

# PRO460



## 4K UHD & MULTI-HD ENCODER OVER BONDED CELLULAR NETWORKS



The PRO460 is our latest generation of mobile video encoder and transmitter designed for live video producers (sports, concert, etc.) and news gathering professionals looking for video delivery performance from any location around the world. **Multi-camera production in HD** or single pristine **4K UHD** capabilities are combined with mission-critical transmission in this **5G** compliant solution.

With its compact form factor, the PRO460 supports the upmost generation of UHD H.265/HEVC hardware encoder by offering premium video quality with optimized data usage and **low end-to-end latency** (down to 0,2 sec). The widely adopted H.264/AVC format is still supported for compliancy with deployed infrastructures. Our innovative design enables multiple encoding and transmission workflows from single HD source for News, to multiple HD sources (up to 4) for sports, through single 4K UHD for premium events coverage.

With PRO460, all required features for **Remote Production** or **At-Home Production** workflows are fulfilled. As first, it supports a perfect video synchronization and lip sync across multiple cameras in the venue to guarantee seamless camera switching and efficient video editing in the remote production studio. As second, our solution enables remote control of network-based devices such as PTZ cameras and tally lights. Our solution is camera agnostic and runs simultaneously with the live transmission. In addition, the PRO460 supports low delay and high-quality video delivery from the studio to the field units. Also known as Video Return, this feature allows delivering teleprompting information or studio feed to the field. At least, bi-directional audio intercom is available for communication between the field and the studio.

The PRO460 embeds **6 world-wide compliant 3G/4G/5G cellular modems** with high efficiency custom patented antennas. The transmission can also operate on other networks such as WiFi, BGAN satellite, Ka or Ku band satellite, IP leased line or simply the Internet. It is made possible thanks to our **Emmy® awarded SST Technology** (Safe Stream Transport). This technology offers advanced techniques of networks aggregation, Adaptive packet Retransmission (ARQ) and Forward Error Correction (FEC) to reach the upper networks throughput and maximize the Quality of Services.

Available in a compact ruggedized enclosure, the PRO460 offers standard V-Mount or Gold-Mount plate for direct mounting on professional cameras, but also comes with a smart designed backpack.



### SIMPLE

The PRO460 has been designed with ease-of-use in mind, the user-friendly intuitive interface allows broadcasting live videos in 2 touch screen taps.



### VERSATILE

Single 4K UHD sources or Quadruple HD sources transmission are supported without extra or hidden licenses. The PRO460 is the affordable all-in-one solution for video production requiring mobility, remote access and flexibility regarding the field conditions.



### HIGH PERFORMANCE

By implementing the best state-of-the art H.265/HEVC hardware encoder in a compact design enclosure, the PRO460 enables video professionals to provide seamless high quality news and event coverage.



### ANY NETWORKS

Leveraging Emmy® award winning AVIWEST's SST protocol, an intelligent IP bonding stack and powerful contribution network protocols, the PRO460 ensures the delivery of live video even in the midst of unpredictable and unmanaged network conditions.

# MAIN FUNCTIONS

## PREMIUM 4K UHD LIVE

You want the highest-quality video performance and we offer the latest generation of HEVC encoder for pristine HD and UHD video transmission. Built on AVIWEST doubly awarded SST bonding technology, the unit reaches up to 80Mbps HEVC live video encoding.

## MULTI-CAMERA REMOTE PROD

Move your Remote At-Home Production to the next level with four frame-synced HD feeds combined with remote control of any IP-based equipment. It is possible wherever you are in the field, thanks to our superior 4G/5G performances supported by 6 internal modems and high-efficiency internal antennas.

## IFB & VIDEO RETURN

Ensure two-ways audio communication between the producer, production crews & on-air talent thanks to a seamless and robust intercom. Receive and watch high quality HD feed 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.

## REC & PROGRESSIVE FORWARD

Record UHD/HD broadcast-grade quality video on the SD card, and optimize your time by forwarding the file progressively whereas the record is still in progress. This forward approach enables fast and error-free video delivery.

# MAIN SPECIFICATIONS

## VIDEO

<b>STANDARDS</b>	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
<b>DENSITY</b>	Single UHD/HD Quadruple HD
<b>ENCODING</b>	H.265/HEVC 4:2:0/4:2:2* 8-bit, 10-bit* H.264/AVC 4:2:0, 8-bit Dynamic resolution adjustment HLG*
<b>BITRATES</b>	2 Mbps to 80 Mbps for UHD 300 Kbps to 20 Mbps for HD Constant Bitrate (CBR) Variable Bitrate (VBR)
<b>INPUTS</b>	SDI

## AUDIO

<b>ENCODING</b>	AAC-LC
<b>BITRATES</b>	32 Kbps to 256 Kbps
<b>MODE</b>	Mono, Stereo
<b>DENSITY</b>	Up to 4 Mono or up to 4 Stereo
<b>INPUTS</b>	Embedded over SDI

## NETWORK CONNECTIONS

<b>CELLULAR</b>	6 x 3G/4G/5G world-wide compliant modems - Sub 6GHz bands - SA (Stand Alone) and NSA (Non Stand Alone) - Internal high efficiency antennas
<b>ETHERNET</b>	2 x Gigabit Ethernet ports - LAN, WAN - portable satellite (BGAN, GX, Ka & Ku Band)
<b>WI-FI</b>	Dual band Wi-Fi modem 802.11a/b/g/n/ac (2.4GHz and 5 GHz) - Client & Hot Spot modes - High-efficiency embedded antenna
<b>TRANSPORT PROTOCOL</b>	SST over Cellular/Ethernet/Wi-Fi (bonding)

## 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)

## 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 (through laptop, smartphone, etc.)
From AVIWEST STREAMHUB transceiver

## POWER

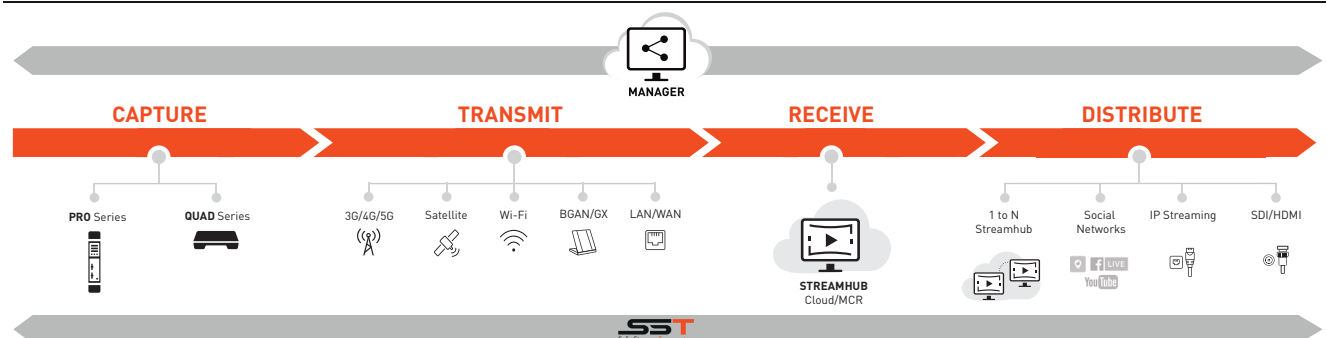
<b>POWER SUPPLY</b>	DC input 18V External battery with V-mount or Gold-mount plates
<b>CONSUMPTION</b>	4 hours with battery (90 Wh)

## PHYSICAL

<b>DIMENSIONS (W x H x D)</b>	26,6 cm x 8,4 cm x 12,5 cm (10.47" x 3.30" x 4.92")
<b>WEIGHT</b>	1.5 Kg / 3.3 lbs
<b>OPERATION TEMPERATURE</b>	0°C to 45°C [32°F to 113°F]

\* H1 2022 support (firmware upgrade)

# SYSTEM OVERVIEW



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

# PRO3 Series



## PREMIUM HEVC ENCODER OVER BONDED CELLULAR NETWORKS



The PRO3 Series is our flagship mobile video encoder & transmitter solution designed for live video producers and news gathering professionals looking for contribution performance from any location around the world.

With its large set of professional audio and video interfaces, the PRO3 Series supports the best state-of-the-art H.265/HEVC hardware encoder by offering premium video quality with less data usage, and low end-to-end latency (down to 0.5 sec). The widely adopted H.264/AVC video format is supported as well for compliancy with deployed infrastructures.

The solution features multiple world-wide compliant embedded cellular modems with high efficiency patented custom antenna array: up to x6 3G/4G/5G or x8 3G/4G modems. For strengthening the signal transmission in critical environment, the PRO3 Series can be also combined with external AVIWEST's QUAD Antenna (passive antennas) or AVIWEST's QUAD CellLink (active 3G/4G active antennas). Additional links such as built-in Wi-Fi and Dual Gigabit Ethernet for streaming over LAN/WAN, BGAN, GX or Ka band Satellite are also natively supported.

With its high versatility and low consumption (up to 4 hours with external battery), the PRO3 Series is the ideal companion for on-the-go video professionals that need robust and reliable solution, with the ultimate performance and picture quality.



### SIMPLE

The PRO3 Series has been designed with ease-of-use in mind, the user-friendly intuitive interface allows broadcasting live videos in 2 touch screen taps.



### VERSATILE

Available in a compact ruggedized enclosure, the PRO3 Series offers standard V-Mount or Gold-Mount plate for direct mounting on professional cameras, but also comes with in a smart designed & compact backpack.



### HIGH PERFORMANCE

By implementing the best state-of-the-art H.265/HEVC hardware encoder in a compact design enclosure, the PRO3 Series enables video professionals to provide seamless high quality news and event coverage.



### ANY NETWORKS

The PRO3 Series supports the Emmy® award winning SST (Safe Stream Transport) and SRT (Secure Reliable Transport). They ensure the transport of live video in the midst of unpredictable and unmanaged networks. SST offers multi-cellular networks bonding, while SRT, an open source protocol, brings ultra-robust transmission over wired networks.

## PRODUCTS COMPARISON CHART

	PRO360-5G	PRO380	PRO340
Embedded cellular modems	6	8	4
Cellular networks	3G/4G/5G	3G/4G	3G/4G

# MAIN FUNCTIONS

## LIVE & AUTO-RECORD

Broadcast premium quality video live over bonded IP networks : 3G/4G/5G, Ethernet, Wi-Fi, and satellite networks such as BGAN, GX and Ka Band. Combined with the automatic record feature, you can simultaneously record this live on the pluggable SD card with different resolution and bitrate to ensure an optimal and constant video quality.

## REC & PROGRESSIVE FWD

Record broadcast-grade quality video on the SD card, and optimize your time by forwarding the file progressively whereas the record is still in progress. This forward approach enables fast and error-free video delivery.

## DATA BRIDGE

By leveraging the transmitter's aggregated networks connections, switch the unit to behave as a mobile router in order to benefit a high speed internet connection from anywhere.

## IFB & VIDEO RETURN

Ensure two-ways audio communication between the producer, production crews & on-air talent thanks to a seamless and robust intercom. Receive and watch high quality HD feed 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.

# MAIN SPECIFICATIONS

## VIDEO

<b>STANDARDS</b>	HD: 1080p25/29.97/30/50/59.94/60, 1080i50/59.94/60, 720p50/59.94/60 SD: PAL, NTSC
<b>ENCODING</b>	H.265/HEVC 4:2:0, 8-bit H.264/AVC 4:2:0, 8-bit Dynamic resolution adjustment
<b>BITRATES</b>	200 Kbps to 20 Mbps Constant Bitrate (CBR) Variable Bitrate (VBR)
<b>INPUTS</b>	SDI, HDMI

## AUDIO

<b>ENCODING</b>	AAC-LC
<b>BITRATES</b>	32 Kbps to 256 Kbps
<b>MODE</b>	Mono, Dual Mono or Stereo 2.0
<b>DENSITY</b>	Up to 4 channels
<b>INPUTS</b>	Embedded (SDI, HDMI), Analog (L/R)

## NETWORK CONNECTIONS

<b>CELLULAR</b>	6 x 3G/4G/5G or 8 x 3G/4G world-wide compliant modems with - Internal high efficiency antennas - External high efficiency antennas (AVIWEST QUAD Antenna arrays)
<b>ETHERNET</b>	Gigabit Ethernet port - LAN, WAN - portable satellite (BGAN, GX, Ka & Ku Band)
<b>WI-FI</b>	Dual band Wi-Fi modem 802.11 a/b/g/n/ac (2.4GHz and 5 GHz) - Client & Hot Spot modes - High-efficiency embedded antenna
<b>TRANSPORT PROTOCOLS</b>	SST over Cellular/Ethernet/Wi-Fi (bonding) SRT over Ethernet (caller and listener modes)

## ADVANCED FEATURES

<ul style="list-style-type: none"> <li>Dual encoding for simultaneous Live &amp; Record</li> <li>Sub second glass-to-glass latency (down to 500 ms)</li> <li>Video and Audio level preview</li> <li>Intercom /IFB</li> <li>Video return from Studio (full HD, sub-second latency)</li> <li>Automatic Live Start</li> <li>Network links priorities (user configurable)</li> <li>Data Bridge for switching the device as a mobile router</li> <li>Hot folder mode for enabling smart and automatic files Forward</li> <li>AES scrambling</li> <li>Geolocation (GPS and Galileo)</li> </ul>
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## INTERFACES

<ul style="list-style-type: none"> <li>1 x 3G-SDI input (BNC), 1 x 3G-SDI output (BNC)</li> <li>1 x HDMI 1.4 input, 1 x HDMI 1.4 output</li> <li>2 x RJ-45 Ethernet</li> <li>1 x USB 3.0 (type-A)</li> <li>4 / 6 / 8 x micro SIM slots</li> <li>8 MCX connectors on PRO340/PRO380 (for AVIWEST QUAD Antenna solution)</li> <li>1 x mini XLR (for IFB / intercom headset)</li> <li>2 x mini XLR balanced (for analog audio)</li> <li>1 x SD card slot</li> </ul>
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## CONTROL & MONITORING

<ul style="list-style-type: none"> <li>On screen display</li> <li>Web GUI (through laptop, smartphone, etc.)</li> <li>From AVIWEST MANAGER Management System</li> <li>From AVIWEST STREAMHUB Transceiver</li> </ul>
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## POWER

<b>POWER SUPPLY</b>	DC input 18V (XLR input hot swap) External battery with V-mount or Gold-mount plates
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<b>CONSUMPTION</b>	4 hours with battery (90Wh)
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## PHYSICAL

<b>DIMENSIONS (W x H x D)</b>	25,6 cm x 8,4 cm x 12,5 cm (10.07" x 3.30" x 4.92")
<b>WEIGHT</b>	1.4 Kg / 3.09 lbs
<b>OPERATION TEMPERATURE</b>	0°C to 45°C (32°F to 113°F)

# SYSTEM OVERVIEW

