



MGW Nano TOUGH

Rugged HD H.264 Encoder



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Rugged, MIL-STD certified H.264 HD/SD Encoder featuring low latency video streaming, metadata processing and hardware-based motion stabilization. Fanless, 100% silent and light weight enclosure designed for extreme conditions

Technical Specifications - General

Video Inputs

- 1 x HD-SDI/SD-SDI (SMPTE 259M-C, SMPTE 292M, SMPTE 274M, SMPTE 296M, SMPTE 424M, SMPTE 425M)
- 1 x HDMI (support for HDCP and non-HDCP protected sources), MIL-DTL-38999 Circular connector
- 1 x Analog Composite RS-170 (BNC, 75 Ohm. Optional)

Input Resolutions / frame rates:

1920x1080p @ 60, 59.94, 50, 30, 29.97, 25, 24 Hz

1920x1080i @ 60, 59.94, 50 Hz

1600x1200p @ 85, 60, 50 Hz

1366x768p @ 60, 50 Hz

1280x800p @ 60, 50 Hz

1280x768p @ 60, 50 Hz

1024x768p @ 60, 50 Hz

1280x720p @ 60, 59.94, 50, 30, 29.97, 25 Hz

720x480p @ 30, 29.97 Hz

720x480i @ 59.94 Hz

720x576p @ 25 Hz

720x576i @ 50 Hz

Audio Inputs

- 1 x SDI Embedded audio (Stereo and Mono)
- 1 x HDMI Embedded audio (Stereo and Mono)

Video Output

- H.264 (ISO/IEC 14496-10 AVC MPEG-4 part 10). Modes:
 - o Baseline Profile L3
 - o Main Profile L3 and L4
 - o High Profile L4 and L4.1
- Bit Rate: 100 Kbps - 14 Mbps
- Frame Rate: 5-60 fps. Down sampling modes: third, half, three quarters
- Bit Rate Regulation Modes: Constant (CBR), Variable (VBR)
- Output Resolutions: Configurable from QCIF up to 1920x1080p30 / 1280x720p60
- 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

- Streaming:
 - UDP, RTSP, SAP, MPEG-2 Transport encapsulation, unicast and multicast modes
- Peripheral:
 - HTTPS, DHCP, NTP, SSH, SAP

Management

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

Security

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

Metadata

- CoT over serial RS-232, KLV over serial/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: -40° C to +70° C (-40° F to +158° F)
- Relative Humidity: 5% to 95% (non-condensing)
- MIL-STD810F Certified
- MIL-STD461F Certified
- MTBF: Ground – 9.00 years. Airborne – 12.70 years (As per MIL-HDBK-217F)

Physical

- 1.46" H x 5.59" W x 5.51" D (37.2mm H x 142mm W x 140mm D)
- 1.85lb (0.84Kg)
- Enclosure: Military-grade rugged aluminum case, composite MIL connectors
- Status LED's 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 / flat surface

Advanced Features

- Low latency HD/SD streaming from SDI or HDMI sources with metadata
- Hardware based resolution and frame rate scaling
- Real-time image stabilization chip optimized for footage from ground and airborne vehicles
- Motion-adaptive adjustment of bit-rate utilization in static scenes
- PID re-mapping for audio and video and KLV programs

Power

- DC Input: 24-48VDC, Max 10W
- MIL-STD 38999 series III Circular Connector
- MIL-STD704

Ordering Information

AMP1120 - 14696 → MGW Nano TOUGH HD/SD

Rear Panel Interfaces



- 1 Ethernet + HW Reset
- 2 Power 24-48VDC MIL-STD704
- 3 Serial RS-232 Tx/Rx + Analog Audio
- 4 3G / HD/SD-SDI / Composite Video Input
- 5 HDMI Video/Audio Input

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