4K UHD & Multi-HD Encoder and Bonded Cellular Transmitter

The Haivision Pro460 is our latest generation mobile video encoder and transmitter designed for live broadcasters and news gathering professionals looking to contribute high-quality video from any location. Multi-camera HD and pristine 4K UHD encoding, including in HDR are combined with reliable low latency mobile transmission capabilities in this 5G compliant solution.

With its compact form factor, the Pro460 includes the latest generation of hardware accelerated H.265/HEVC encoding for premium video quality with optimized data usage and end-to-end latency as low as 200ms. The widely adopted H.264/AVC codec is also supported for interoperability with all types of video destinations. Our innovative design is suited for a variety of broadcast contribution workflows from single camera HD sources for news, to multi-camera HD (up to 4) for live sports, and 4K UHD content for premium events coverage.

The Pro460 offers a full set of advanced features for live broadcast contribution and remote production. This includes perfect video synchronization and lip sync from multiple cameras and across all video streams to guarantee seamless camera switching and efficient video editing at the receiving end, in the remote production studio. The Pro460 can connect to network-based devices such as PTZ cameras and tally lights for remote control by a Haivision StreamHub receiver, even during live transmissions. The Pro460 also supports low latency and high-quality video returns including teleprompting information or studio feeds. A bi-directional audio intercom (IFB) is also available for real-time communication between field and production staff.

The Pro460 embeds six globally compliant 3G/4G/5G cellular modems with our high efficiency and patented antennas. Video transmissions can also be sent over other types of IP network including WiFi, Ka or Ku band satellite, an IP leased line and the public internet. Our Emmy® awarded SST Technology (Safe Stream Transport) offers advanced and dynamic network aggregation, adaptive packet retransmission (ARQ) and forward error correction (FEC) to maximize network throughput and optimize the quality of service.

Available in a compact ruggedized enclosure, the Pro460 offers standard V-Mount or Gold-Mount plates for direct mounting on professional cameras or can be used with the included specially designed backpack.

Simple
The Pro460 is extremely user-friendly and features an intuitive touch-screen user interface enabling camera operators to begin broadcasting live video with just 2 taps.

Versatile
The Pro460 is a versatile all-in-one solution for mobile video contribution and remote production. Encode and transmit a single 4K UHD source or four simultaneous HD sources with up to 10-bit pixel depths, 4:2:2 chroma subsampling, and in HDR.

High Performance
By implementing an ultra-low latency H.265/HEVC hardware encoder in a compact design enclosure, the Pro460 enables video professionals to provide seamless and pristine video for news and events coverage.

Any Network
Leveraging the Emmy® award winning SST and SRT protocols, the Pro460 can reliably transmit high-quality broadcast contribution video over bonded cellular and IP networks with fluctuating conditions.

Main Functions

Premium Live Video up to 4K UHD The Haivision Pro460 offers the highest-quality video performance and the latest generation of HEVC encoding technology for pristine HD and UHD video transmission over mobile networks including 5G. Built on the two-time award-winning SST cellular bonding technology, the Pro460 can transmit live video with bitrates up to 80Mbps for high-quality broadcast contribution.

Multi-camera Remote Production Bring your remote production and REMI workflows to the next level with four frame-synced HD feeds and simultaneous remote control of IP-based equipment including PTZ cameras. Thanks to high bandwidth and low-latency video transmission over 4G and 5G networks supported by its 6 internal modems and antennas, the Pro460 enables multi-camera remote production from anywhere.

IFB & Video Return Ensure two-way audio communication between the producer, camera operator & on-air talent thanks to a seamless and robust intercom system. The Pro460 can also receive a high-quality HD feed from the production studio during a live broadcast or in standby mode. With sub-second latency streaming, Pro460 return feeds can be used for watching on-air programs, teleprompting information or confidence monitoring from the field.

Record & Progressive Forward Record UHD/HD broadcast-grade quality video on an SD card, and optimize your file forwarding time by with progressive uploads while the live recording is still in progress. The Pro460's advanced recording and file forwarding enables fast and error-free video delivery over any mobile or IP network.

VIDEO

Standards
UHD: 2160p60/59.94/50/30/29.97/25
HD: 1080p60/59.94/50/30/29.97/ 25
　　　1080i60/59.94/50
　　　720p60/59.94/50

Density
Single UHD/HD
Quadruple HD

Encoding
H.265/HEVC 4:2:0/4:2:2 8/10-bit
H.264/AVC 4:2:0, 8-bit
Dynamic resolution adjustment
High Dynamic Range (HLG & PQ)

Bitrates
2 Mbps to 80 Mbps for UHD
300 Kbps to 20 Mbps for HD
Constant Bitrate (CBR)
Variable Bitrate (VBR)

Inputs
SDI

AUDIO

Encoding
AAC-LC

Bitrates
32 Kbps to 256 Kbps

Mode
Mono, Stereo

Density
Up to 4 Mono or up to 4 Stereo

Inputs
Embedded over SDI

NETWORK CONNECTIONS

Cellular
6 x 3G/4G/5G world-wide compliant modems
　　- Sub 6GHz bands
　　- SA (Stand Alone) and NSA (Non Stand Alone)
　　- Internal high efficiency antennas

Ethernet
2 x Gigabit Ethernet ports
　　- LAN, WAN
　　- portable satellite (Ka & Ku Band)

Wi-Fi
Dual band Wi-Fi modem 802.11a/b/g/n/ac (2.4GHz and 5 GHz)
　　- Client & Hot Spot modes
　　- High-efficiency embedded antenna

Transport Protocol
SST over Cellular/Ethernet/WiFi (bonding)
SRT over Ethernet

ADVANCED FEATURES

Dual encoding for simultaneous Live & Record (single HD mode)
Sub second glass-to-glass latency (down to 200 ms in single encoder mode and
　　　down to 500 ms in multi-encoder mode)
Video and Audio level preview
Intercom/IFB
Video return from Studio (full HD, sub-second latency)
Automatic Live Start
Networks Links priorities (user configurable)
Data Bridge for switching the device as mobile router
Simultaneous Live and IP traffic (for remote camera control)
Geolocation (GPS)
SMPTE-12M timecode passthrough

INTERFACES

1 x 12G/3G-SDI input and 3 x 3G-SDI inputs (BNC)
1 x 12G-SDI output (BNC)
1 x HDMI 1.4 output
1 x GenLock input (BNC)
2 x RJ-45 Ethernet
2 x USB 3.0 (type-A), 1 x USB 3.0 (type-C)
6 x micro SIM slots
1 x mini jack for IFB/intercom headset
1 x micro SD card slot

CONTROL & MONITORING

Embedded touch screen
Web UI from any browser
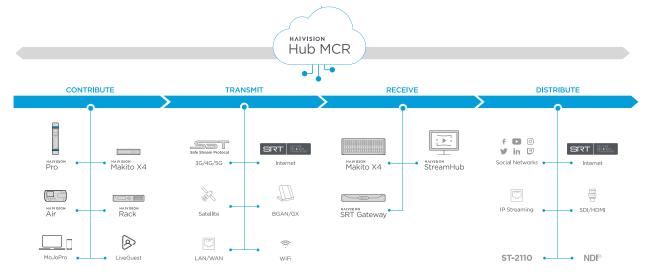From Haivision StreamHub transceiver
From Haivision Manager

POWER

Power Supply
DC input 18V
External battery with V-mount or Gold-mount plates

Consumption
4 hours with battery (90 Wh)

PHYSICAL

Dimensions (W x H x D)
26,6 cm x 8,4 cm x 12,5 cm
(10.47" x 3.30" x 4.92")

Weight
1.5 Kg / 3.3 lbs

Operating Temperature
0°C to 45°C (32°F to 113°F)

System Overview