



4K UHD & Multi-HD Encoder

The Haivision Rack400 is a compact video encoder for multi-camera HD, 4K UHD, and HDR remote production of live sports and news. The Rack400 includes hardware accelerated H.265/HEVC and H.264/AVC encoding for premium video quality with optimized bandwidth usage and end-to-end latency as low as 200ms.

For multi-camera broadcast contribution, up to four HD encodes, the Rack400 supports video and audio stream synchronization for seamless camera switching at production. The Rack400 can also connect to PTZ cameras and tally lights for remote control by a Haivision StreamHub receiver, even during live transmissions. To facilitate communications between field operators and production staff, the Rack400 offers video return feeds and a bidirectional audio intercom (IFB).

Designed for both fixed and mobile deployments, the Rack400 can be used as a standalone appliance or up to 2 units can be rackmounted in a 1RU space making it ideally suited for installation in OB vans. Rack400 encoders can be directly connected over wired IP networks, to mobile networks using the Haivision Quad CellLink active cellular antennas, or Ka satellite transmitters, enabling live video broadcasting from anywhere.



Simple

The Rack400 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 Rack400 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 Rack400 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 Rack400 can reliably transmit high-quality broadcast contribution video over any network even with fluctuating conditions.

Main Functions

Premium Live Video up to 4K UHD The Haivision Rack400 offers the highest-quality video performance and the latest generation of HEVC encoding technology for pristine HD and UHD video transmission over all types of IP networks. Supporting SRT for safe and reliable streaming over the internet as well as SST for cellular bonding technology using an optional Haivision Quad CellLink antenna, the Rack400 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 IP video transmission, the Rack400 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 Rack400 can also receive a high-quality and encrypted HD feed from the production studio during a live broadcast or in standby mode. With sub-second latency streaming, Rack400 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 Rack400's advanced recording and file forwarding enables fast and error-free video delivery over any 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

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

Cellular
 With optional Haivision Quad CellLink
 - 4 x 3G/4G-LTE world-wide compliant modems
 - 4 SIM slots
 - High efficiency embedded antenna

Transport Protocol
 SST over Cellular/Ethernet (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 with AES encryption
 Video return from studio (full HD, sub-second latency, AES encryption)
 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)
 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)
 1 x mini jack for IFB/intercom headset
 1 x micro SD card slot

CONTROL & MONITORING

Embedded touch screen
 Web UI (through laptop, smartphone, etc.)
 From Haivision StreamHub transceiver
 From Haivision Manager

POWER

Power Supply
 Dual DC input 18V

Consumption
 34W max (25W to 30W typical)

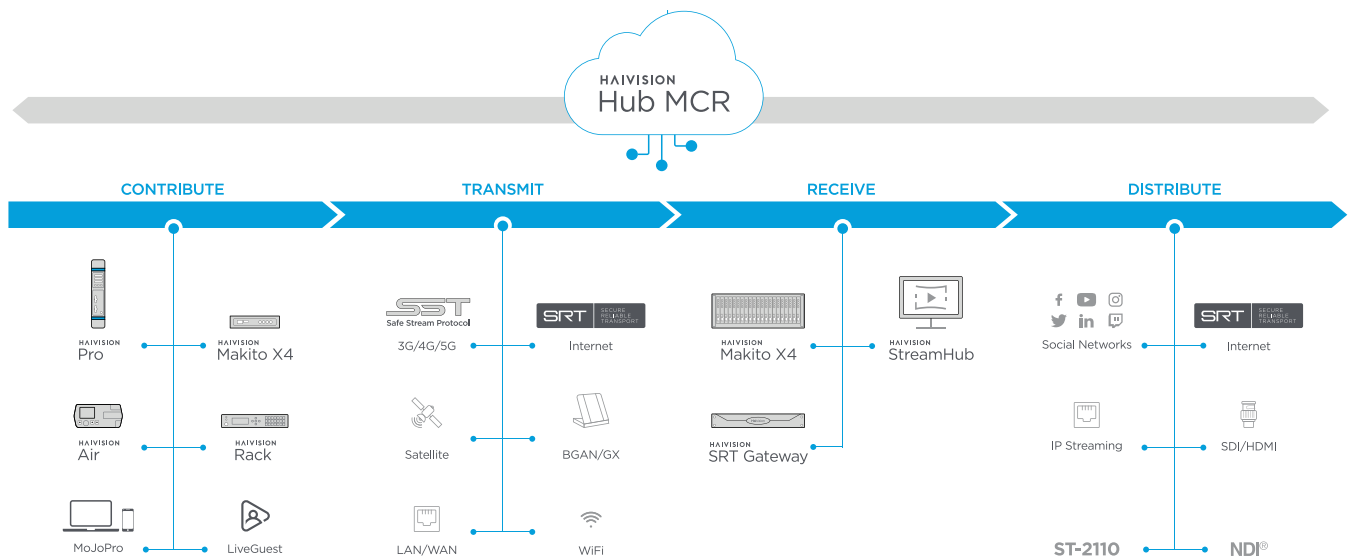
PHYSICAL

Dimensions (W x H x D)
 22.2 cm x 4.4 cm x 11.5 cm
 (8.66" x 1.57" x 4.33")

Weight
 1.36 Kg / 3.00 lbs

Operating Temperature
 0°C to 40°C (32°F to 104°F)

System Overview





Live HD Video Encoding

Haivision Rack 200 and 300 video encoders are designed for space-constrained outside broadcast and remote production workflows. Haivision Rack encoders can be deployed in fixed locations connected to an IP network, offering a cost-effective alternative to satellite or fiber. Rack encoders can also be installed in OB vans or trucks, connected to a roof-mounted Haivision Quad CellLink with 4 active 3G/4G antennas or to a Ka satellite transmitter, enabling live video contribution from any location, even with unpredictable network conditions.

Equipped with a user-friendly, intuitive touchscreen, Haivision Rack supports multiple modes of operation including live, record, live and record, file forward, and data bridge for high-speed internet connectivity.

Haivision Rack is an HEVC and H.264 video encoder for low bitrate and high quality HD video streaming at sub-second latency. Powered by the two-time Emmy award winning SST protocol, Haivision Rack reliably delivers pristine quality video over multiple networks to ensure that sufficient bandwidth is always available and that video transmissions are uninterrupted. As a Haivision product, the Rack series of encoders also natively supports the SRT protocol for flawless video streaming, even in the face of packet loss, jitter and fluctuating network bandwidth.



Simple

Extremely user-friendly with an intuitive touch-screen interface enabling camera operators to begin broadcasting live video with just 2 taps.



Versatile

Featuring a compact 1/2U form factor, Haivision Rack encoders can be placed anywhere, even with limited space, and can also be rack mounted using a single or dual appliance 1U kit.



High Performance

By implementing a low latency H.265/HEVC hardware encoder in a compact enclosure, the Haivision Rack Series enables producers to provide seamless and pristine video for news and events coverage.



Any Network

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

	Rack300	Rack200
H.265/HEVC Encoding	•	
H.264/AVC Encoding	•	•

Main Functions

Live Video Encoding Broadcast pristine quality live video over bonded IP networks with low latency: 3G/4G, Ethernet, Wi-Fi, BGAN, GX and Ka satellite bands.

IFB & Video Return Ensure two-way audio communication between camera operators, production crews & on-air talent with advanced intercom features. Receive and watch high quality HD feeds from the studio during live sessions or when the device is idled. With sub-second latency delivery, it is especially designed for receiving on-air program, teleprompting information or ensuring confidence monitoring from the field.

Auto-Record and Progressive Forwarding You can simultaneously stream live video while recording to an SD card with different resolutions and bitrates to ensure an optimal and constant video quality. Forward file recordings while recording is in progress, enabling quick and efficient broadcast production and creating a backup in the case of transmission interruption.

Data Bridge Leveraging the transmitter's aggregated networks connections, a Rack appliance can be used as a mobile router providing high-speed internet connectivity from anywhere.

VIDEO

Standards

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

SD: PAL, NTSC

Encoding

H.265/HEVC 4:2:0, 8-bit
H.264/AVC 4:2:0, 8-bit
Dynamic resolution adjustment

Bitrates

200 Kbps to 20 Mbps for HD
Constant Bitrate (CBR)
Variable Bitrate (VBR)

Inputs

SDI, HDMI

AUDIO

Encoding

AAC-LC

Bitrates

32 Kbps to 256 Kbps

Mode

Mono, Dual Mono, Stereo 2.0

Density

Up to 4 Channels

Inputs

Embedded (SDI, HDMI), Analog (L/R)

NETWORK CONNECTIONS

Ethernet

Gigabit Ethernet ports
- LAN, WAN
- portable satellite (BGAN, GX, Ka & Ku Band)

Cellular

With Haivision Quad CellLink
- 4x 3G/4G-LTE world-wide compliant modems
- 4x SIM slots
- Internal high efficiency antennas

Transport Protocol

SST over Cellular/Ethernet (bonding)
SRT over Ethernet

ADVANCED FEATURES

Dual encoding for simultaneous Live & Record
Sub second glass-to-glass latency (down to 500 ms)
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
Hot Folder for smart and automatic file forwarding
AES scrambling

INTERFACES

1 x 3G-SDI input, 1 x 3G-SDI output (BNC)
1 x HDMI 1.4 input, 1 x HDMI 1.4 output
2 x RJ-45 Ethernet
1 x USB 3.0 (type-A)
1 x mini XLR for IFB/intercom headset
2 x mini XLR balanced (for analog audio)
1 x SD card slot

CONTROL & MONITORING

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

POWER

Power Supply

Dual DC input 18V (XLR input hot swap)

Consumption

30W max (24W to 28W typical)

PHYSICAL

Dimensions (W x H x D)

22.2 cm x 4.4 cm x 12.5 cm
(8.66" x 1.57" x 4.72")

Weight

Rack200: 1.22 Kg / 2.69 lbs
Rack300: 1.32 Kg / 2.91 lbs

Operating Temperature

-5°C to 45°C (23°F to 113°F)

System Overview

