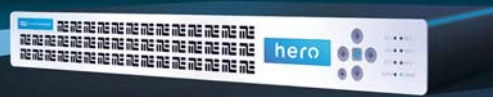
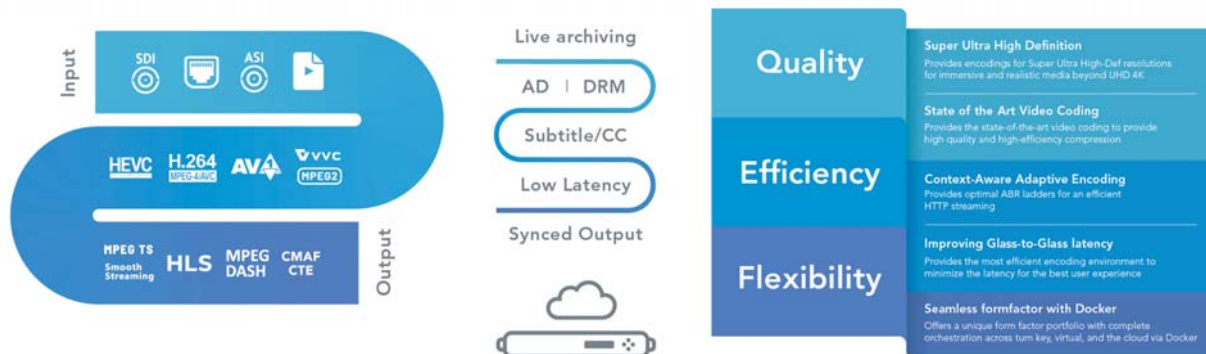


Multiscreen Live Encoder / Transcoder

4K 8K



Media Excel defines the adaptive bitrate, multi-device transcoding standard for multiscreen video delivery. The HERO 6000 product enables both Live and File workflows and delivers content to over 400 million multiscreen subscribers worldwide. Media Excel's five 9s reliability powers the 24x7, mission critical deployments of Fortune 500 companies and global brands in Broadcast, Cable, Satellite, IPTV, Pay TV, OTT/TVE, Mobile and Government/DoD.



Key features

- Superior Visual Quality with the Best Performance and High Density
- Hybrid Software and Hardware encoding solution with CPU, GPU and SoC
- Up to 150% higher performance than HERO's predecessor
- Ultra Low latency e2e Mode for OTT
- Support All Major Video/Audio Codecs
- Support mobile to 8K resolutions encoding
- Hybrid Adaptive Bitrate Outputs with multiple protocols and multiple simultaneous publishing points
- Content-aware Adaptive bitrate control (CABR) for optimal use of bandwidth
- Native ad insertion/signaling and DRM integration
- Output synchronization from multiple camera inputs
- Comprehensive High Availability : Input, service and platform level redundancy (N+1, N+M, 1+1)
- Multichannel UHD 4K OTT encoding/transcoding
- Flexible workflow - switchable between Live & File mode
- Reliable transport with SMPTE 2022 FEC & SRT*
- Powerful API set for easier integration with ecosystem partners
- Seamless Form Factors and Flexible deployment options (appliance, VM, docker)
- Interoperability with Azure Amazon, Akamai, USP, etc.

Applications

- Multi-resolution, multi-codec, multi-rate for adaptive delivery
- 24x7, on-demand live and event-based services
- Hybrid linear TV services: Cable, Satellite, IPTV, OTT
- High performance encoding/transcoding farms
- On-premise, Virtual, Cloud and Hybrid deployments
- Ultra low latency distribution for OTT
- Synchronized Output from multiple camera inputs

Input

INTERFACES

- SD/HD/3G*/12G*-SDI, DVB ASI*
- 1G/10G* Ethernet / Fiber channel*

INPUT FORMATS & CONTAINERS

- SD, 720p, 1080p/i, 2160p*, ~60fps
- Progressive/interlaced
- 4:2:0/4:2:2 8/10bit
- Embedded audio in SDI (~32 tracks)
- MPEG-2 TS RTP/HLS/UDP, SPTS, MPTS, unicast/multicast, DVB-ASI*
- SRT*, ProMPEG FEC (SMPTE 2022)
- RTMP/RTMPS (push & pull)
- Virtual playout/playlist
- Files in MPEG-2 TS/PS, 3GP, 3GPP, AVI, MP3, MP4, FLV, F4V, MOV, MKV, MXF (OP1A, OPAtom), ProRes, WMV, WMA, ASF, DV

INPUT CODECS

- MPEG-2, H.264, H.265
- AAC-LC, AAC-HE v1/v2, PCM, MPEG-1 Layer I & II, Dolby DD*/DD+*

Processing

PRE/POST PROCESSING

- Auto/manual PID selection
- Contrast/Brightness/Gamma control
- Smoothness/Sharpness control
- Frame resizing, cropping with anti-aliasing options
- High quality, motion compensated frame rate conversion
- Source blocking/replacement
- Content-adaptive de-interlacing
- Graphic overlay (4 layers with alpha color), per-video profile
- Dynamic scrolling text
- Dynamic audio normalization, loudness control (EBU-R128)
- Periodic thumbnail generation

META DATA

- Subtitle conversion from OP-47, ST-2031, EIA 608/708, DVB Subtitles (OCR), DVB-TT to WebVTT, TTML, ISMT, IMSC1
- LTC, VITC, ST-2084, ST-12M
- Analog cue-tone/SCTE-35/104 conversion, injection (ESAM)
- Nielsen ID3

Outputs

AUDIO & VIDEO ENCODING

- ABR up to 2160p60
- CBR, Capped VBR, Content-aware VBR
- OTT low latency mode
- High Dynamic Range support: HDR-10, HLG with BT.2020 WCG
- Progressive and interlaced encoding
- Re-sampling, down-mix processing
- Multiple audio tracks, languages
- Encoding, transcoding, pass-through, audio-only/radio modes

OUTPUT CODECS

- MPEG-2 BL/MP/HP
- H.264 BL/MP/HP L5.2
- HEVC* Main, Main 10, Main 4:2:2 10bit*
- AV1* and VVC*
- MPEG-1 Layer I & II
- AAC-LC, AAC-HE v1, v2
- AES-302M, DD/DD+ pass-through
- Dolby DD/DD+ encoding*

PACKAGING & STREAMING

- Adaptive and broadcast formats with frame-accurate alignment balancing
- MPEG-2 TS RTP/UDP Unicast/Multicast, SRT*
- MPEG-DASH, HLS (push & pull)
- Smooth Streaming,
- DASH Interface 1, 2
- CMAF CTE/ULL* (push & pull)
- RTMP/RTMPS (push & pull)
- CDN authentication & publishing, multiple publishing points
- Recording to TS, fMP4, HLS, CMAF for archiving from live source
- Block & object storage (CIFS, NFS, Azure, AWS)
- Multi-DRM (Verimatrix, Pallycon, etc. for PlayReady, Widevine, FairPlay)
- Synchronized encoding from multiple camera inputs*
- Synchronized, aggregated encoding over a group of encoders*

Ecosystem

MEDIA SERVERS

- Azure Media Services
- Amazon Media Package
- Unified Streaming (USP)
- Wowza Streaming Server

DRM/CAS/KMS

- Google Widevine CENC
- Microsoft PlayReady
- Apple FairPlay
- Multi-DRM - Verimatrix, Irdeto, Pallycon

CDNS

- Akamai, EdgeCast, Level3, Limelight, Broadpeak, Fastly, Cloudflare, VDMS

OVPS

- Youtube, Facebook, Twitter, Periscope, Twitch, LinkedIn
- Ooyala, Ustream, Dacast, Comcast/ThePlatform

AD SERVICES

- CableLabs ESAM Compliant
- mDialog, YoSpace, Nowtilus, Ad Insertion Platform, AWS Media Store
- BlackArrow, FreeWheel, SpotX

VIRTUAL/CLOUD

- VMWare, KVM, HyperV
- Docker, Kubernetes, AKS
- Azure, AWS, Google, etc.

Hardware & environmental

FORM FACTOR

- 1U 19" wide (rack mount)
- 25.6" (650mm) deep
- 20lbs (9.3kg)

POWER SUPPLY

- AC 90-264V, 47- 63Hz
- 350~600w

ENVIRONMENTAL

- Op. temp: 10~35°C (50~95°F)
- Storage: -20~60°C (-5~140°F)
- Humidity: 5 ~ 90 %
- Shock: 10G / 11ms in all axis
- Vibration: 0.8G / 5 to 100 Hz

REDUNDANCIES

- Dual hot-swappable PSU
- Up to 6 Ethernet ports, bonding

DISPLAY & INTERFACE

- 32-character LCD w/ keypads for network configuration and power/reset

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

Management

SELF-CONTAINED MANAGEMENT

- Web-based management console
- REST APIs
- Task scheduling
- Configurable audio/visual alarms and SNMP v.2 traps/alarms
- IO, source redundancy
- SDI router control
- LDAP-based multi-tier user authentication
- Batch, secure remote firmware upgrade
- NAS integration (NFS, SAMBA)
- Import/export/backup of configuration

Product ordering options

INPUT

- IP only
- IP, SDI / ASI

CODEC

- MPEG-2, H.264 HP
- +HEVC Main, Main 10
- +HEVC Main 4:2:2 10

CHANNEL DENSITY

- 1 2 4 8 CH

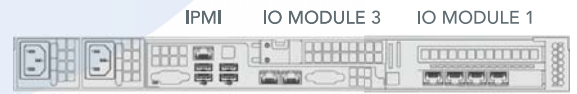
RESOLUTION

- Up to FHD 30fps
- Up to FHD 60fps
- Up to UHD 4K 60fps
- Up to UHD 8K 60fps

DEPLOYMENT

- Hardware appliance
- VM, docker on cloud

* Contact sales@mediaexcel.com for customizable options



- IO/PROCESSING MODULE 1 & 2 (TWO OF FOLLOWINGS)
- HD-SDI Q3G/12G ASI | 1 2 4 8 ports
 - 2p NIC 4p NIC | RJ-45 SFP
 - GPU/SoC HW accelerator (not user selectable)
- IO MODULE 3 (ONE OF FOLLOWINGS)
- Low Profile 2p NIC 4p NIC | RJ-45 SFP
 - Low Profile Q3G/12G-SDI ASI | 1 2 4 ports

* Optional items: certain features are available in specific models only. NOTE: Specification is subject to change without notice