

# HE4000



## UHD AND MULTI-HD HEVC ENCODER FOR CONTRIBUTION OVER UNMANAGED NETWORKS



The HE4000 is an UHD and multi-HD encoder combining the best-in-class 10-bit and 4:2:2 HEVC video compression format with the latest generation of AVIWEST's SafeStreams® technology for delivery of live video content over unmanaged networks — such as 3G/4G-LTE cellular network and/or public internet — at low latencies and bitrates.

Combined with the patented AVIWEST SST (Safe Streams Transport) protocol — which incorporates IP bonding techniques, precision timing over bonded cellular and the public internet, and adaptive bitrate encoding — broadcasters save dropped packets during live transmission due to multiple layers of redundancy. SafeStreams automatically recovers dropped packets through forward error correction. Then, if the errors are too long or too deep, then automatic retransmission kicks in to request the missing packets. Finally, this technology also has a built-in level of redundancy. Together, those elements make for the ultimate in reliability across all possible IP-based networks. Together, those elements make for the ultimate in reliability across all possible IP-based networks.

The HE4000 is fully integrated with the Manager and StreamHub transceiver to simplify system monitoring, management, content reception, and distribution over unmanaged networks. Paired with the AVIWEST's QUAD CellLink - a combination of patented high efficiency antennas and 3G/4G-LTE modems -, the HE4000 is the ideal companion for video professionals that need high performance and enhanced delivery when the direct access to the public internet is not easy.

The HE4000 HEVC encoder enables broadcasters rapid, cost effective and reliable deployment of superior-quality HD and Ultra HD content for mission-critical contribution applications or remote production.



### COST-SAVING

To reduce the cost of contributing and distributing video between the network and affiliates or between the field and MCR is key. Renting a telecom connection or satellite circuit is quite expensive and complex to setup. With the HE4000, professionals cut the costs and simplify their operations.



### VERSATILE

With its 1RU ½ rack compact design, HE4000 also reduces power costs and spaces requirements. It is the perfect powerful and agile solution to efficiently and seamlessly produce high quality live sport and event coverage.



### HIGH PERFORMANCE

The HE4000 is able to encode one 2160p UHD channel or four 1080p HD channels without compromise on video quality. Leveraging the H.265/HEVC technology, the product revolutionizes video production by delivering the same visual quality as H.264/AVC at up to 50% of the bitrates.



### ANY NETWORKS

Leveraging AVIWEST'SST protocol, an intelligent IP bonding stack and powerful contribution network protocols, the HE4000 reliably delivers exceptional video quality with extremely low latency even over unmanaged network conditions.

AVIWEST continuously improves its products portfolio and reserves the right to modify the specifications without prior notice.

# MAIN SPECIFICATIONS

## VIDEO

**STANDARDS** UHD: 3840x2160p25/29.97/30/50/59.94/60 fps  
 HD: 1080p25/29.97/30/50/59.94/60,  
 1080i50/59.94/60,  
 720p50/59.94/60  
 SD: PAL, NTSC

**ENCODING** H.265/HEVC 4:2:0/4:2:2, 8-bit and 10-bit

**BITRATES** 200 Kbps to 200 Mbps  
 Constant Bitrate (CBR, CBR Intra only)  
 Variable Bitrate (VBR)

**INPUTS** SDI, HDMI

## AUDIO

**ENCODING** AAC-LC

**BITRATES** 32 Kbps to 256 Kbps per channel

**MODE** Mono, Dual Mono or Stereo 2.0

**DENSITY** Up to 4 channels per video input

**INPUTS** Embedded (SDI, HDMI)

## NETWORK CONNECTIONS

**ETHERNET** Gigabit Ethernet port  
 - LAN, WAN  
 - portable satellite (BGAN, GX, Ka Band)

**CELLULAR** External AVIWEST QUAD CellLink solution (USB)  
 - up to 8 x 3G/4G LTE modems  
 - high gain custom antennas

## ADVANCED FEATURES

AVIWEST SST protocol  
 Single UHD channel encoding  
 Multi-HD/SD channels encoding (up to 4)  
 Sub second glass-to-glass latency (down to 500ms)

## INTERFACES

4 x SDI input (BNC) configurable as 1 x 12G-SDI or 4 x 3G-SDI input  
 - SMPTE 425-1 Level A and Level B  
 - 4 quadrants or 2 Sample Interleave (2SI)  
 1 x HDMI 2.0 input  
 2 x RJ-45 Ethernet  
 2 x USB 3.0 (type-A)

## CONTROL & MONITORING

On screen display (basic settings & status)  
 Web GUI (through laptop, smartphone, etc.)  
 From AVIWEST MANAGER Management System  
 From AVIWEST STREAMHUB Transceiver

## POWER

**POWER SUPPLY** DC input 12V  
 Delivered with external AC PSU, 100-240 VAC, 50/60Hz

**CONSUMPTION** 120 W max

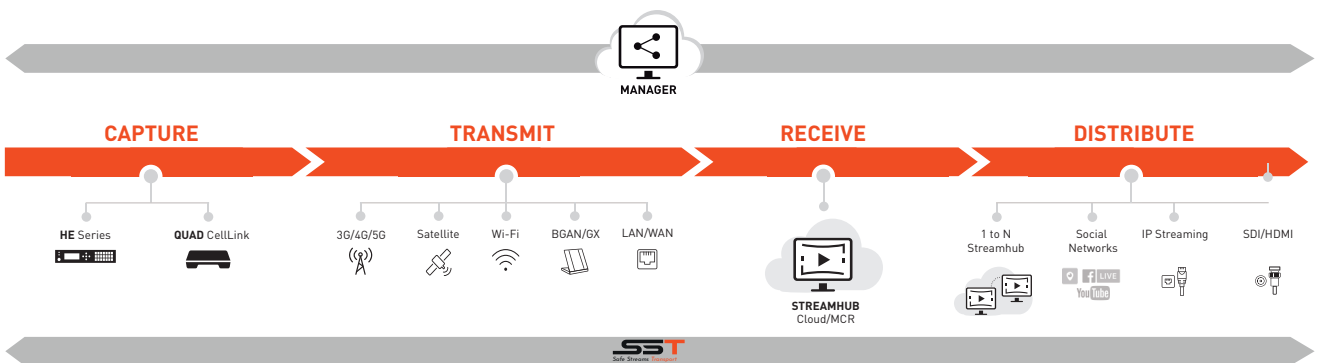
## PHYSICAL

**DIMENSIONS (W x H x D)** 21,4 cm x 4,2 cm x 27,1 cm  
 (8.27" x 1.57" x 10.63")

**WEIGHT** 2,2 Kg / 4.85 lbs

**OPERATION TEMPERATURE** 0°C to 45°C (32°F to 113°F)

# SYSTEM OVERVIEW



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