

## AVENIRMini 5 Solutions Brief

### Executive Summary

AVENIR Mini 5 is a camera mountable live video encoder designed for mobile broadcasting in the field. The encoder provides enhanced bonded connectivity capabilities with significantly more efficient encoding for HD video. Engineered for easy integration and outstanding quality, the miniature, low-power device can be used with broadcast cameras for streaming video contribution.



### Overview

The integrated camera mountable system is a mobile hardware device that enables HD-SDI and **HDMI** video capture. Mini 5 is a small form factor, lightweight device weighing just **1.1 kg**, typically consuming 25 watts of power in standby to 60W with modem streaming for extended battery operations, and providing 0.5 to **20** Mbps of bandwidth. Mini 5 includes 5 internal cellular modems and support for up to 5 USB modems for enhanced flexibility in diverse use cases. A version without internal modems is also available.

Mini 5 performs as a dedicated portable encoder for live video transmissions, bonding any available network connections using the Streambox ACT-L3 (Advanced Compression Technology Level 3) codec and LDMP (Low Delay Multi-Path technology) to deliver high quality video with low latency. This combination delivers high quality video at significantly lower bitrates requiring less bandwidth than other systems.

The ACT-L3 codec provides faster encoding capable of compressing higher motion, complex video at lower data rates using the advanced motion search feature, and is optimized for video transmission over any low-bandwidth

IP connection.

LDMP supports low latency adaptive bitrate streaming over public and private networks, and enables Mini 5 to automatically select the best possible bandwidth, latency, and resolution over multiple IP networks, so the system is able to gracefully handle network bandwidth fluctuations and dropouts, which are often seen over public or shared network environments.

The AVENIR Mini 5 provides highly efficient encoding for HD broadcasting with first and last mile connectivity through seamless integration via Streambox decoders, Streambox Enterprise Server, or Streambox Cloud Services to receive, archive and route video for playout in local, regional or worldwide deployments.

By using existing cellular and other network data plans, Mini 5 helps lower monthly OpEx costs, compared to leasing extra equipment and services that include marked-up data plans. The Mini 5, with its superior video compression and transport, consumes up to 30% less data for HD video, helping to lower data consumption of live streaming news and events.





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## Benefits

- **Superior HD Video**  
Stream live video at lower bit rates with continuous high quality
- **Reliable Operation**  
LDMP transport supports multi-network bonding that delivers adaptive bitrate streaming over lower bandwidth cellular and WiFi networks
- **Flexible integration**  
Operates through 3G/4G, LTE, WiFi, LAN, BGAN, and USB mobile modems
- **Portable Device**  
Light weight encoder has extended battery life with remote management and configuration
- **Ease of Use**  
The user interface, mobile app, and LCD screen with LED status lights combination provides flexible options for ease of operation
- **Seamless Connectedness**  
HDMI and HD-SDI inputs, plug-in signal extender with additional modem, and industry standard V-mount or G-mount for batteries makes the system simple to deploy
- **Live Social Streaming**  
Send live video to Facebook, Twitter, YouTube, and websites, as well as on-air broadcasts
- **Remote Access**  
Capture and stream live action video from remote locations or situations that are difficult to reach
- **Lower Cost of Ownership**  
Utilize established cellular and network contracts with no need to pay for additional equipment and services

## Challenges

### Live Events

Capturing high quality action at live games or events and transmitting it to viewers can be a logistical and technical challenge. Streambox innovative codec and transport technologies permit users to set up quickly and reliably transport high quality media over a variety of low bandwidth connections as events unfold. Live event production crews are able to simulcast events from the field, stage, and other locations in full HD with the AVENIR Mini 5. production crews are able to simulcast events from the control room, stage, and other locations in full HD with the AVENIRMicro.

### News

Remote field reporters need to set up quickly and transmit full HD, low latency video over bonded 3G,4G, WiFi, Ethernet, SNG / DNG, and Internet networks. The AVENIR Mini 5 camera mountable mobile encoder is modular and stackable with five embedded modems.

## Impact

- Performance requirements are met with superior quality and reliability.
- Higher rates of transport and playback are achieved with minimal end-to-end latency even over various types of public internet networks to help reduce operating expenses.
- Easy integration makes acquiring live streaming video simple and cost-effective.
- Small, lightweight portability with cameras enables coverage of events from challenging environments.



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## AVENIRMini 5 Technical Specifications

Video Formats	HD: 1920x1080p, 1920x1080PsF, 1920x1080i, 1440x1080i, 1280x1080i, 960x1080i, 1280x720p, 960x720p, 800x720p, 640x720p
Audio Formats	4-ch PCM and AAC, CELP, GSM frequency up to 48 KHz
Network Interfaces	Up to 5X embedded 3G/4G/LTE modems and 2X external USB modems
LAN Formats	Gigabit Ethernet RJ-45, WiFi: 2.4/5GHz IEEE 802.11/a,b,g,n,ac
Antennas/RF	2X high gain antenna for 3G/4G/LTE 5X external SMA
Metadata	End user selectable: Title, Reporter, Location, Group
Audio In	Embedded SDI audio, HDMI audio
Video In	HD-SDI BNC and HDMI 2.0a Reference BNC
Video Out	HD-SDI BNC
Video Post-Filtering	Interlaced progressive post filtering including de-blocking, de-mosquito, and anti-aliasing
IFB Audio Support	3.5mm stereo
Forward Error	Reed-Solomon, Parity, Shuffle, adjustable from 0 to 50%
Color Profile	4:2:0, 4:2:2
Store & Forward	Support for store and forward server, live server, enterprise server, or decoder SFR
User Interface	Touch screen color LCD, or remote via web, iPhone, iPad, or Android device
Storage	16 GB eMMC solid state drive
Operation	One-click automation modes: Low Delay, Talking Head, and Reliable
Latency	User selectable: sub-second, 2 seconds, and up to 14 seconds
Network Protocol	LDMP 2.0, UDP, TCP
Dimensions	14 cm/5.5"W x 20cm/7.9"x 6 cm/2.3 H
Weight	1.1 kg/2.2 lb
Battery Life	1 to 4 hours depending on battery type
Power	AC 100-240V 50/60 Hz, DC 12-18V, 25W standby, 60W modem streaming, XLR 4 pin M (1:N, 4:P)
Accessories	AC adapter

