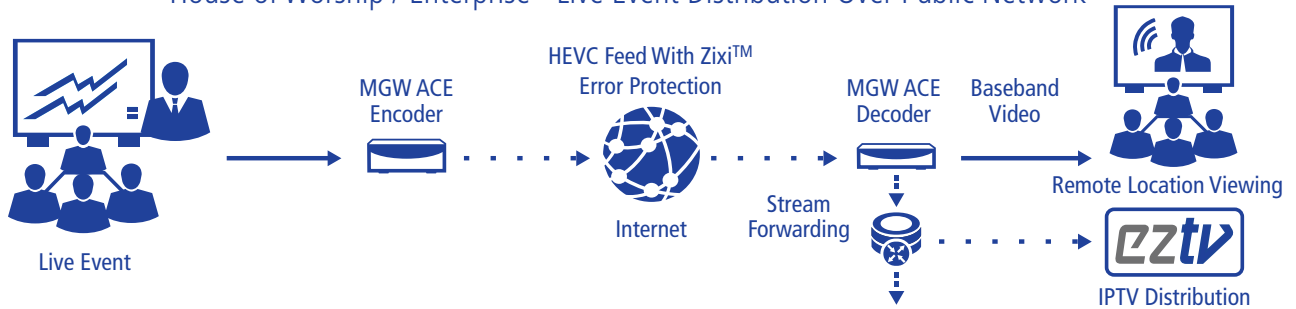
Point-to-Point Use Case



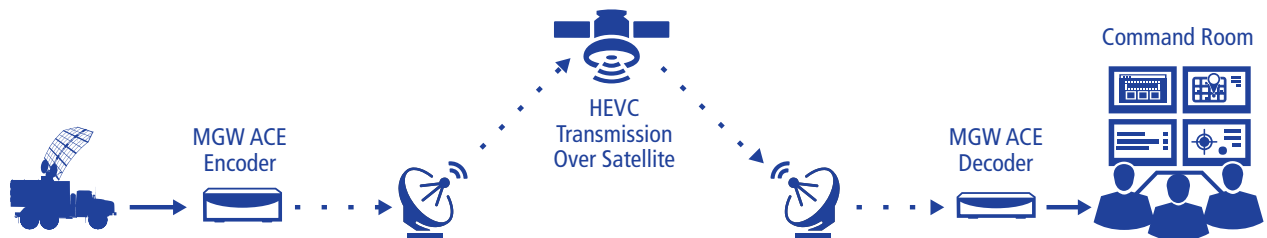
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Professional Portable HEVC Decoder

House of Worship / Enterprise - Live Event Distribution Over Public Network

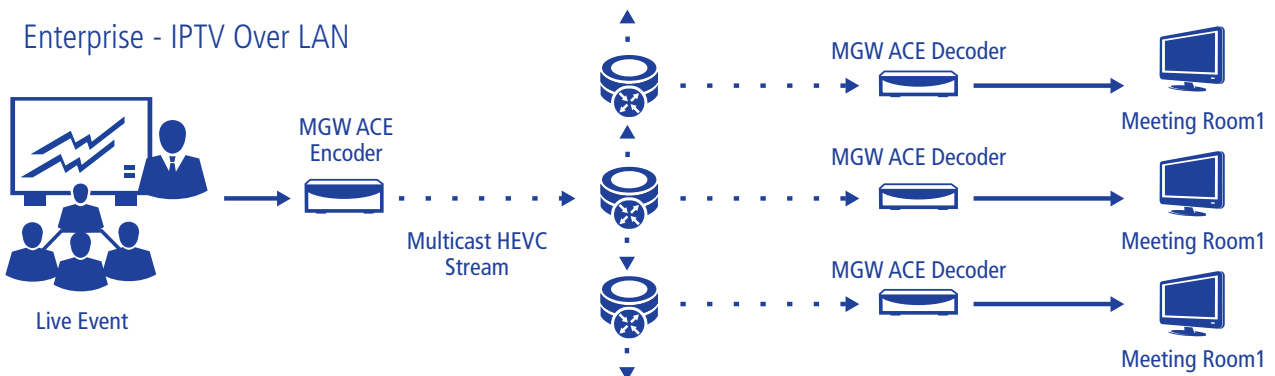


Military - Mission Critical



Point-to-Multipoint Use Case

Enterprise - IPTV Over LAN





Technical Specifications

Stream Input Support

Video Decoder - HEVC & H.264

- MPEG-H HEVC (ISO/IEC 23008-2)
 - Profile/Level: up to Main422 10@L4.1 High Tier
 - Ultra Low Latency Mode (Licensed)
 - Color sampling / Bit-depth: up to 4:2:2 / 10 bits
 - Bit Rate: up to 50Mbps
 - Frame Rate: 1-60 fps.
 - Input Resolutions: from CIF up to 1920x1080
- MPEG-4 AVC/H.264 (ISO/IEC 14496-10 MPEG-4 AVC - Rec. ITU-T H.264)
 - Profile/Level: up to Hi10@L4.2
 - Color sampling / Bit-depth: up to 4:2:2 / 10 bits
 - Bit Rate: up to 100Mbps
 - Frame Rate: 1-60 fps.
 - Input Resolutions: from CIF up to 1920x1080

Audio Decoder

- Up to x4 audio channels (x16 channels in the roadmap)
- MPEG-4 AAC-LC (ISO/IEC 14496-3) and AAC-ELD Decode
 - Sample Rate: 48kHz
 - Bit Rate: 16-192kbs
- Dolby Digital / AC-3 Passthrough

Network Protocols

- UDP TS: MPEG Transport Stream over UDP
- RTP TS: MPEG Transport Stream over RTP
- RTP ES (RTSP): Elementary stream over RTP
- Zixi™ Stream protection
 - Zixi P2P and Broadcaster modes
 - Zixi ABR streaming (Adaptive Bitrate)
- RTP TS with ProMPEG Forward Error Correction (SMPTE 2022)
- SRT (Caller, Listener and RendezVous)
- HTTPS, NTP, SSH, SAP

Security

- Real-time AES decryption for video, audio and metadata
- 128 and 256 bit encryption key support

Network Interfaces

- 2x Gigabit Ethernet ports for management and/or streaming
- DVB-ASI Input with loop through (SPTS / MPTS support)

Video Outputs

- 2 x 3G/HD-SDI/SD-SDI (SMPTE 259M-C, SMPTE 292M, SMPTE 274M, SMPTE 296M, SMPTE 424M, SMPTE 425M-A)
(12G-SDI activated by firmware update and license option)
- 1 x HDMI 2.0
- 1x Composite (CVBS)

Output Resolutions / Frame Rates

- 1920x1080p @ 60, 59.94, 50, 30, 29.97, 25, 24, 23.976
- 1920x1080i @ 60, 59.94, 50 Hz
- 1280x720p @ 60, 59.94, 50, 30, 29.97, 25
- 720x480i @ 59.94 Hz (NTSC)
- 720x576i @ 50 Hz (PAL)

Audio Outputs (Rear Panel)

- SDI Embedded audio (PCM support)
- HDMI Embedded audio (PCM support)
- 2x AES3 Digital Audio (BNC Female)
- 1 x Analog unbalanced stereo audio, AC-coupled (RCA Female)
- 1 x Balanced analog stereo audio (XLR Male)

Ancillary Data Support

- Closed captions : CEA-708 / CEA-608
- Transport:
 - ANSI/SCTE 128, ATSC A/72 [CC & AFD in H.264/HEVC user data]
 - SMPTE RDD11 [Ancillary data in TS stream]
- AFD (SMPTE 2016)
- Timecode (SMPTE12M-2)

Talkback Audio

- Input : 1 x Analog unbalanced stereo audio, AC-coupled (Mini Jack)
- Output 1 x Analog unbalanced stereo audio, AC-coupled (Mini Jack)

Management

- Secure Web based remote management interface (HTTPS), password protected
- Custom SSL certificate loading capability
- Customizable Notice and Consent login banner
- Dashboard with detected channel characteristics description and active outputs
- Streaming statistics for easier configuration and enhanced Quality of Service
- Autostart mode recovers saved configuration after power cycle
- Remote firmware and software upgrade capability via browser and command line
- Easy to use HTTPS Rest API for control and status monitoring from 3rd party control software
- Status LED's for power, network activity, error and streaming indications
- Recovery or initialization of Ethernet settings over USB thumb drive
- System Discovery to retrieve MGW Ace Encoder IP address on a network

Compliance

- FCC Part 15, Class A
- CE
- ICES-003
- RoHS

Environmental / Regulation

- Operating Temperatures: 0 °C to +50 °C (-4 °F to 122 °F)
- Relative Humidity: 5% to 95% (non-condensing)
- Power input (MGW Ace Decoder): 20-50VDC
- Power consumption (Typical): 22W
- Not controlled under ITAR
- TAA Compliant

Physical

- MGW Ace Decoder
 - o Dimensions: 1.65" H x 7.95" W x 4.60" D (42.4 mm H x 202 mm W x 117.5 mm D)
 - o Weight: 2.40lb (1.1kg)
 - o Enclosure: Industrial-grade, Aluminum case with mounting holes for seamless installation
 - o Optional rack-mount kit for standard 1RU 19" wide racks
- MGW Ace Decoder OG
 - o Compatible with OGX and OG3 openGear frames
 - o Full Rear I/O Module (2 slots) for up to 10 cards within a 2RU openGear chassis

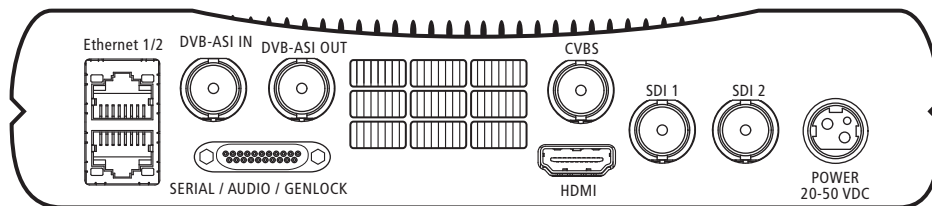
Advanced Features

- Any feed resolution/frame rate to any output resolution frame
- Simultaneous HD and SD video outputs respectively over SDI/HDMI and SD-SDI/Composite
- Time-synchronized playback: synchronize the playback of multiple independent streams across several MGW Ace Decoder
- Stream forwarding feature: Decode Zixi / Pro-MPEG / UDP TS or DVB-ASI stream (HEVC or H.264) over baseband video while forwarding the stream for IPTV distribution
- Talkback feature for audio feedback (two-way communication between the encoder and the decoder)

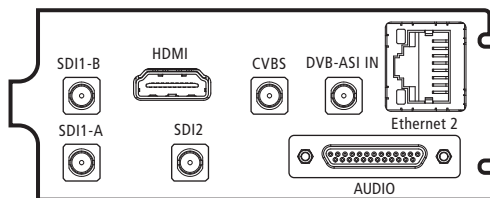
Ordering information

- 16647 → MGW Ace Decoder HD/SD (Breakout cable included)
- 17597 → MGW Ace Decoder OG (Main and Rear I/O modules)
- 16732 → MGW Ace Decoder Breakout cable

Rear Panel Interfaces



MGW Ace Decoder



MGW Ace Decoder OG

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