

# HERO CONTRIBUTION

## HEVC/AVC CONTRIBUTION ENCODER/DECODER

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



Media Excel's HERO Contribution Encoder-Decoder product line has the quality and versatility to handle the challenges broadcasters and service providers face today for contribution/distribution and point-to-point video delivery over satellite and IP networks. HERO Contribution is the perfect solution for content gathering, head end feeds and confidence feeds. With its professional quality and proven reliability, it provides the flexibility to deliver high quality HEVC/AVC/MPEG-2 video up to full HD. HERO Contribution leverages Media Excel's 18+ years of leadership in encoding/decoding technologies to provide an ecosystem-wide video delivery solution.

### APPLICATIONS

- NEWS GATHERING
- CONTENT AGGREGATION
- TELEPORT SERVICES
- DIGITAL TURN-AROUND
- IPTV & OTT CONTRIBUTION
- REGIONAL DISTRIBUTION

### RELATED PRODUCTS

- **HERO 5000E CONTRIBUTION ENCODER**  
HEVC/AVC/MPEG-2 low-bitrate contribution/distribution encoder for IP/ASI networks.
- **HERO 5000D CONTRIBUTION DECODER**  
Multi-channel multi-format contribution/distribution decoder for IP/ASI networks.
- **HERO MANAGEMENT**  
Centralized network management solution.

### KEY FEATURES

- Superior bandwidth efficiency with HEVC Main, Main-10
- Up to Full HD video HEVC/AVC/MPEG-2
- End-to-end timecode sync for multi-camera services
- Highest video quality across the delivery chain
- Enhanced error resilience and recovery
- Industry-leading performance and density
- Advanced content delivery redundancy schemes (IP/ASI)

### HERO CONTRIBUTION

Delivering exceptional quality and proven reliability, HERO Contribution enhances traditional applications including content gathering, head-end & confidence feeds. It has the flexibility to **ACCOMMODATE LEGACY AND EMERGING VIDEO COMPRESSION STANDARDS FROM MPEG-2 TO AVC AND HEVC, CREATING A HYBRID AND UNIFIED WORKFLOW** within a single encoder unit.

HERO Contribution supports both Satellite and IP delivery networks and ensures redundancy across multiple delivery paths to **BRIDGE THE MIGRATION GAP FROM CURRENT SATELLITE DISTRIBUTION TO TOMORROW'S IP DELIVERED CDN AND CLOUD SERVICES.**

The HERO Contribution product line features a fully redundant 1RU chassis and Media Excel's state-of-the-art video processing technologies to deliver highly available services for mission-critical applications.

HERO Contribution offers error-correction and packet-loss free delivery technologies to enable **DELIVERY OVER UNRELIABLE TRANSPORTS.** Combined with its exceptional encoding efficiency, bandwidth utilization is substantially decreased. The result is a significant reduction in overall operating expenditures for contribution and distribution services.

# HERO CONTRIBUTION TECHNICAL SPECIFICATIONS

## HERO CONTRIBUTION ENCODER (5000E)

### INPUT

#### VIDEO

- 10-bit HD/SD SDI
- HDMI (Type A) \*
- Component Video (3 BNCs) \*
- S-Video, Composite NTSC/PAL \*
- MPEG-2, AVC/H.264 over TS/IP/GigE \*
- Sync Input, Black-burst/Tri-level
- Sampling 4:2:2

#### HD/SD FORMATS

- 1080i, 720p
- 625 PAL
- 525 NTSC
- 4:3, 16:9 aspect ratio

#### AUDIO

- 8 channels embedded in SDI
- 2 channels embedded in HDMI \*
- 2 channels unbalanced AES/EBU \*
- 4 channels balanced analog (1/4") \*
- 4 channels MPEG-1, AAC, AC-3 in TS/IP \*
- Sampling 48kHz/24bit

#### FRAME RATES

- 23.98, 24
- 25, 50
- 29.97, 30, 59.94, 60

### OUTPUT

#### VIDEO

- HEVC/H.265 4:2:0 8/10 bit
- MPEG-2, AVC/H.264 BL/MP/HP 4:2:0/4:2:2
- SD: 0.1 – 30Mbps
- HD: 0.5 – 80Mbps

#### HD/SD FORMAT

- 1080i, 720p
- 576i PAL
- 480i NTSC
- Resolution up/down conversion

#### TRANSPORT

- MPEG-2 TS RTP/UDP, unicast/multicast
- MPEG-DASH, HLS, RTMP, Smooth, CMAF
- SPTS MPEG-2 TS over DVB-ASI \*
- DVB T/S, ATSC, eMBMS/LTE
- FEC ProMPEG (SMPTE 2022), Zixi & SRT \*

#### AUDIO

- Dolby E/AC3/AC3+ (Pass-through)
- AAC-LC/AAC-HE (MPEG-2, MPEG-4)
- Multi-channel AAC (5.1) \*
- MPEG-1 Layer I & II

#### FRAME RATES

- 23.98, 24
- 25, 50
- 29.97, 30, 59.94, 60
- Frame rate up/down conversion

- VBR or CBR (null padding)
- Configurable PMT/PAT
- SCTE-35 insertion \*
- BISS-1/BISS-E \*
- Dual/redundant GigE/ASI output

#### VIDEO

- SDR/HDR with BT.2020 WCG
- Configurable GOP length
- Deblocking & SAO loop filters
- Hierarchical coding
- Perceptual rate control
- CBR, VBR and Capped VBR
- Timecode sync for multi-camera delivery

#### AUDIO

- Re-sampling, down-mix options
- Audio level monitoring
- Audio gain control
- Dynamic audio normalization
- Multiple audio tracks/languages

## CHASSIS

#### FORM FACTOR

- 1U standard 19" W (rack mount)
- 5000E: 1.75" (44mm) H x 17.5" (44.5cm) D
- 5000D: 1.75" (44mm) H x 17.5" (44.5cm) D

#### POWER SUPPLY

- Auto-switch AC 90-264V (47- 63Hz)
- 600w

#### ENVIRONMENTAL

- Oper. temp: 0 to 50° C (32 to 122° F)
- Storage temp: -20 to 65° C (-5 to 150° F)
- Humidity: 5 to 90 %
- Shock: 10G / 11ms in all axis
- Vibration: 0.8G / 5 to 100 Hz

#### REDUNDANCIES

- Redundant SSD \*
- Dual hot-swappable power supply \*
- 4 GigE ports with teaming/bonding

#### DISPLAY & INTERFACE

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

#### CERTIFICATIONS & COMPLIANCE

- FCC Class A
- CE/RoHS 5-compliant
- WEEE-compliant
- EN61000-6-2
- EN55022/24, EN60950:2000

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

## HERO CONTRIBUTION DECODER (5000D)

### INPUT

#### VIDEO

- HEVC/H.265 4:2:0 8/10 bit
- MPEG-2, AVC/H.264 BL/MP/HP 4:2:0/4:2:2
- SD: 0.1 – 30Mbps
- HD: 0.5 – 80Mbps

#### HD/SD FORMATS

- 1080i, 720p
- 576i PAL
- 480i NTSC
- 4:3, 16:9 aspect ratio

#### TRANSPORT

- MPEG-2 TS RTP/UDP, unicast/multicast
- HLS, RTMP
- MPTS/SPTS MPEG-2 TS over DVB-ASI \*
- FEC ProMPEG (SMPTE 2022), Zixi & SRT \*
- VBR or CBR

#### AUDIO

- Dolby E/AC3/AC3+ (Pass-through)
- AAC-LC/AAC-HE (MPEG-2, MPEG-4)
- Multi-channel AAC (5.1) \*
- MPEG-1 Layer I & II

#### FRAME RATES

- 23.98, 24
- 25, 50
- 29.97, 30, 59.94, 60

### OUTPUT

#### VIDEO

- HD/SD-SDI
- HDMI (Type A) \*

#### HD/SD FORMAT

- 1080i, 720p
- 576i PAL
- 480i NTSC
- Resolution up/down conversion

#### AUDIO

- 8 channels embedded in SDI
- 2 channels embedded in HDMI

#### FRAME RATES

- 23.98, 24
- 25, 50
- 29.97, 30, 59.94, 60
- Frame rate up/down conversion

- Service/PID filtering
- BISS-1/BISS-E \*
- Dual/redundant GigE/ASI input
- On-the-fly format detection & change

## PROCESSING

#### PRE/POST-PROCESSING

- Content adaptive de-interlacing
- De-blocking & noise reduction filters
- VBI black out
- Frame cropping
- Frame scaling with anti-aliasing options
- Contrast/Brightness/Gamma control
- Smoothness/Sharpness control

- Aspect ratio detection & adaptation
- Graphic/Logo overlay with alpha color
- Customizable thumbnail generation
- SCTE-35/104 propagation/conversion
- Timecode burn-in
- CEA 608/708, OP-47, DVB Sub pass-through & burn-in

## MANAGEMENT

#### CONFIGURATION

- Embedded Web Server
- Front panel with LCD/Keypad
- Import/Export/Backup of configuration

#### MONITORING

- SNMP (MIB v.2) with traps/alarms
- Configurable audio visual alarms
- Remotely upgradable

## CHANNEL DENSITY

Codec	HERO Contr. Encoder	HERO Contr. Decoder
MPEG-2 up to 1080p	4	8
AVC up to 1080p	4	8
HEVC up to 1080p	2	4