# MGW Pico Encoder

## Ultra-Compact HD/SD H.264 Encoder

MGW Pico Encoder is the world's smallest H.264 HD/SD portable encoding appliance. With 3G/HD/SD-SDI and Composite inputs, low power consumption and robust industrial design, the appliance is ideal for field-based applications. MGW Pico Encoder provides two simultaneous H.264 encoding channels (HD+SD) and features error-free content delivery on private and public networks using Zixi™ stream protection or industry standard SMPTE 2022 Pro-MPEG error correction technology.

For sensitive applications, MGW Pico Encoder supports dual KLV metadata ingest and transport in compliance with STANAG 4609 and MISB standards.

## Technical Specification

### Video Inputs
- 1 x 3G/HD/SD-SDI: SMPTE 259M-C, SMPTE 292M, SMPTE 274M, SMPTE 296M, SMPTE 424M, SMPTE 425M Level A (BNC, 75 Ohm)
- 1 x Analogue Composite: PAL/NTSC (BNC, 75 Ohm)

### Input Resolutions/frame rates
- 1920x1080p @ 60, 59.94, 50, 30, 29.97, 25, 24 Hz
- 1920x1080i @ 60, 59.94, 50 Hz
- 1280x720p @ 60, 59.94, 50, 30, 29.97, 25 Hz
- 720x480i @ 59.94 Hz
- 720x576i @ 50 Hz

### Audio Inputs
- 1 x SDI Embedded audio (Stereo or Mono)
- 1 x Analogue unbalanced audio (via breakout cable)

### Video Output
- H.264 (ISO\IEC 14496-10 AVC MPEG-4 part 10). Modes:
  - Baseline Profile L3
  - Main Profile L3 and L4
  - High Profile L4 and L4.1
- Bit Rate: 100 Kbps - 15 Mbps
- Frame Rate: 5-60 fps.
  Down sampling modes: 3/4, 2/3, 1/2, 1/3, 1/4
- Bit Rate Regulation Modes: Constant (CBR), Variable (VBR)
- Output Resolutions: Configurable from QCIF up to 1920x1080p30/1280x720p60
- Encoding Latency: 65 milliseconds

## Features & Benefits

- World's smallest professional HD H.264 encoder with 3G/HD/SD-SDI and Composite inputs

- Superb HD and SD H.264 AVC compression quality up to full HD 1080p

- Up to 2 simultaneous H.264 encoding channels

- Zixi Error Correction and Pro-MPEG FEC built-in for reliable stream transmission

- Less than 65 millisecond encoding latency

- Full-frame snapshots stored in internal memory or delivered over IP to remote location

- Metadata support: MISB KLV/STANAG and CoT (SDI, IP and Serial)

- Under 6 Watts power consumption is ideal for vehicle integration or for use with battery packs

- Industrial-grade, fanless design with no moving parts, 100% silent

## Audio Output
- MPEG-4 AAC-LC (ISO/IEC 14496-3)
- Stereo and mono modes
- Bit Rate: 32Kbps - 192Kbps in Stereo, 16Kbps - 192Kbps in Mono
- Sampling Rate: 48 kHz

## Network Protocols
- Streaming:
  - UDP TS
  - RTP TS
  - RTP ES (RTSP)
  - Unicast and Multicast modes
- Error Correction:
  - Zixi™ technology for up to 30% packet loss recovery
  - RTP TS with Forward-Error-Correction (FEC SMPTE 2022)
- Peripheral:
  - 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
- System and channel event logging

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

## Metadata
- Up to 2 simultaneous KLV metadata stream per channel
- Support for KLV over IP, Serial and SDI (MISB STD 0605.7, VANC per SMPTE 336M)
- Support for CoT over Serial/RS-232
- Absolute Time System and Timestamps (MISB STD 0603.4)
- Time Stamping and Transport of Compressed Motion Imagery and Metadata (MISB STD 0604.5)
- Security Metadata Universal and Local Sets for Digital Motion Imagery (MISB STD 0102.11)
- Cursor on Target (CoT) Conversions to Key-Length-Value (KLV) Metadata (MISB STD 0805.1)
- UAS Datalink Local Metadata Set (MISB STD 0601.11, STD 0902.6)
- STANAG 4609 output stream over UDP/IP
- JITC-MIS Compliant streaming of HD/SD ISR video

## Environmental/Regulation
- Operating temperatures:
  - -40º C to +50º C (-40º F to +122 F) encoder unit
  - 0º C to +40º C (32º F to +104º F) with supplied external power supply
- Relative Humidity:
  - 5% to 95% (non-condensing) encoder unit
  - 10% to 90% (non-condensing) with supplied external power supply
- EMC Standards: FCC part 15 class A and CE
- Power: 12VDC, 6W Max
- MTBF: Ground – 9.00 years. Airborne – 12.70 years. Naval Sheltered 10.30 years. (As per MIL-HDBK-217F)
- Not controlled under ITAR
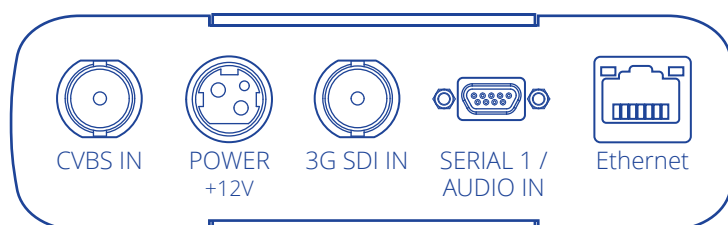- TAA-compliant

## Physical
- 1.02" H x 4.33" W x 2.91" D (26mm H x 110mm W x 74mm D)
- 0.55lb (0.25Kg)
- Enclosure: Industrial-grade rugged case, rack-mount kit available as add-on
- Status LEDs for power, network activity, streaming and video source indications
- Fan-less, no moving parts design, 100% silent operation
- Mounting holes for seamless installation in vehicles/on flat surface

## Advanced Features
- Low latency HD streaming from SDI and Composite sources with audio and metadata
- Hardware-based resolution and frame rate scaling
- Zixi™ stream protection for reliable transmission of video, audio and metadata over lossy network links
- Full frame Snapshot capture in RAW, JPEG or JPEG-LS format stored in internal memory or transferred via IP to a remote location
- Stream Preview through the web interface
- Ultra low power consumption for 1080p streaming - under 6W

## Rear Panel Interfaces



CVBS IN | POWER +12V | 3G SDI IN | SERIAL 1 / AUDIO IN | Ethernet

## Ordering Information

| Part Number | Description | Features | | |
| --- | --- | --- | --- | --- |
| | | Encoding Resolution | Stream Protection | KLV |
| 17366 | MGW Pico Connect | HD | | |
| 16788 | MGW Pico ISR | HD | ✓ | ✓ |

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