

# HERO INTELLIGENCE

**ME**  
**MEDIA EXCEL**  
EXCELLENCE IN TRANSCODING

INTELLIGENCE, SURVEILLANCE  
& RECONNAISSANCE  
HEVC/AVC ENCODER

**HEVC**  
H.265 - HIGH EFFICIENCY VIDEO CODING

Media Excel's portable HERO Intelligence Encoder (HERO IE) is a multi-channel, multi-format, encoding solution designed for remote location, high quality and mission critical Intelligence, Surveillance & Reconnaissance HEVC/AVC encoding applications.

## APPLICATIONS

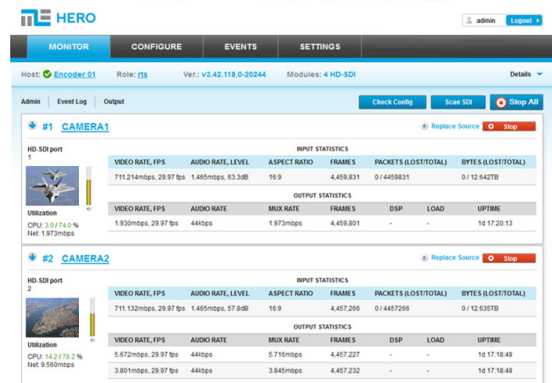
- INTELLIGENCE
- SURVEILLANCE
- RECONNAISSANCE
- MEDICAL
- REGIONAL CONTRIBUTION
- CONTENT AGGREGATION

## RELATED PRODUCTS

- **HERO 5000IE INTELLIGENCE ENCODER**  
Intelligence, Surveillance & Reconnaissance HEVC/AVC encoder.
- **HERO 5000L LIVE ENCODER/TRANSCODER**  
Multiscreen Encoder/Transcoder for Live.
- **HERO 5000C CLOUD TRANSCODER**  
HERO virtualized software running on your hardware for Live and VoD cloud transcoding services.
- **HERO MANAGEMENT**  
Centralized network management solution.

## KEY FEATURES

- HEVC & AVC encoding up to 1080p
- Superior video quality and compression efficiency
- Proven & reliable multi-channel, multi-rate solution
- Compact/portable form factor with redundant PSU
- Uncompressed and compressed inputs
- 2 HD HEVC Channels per 1RU platform
- Local & remote monitoring and control
- JITC MISP Lab certified for:
  - MISP Version 5.5, up to MISM Level 14
  - up to 1080p H.264 High Profile
  - Asynchronous & synchronous metadata



## HERO INTELLIGENCE ENCODER

For those special operations that require pushing out live content to multiple devices and formats, look to an encoding platform with the pedigree to handle multiple sensor feeds with pristine quality and real-time video performance. With its **HD HEVC AND AVC ENCODING CAPABILITIES**, HERO IE is the best platform to handle the challenges of remote ISR/ISTAR live encoding applications. It has all the high-end features and comprehensive workflow necessary to get the live signal from the sensor output to local and global ISR teams on any device and any format using the **MOST EFFICIENT COMPRESSION STANDARD FOR YOUR EXISTING TRANSPORT PIPELINES**. HERO IE leverages Media Excel's 15 years of leadership in encoding/decoding technologies for high-end defense and civilian deployments worldwide.

With its exceptional quality and proven reliability, HERO IE is the perfect solution for:

- Single or multiscreen field-operation content encoding
- Delivery of high quality video, with lowest latency and superior bandwidth efficiency anywhere you need
- H.265/HEVC & H.264/AVC video delivery applications for Department of Defense (DoD), Homeland Security, Law Enforcement & National Infrastructure Agencies

# HERO INTELLIGENCE TECHNICAL SPECIFICATIONS

## INPUT

### PORTS

- HD/SD-SDI (up to 8 ports) \*
- Gigabit ethernet (up to 6 ports)

### FORMATS

- Uncompressed digital audio/video
- MPEG-2 TS via DVB-ASI or RTP/UDP \*
- MPEG-2 TS FEC ProMPEG (SMPTE 2022) \*
- RTMP \*
- HLS \*
- Virtual Playback: 3GP, AVI, DNxHD, DVCPro, FLV/F4V, IMX, MFX, MJPEG, MOV, MP4, ProRes, TS, WMV, XDCAM, JPEG, PNG \*

### AUDIO/VIDEO CODECS

- H.264/AVC
- MPEG-2 (4:2:2, 4:2:0)
- H.263, MPEG-4
- PCM
- MPEG-1 Audio Layers I, II & III
- AAC/AAC-HE (MPEG-2, MPEG-4)
- AC-3 (DD), E-AC-3 (DD+)

## OUTPUT

### STREAMS

- Apple HTTP Adaptive (HLS)
- Adobe RTMP
- Microsoft Smooth Streaming
- MPEG-DASH
- MPEG-2 TS
- RTP/RTSP ISMA, 3GPP, 3GPPr6 multi-rate

### NETWORK

- ATSC, ARIB
- DVB-ASI
- DVB-S/T
- LTE/eMBMS \*
- SNMP v.2
- IGMP v.3, SSM

### CODECS/FORMATS

- H.264/AVC BL/MP/HP
- DV recording
- MPEG-2
- AAC/AAC-HE, v.1 & 2
- Dolby E/AC3/AC3+ (Pass-through)
- MPEG-1 Audio Layers I & II
- 3GP2, 3GPP (.3GP) with SAP/SDP
- MPEG-2 TS/PS Unicast and Multicast
- TS, MP4 segmentation and recording
- JPEG periodic thumbnail generation

### FORMATS

- Progressive and interlaced output
- 1080, 720, 540, PAL, NTSC, etc
- Custom resolutions down to QCIF

### AUXILIARY DATA

- Line 21, CEA 608/708 closed captions
- OP-47, DVB-Teletext subtitles
- WebVTT, TTML, DFXP, ISMT subtitles
- Multiple audio tracks/languages
- MIPs KLV metadata sync/async

## SYSTEM CONFIGURATION TABLE

HERO MODEL	CHANNELS	ENCODING	A/V INPUT
HIE.5001.E	1	AVC up to 1080p	TS/UDP over GigE
HIE.5002.E	2		
HIE.5004.E	4		
HIE.5008.E	8		
HIE.5001.SE	1	AVC up to 1080p	SDI HD/SD TS/UDP over GigE
HIE.5002.SE	2		
HIE.5004.SE	4		
HIE.5008.SE	8		
HIE.5001.E.H	1		
HIE.5002.E.H	2	AVC up to 1080p HEVC up to 720p	
HIE.5001.SE.H	1	AVC up to 1080p HEVC up to 1080p	SDI HD/SD TS/UDP over GigE
HIE.5002.SE.H	2		

- \* Option available in specific models only.  
- Specifications subject to change without notice.

## ENCODING & TRANSCODING FEATURES

### PRE-PROCESSING

- Automatic & manual Program selection
- Aspect ratio detection (AFD, V-Index, WSS)
- VBI black-out control
- Contrast/Brightness/Gamma control
- Audio gain control
- Error concealment logic
- De-blocking & noise reduction filters
- Content adaptive de-interlacing
- Frame scaling with anti-aliasing options
- Smoothness/Sharpness control
- Cropping per output
- Graphic overlay (4 layers with alpha color)
- Virtual playlist/playlist support (file & live)
- Timecode burn-in
- EIA 608/708, OP-47, DVB-Sub burn-in

### VIDEO

- Frame rates (Hz): 1 – 60
- Rate control: CBR, VBR, ABR
- Statistical rate control
- Progressive and interlaced encoding
- High quality frame rate conversion
- Low latency mode

### AUDIO

- Audio-only/radio processing option
- Pass-through option
- Re-sampling, down-mix processing
- Multiple audio tracks/languages
- Dynamic audio normalization
- Loudness management

### POST-PROCESSING

- Adaptive/multi-rate output
- NTP-synced, GOP-aligned outputs
- Multiple audio tracks/languages output
- Multiple publishing points for redundancy
- Auto-generation/retrieval of DRM keys
- Network traffic shaping/smoothing
- Aspect ratio adaptation
- Streaming & recording modes
- WebDAV/FTP/HTTP support
- R-sync/reverse-proxy support
- CDN authentication and publishing
- PlayReady v.2, AES & CENC encryption
- DRM/CA KMS integration

### AUTOMATION FEATURES

- Virtual playlist/playlist ingestion support
- MP4 & TS archival/recording automation
- Source blocking/replacement automation
- nPVR/CatchUp recording automation
- Dynamic mosaic screen generation
- Customizable thumbnail extraction
- Customizable file naming options
- Integration with SDI/ASI routers
- Ad avail generation (CableLabs ESAM)
- Ad replacement/blocking automation
- Ad Server integration mDialog, Yospace

## MANAGEMENT

### MANAGEMENT/CONTROL

- Central management of Live & File flows
- Web-based management console
- SOAP/XML & REST APIs
- LDAP-based multi-tier user authentication
- Batch, secure remote firmware upgrade
- Configurable audio/visual alarms
- Service and platform level failover options

- N+M, N+1, 1:1 redundancy options
- SNMP v.2 traps/alarms
- NMS/CMS integration hooks
- NIC bonding/teaming & VLAN support
- Task scheduler
- NAS integration (NFS, SAMBA)

## ECOSYSTEM

### MEDIA SERVERS/OVPS

- Adobe Media Server - Primitime
- Microsoft Windows Media Server (IIS)
- MediaMelon SmartServe
- Unified Streaming Platform (USP)
- Wowza Streaming Server
- Youtube, Pikel, ThePlatform, Ustream, SimpleStream, Dacast, Ooyala, LiveU, iStreamPlanet, Kaltura, Brightcove

### CDNs

- Akamai, EdgeCast, Level3, Octoshape, Limelight Networks

### DRM/CAS/KMS

- BuyDRM, CoreTrust, Irdeto, Verimatrix
- Apple HLS native AES-128, Microsoft PlayReady v.2, Google Widevine, Vualto

## CHASSIS

### FORM FACTOR

- 1U standard 19" wide (rack mount)
- 1.75" (44mm) high x 16.9" (429mm) deep
- 16.5 lbs (7.5 kg)

### REDUNDANCIES

- Redundant SSD \*
- Dual hot-swappable power supply
- Up to 6 GigE ports (teaming/bonding)

### POWER SUPPLY

- Auto-switch AC 90-264V (47- 63Hz)
- 400w

### CERTIFICATIONS & COMPLIANCE

- FCC Class A
- CE/RoHS 5-compliant
- WEEE-compliant
- EN61000-6-2 EN55022/24
- EN60950:2000
- UE 89/336/EEC, UE 73/23/EEC

### DISPLAY & INTERFACE

- 32-character liquid crystal display (LCD) control panel (2x16) with backlight