





LiveShot Portable

LiveShot

Comrex LiveShot $^{\text{TM}}$ delivers live video over a range of IP networks. LiveShot is used by TV stations and networks to deliver high quality, low latency video from anywhere Internet access is available. LiveShot leverages the success of Comrex ACCESS audio IP codecs and uses the same technology to smooth out the "bumps" on the public Internet to allow broadcast-quality live video streaming. LiveShot is especially optimized to perform well on challenging IP networks like 3G, 4G and satellite-based links.

Video

LiveShot encodes and decodes video to the H.264 codec standard, which is the state-of-the art codec for high quality video using low network bandwidth. For optimal video quality, LiveShot encodes with H.264 HIGH profile. Several other options within the H.264 standard, many of which are not implemented by competing products due to complexity, are default in LiveShot. All H.264 options that maximize quality over poor networks and decrease latency are implemented.

Audio

Comrex has years of experience encoding live, low latency audio over IP networks for broadcast, and LiveShot shows it. In addition to standard AAC audio coding, LiveShot utilizes HE-AAC and AAC-ELD audio coding, both reducing network bandwidth and lowering delay.

Latency

LiveShot can encode and decode an audio/video stream with less than 200mS delay. Delay may be higher based on encoding mode and network factors. LiveShot uses an automatic decoder buffer manager to keep delay to an absolute minimum. This technology was perfected over years of experience with the BRIC series of audio codecs.

Channels

LiveShot delivers full-duplex video and stereo audio between the field portable and studio rackmount systems. In addition, a full-duplex cue channel is available between the systems. On the portable, the return audio/video channel is delivered via output connectors, or streamed to a mobile device via the built-in Wi-Fi access point. The cue channel is accessible on the portable via wired headset.



LiveShot Connect Modems

Comrex has developed Connect Modems – pro-grade, high cellular performance data modems. To ensure that Comrex customers experience highest degree of broadcast reliable data transmission, each device comes in a ruggedized, industrial case with a carriercertified, high gain antenna (2.1 dBi) and sturdy, customized mounting hardware for LiveShot Portable. LiveShot Connect Modems are available for Verizon, AT&T, and international carriers.



Live Wireless Low-Latency Video Over IP



Control

LiveShot can be "driven" from the studio via the "LiveShot Central" Server, or it can be controlled locally via a web page delivered from its internal Wi-Fi access point. This Wi-Fi connection is independent from any media channel, and serves a web page optimized for mobile browsers. The LiveShot Control app also makes it easy for a user to adjust settings and monitor data from their smartphone.

Portable

LiveShot Portable is designed to be compact and lightweight. The unit is supplied with Anton Bauer-style Gold Mounts to sandwich between a professional video camera and a battery. The system can be powered from the battery or from an external AC power supply. Power consumption is 8 watts. Weight is 5 pounds.

Rackmount

The LiveShot Studio Rack unit is optimized for use in a studio or live truck environments as the "other side" of the LiveShot Portable. The Studio Rack has HD-SDI and Composite inputs and outputs and can also talk to any other Studio Rack unit making it perfect for flash studio or news bureau links.



LiveShot Studio Rackmount

Wireless

In addition to Ethernet connectivity, LiveShot can connect to to wireless modems with two USB ports. These ports can be used simultaneously to increase the bandwidth of wireless connections. LiveShot is supplied with a high-gain Wi-Fi USB adapter, and can support a wide range of 3G and 4G USB modems. With the built-in Ethernet port, connections can be made to Inmarsat satellite terminals.

LiveShot Portable

Dimensions: 5.5"H x 3"W x 5.625" L

Weight: 3lbs

Input Voltage: 8-20VDC

(Included power supply 15V 24W)

Battery Input: 12-17VDC

Power Consumption: 8W (not including external modems)

Ethernet: 10/100Base-T

Composite Video Input: CVBS 480i/576i Analog Audio In: +20dBu FS Stereo

HDMI Video Input: SD 480i/576i HD 720p 1080i **HD-SDI Video Input**: SD 480i/576i HD 720p 1080i

Composite Video Out: CVBS 480i/576i

Audio Encoder: AAC/HE-AAC/AAC-ELD 18Kb/s-512Kb/s **Video Encoder**: H.264 High Profile 256Kb/s-10Mb/s

Cue Audio Encoder: GSM 13Kb/s

Encode/Decode Delay: 200mS (not including network and buffer)

Operational Temperature Range: 0 to 50C Operational Humidity Range: 0 to 90%

LiveShot Rackmount

Dimensions: 1.75"H x 19"W x 9.5" L

Weight: 7.5lbs

Input Voltage: 110-240VAC 50/60Hz

Power Consumption: 8W **Ethernet**: 10/100Base-T

Composite Video Input: CVBS 480i/576i Analog Audio In/Out: +20dBu FS Stereo

AES3 Audio In and Out: Stereo

HD-SDI Video Input/Output: SD 480i/576i HD 720p 1080i

HDMI Video Output: SD 480i/576i HD 720p 1080i

Composite Video Out: CVBS 480i/576i

Cue Audio In/Out: 0dBU FS

Audio Encoder/Decoder: AAC/HE-AAC/AAC-ELD 18Kb/s-512Kb/s Video Encoder/Decoder: H.264 High Profile 256Kb/s-10Mb/s

Cue Audio Encoder/Decoder: GSM 13Kb/s

Encode/Decode Delay: 200mS (not including network and buffer)

Operational Temperature Range: 0 to 50C Operational Humidity Range: 0 to 90%