

BC8110 HD H.264 or AVS Airborne Encoder

The Telairity BC8110 is a high definition (HD) video encoder designed expressly for Helicopters and other aerial vehicles used in Electronic News Gathering (ENG). It uniquely combines leading-edge compression technology (either H.264/AVC or AVS) with outstanding encode latencies as low as 150ms, achieving more than twice the compression efficiency of the older MPEG-2 standard in true real time. It combines all the features of its companion BH8110 for ground ENG vehicles in a half-rack package specially designed to fit in helicopters and fixed-wing aerial ENG vehicles. The entire unit is ruggedized and runs on 28V DC current.



Front panel mounted in a small box (6" wide x 3" deep x 2" high) connected to main encoder body (8.625" wide x 28" deep x 1RU high) by a 25-foot remote control tether.

Features and Options

Video Encoding Features

- H.264/AVC - High (FRExt) Profile @ Level 4; or AVS-P2
- Input Video Formats: 720p and 1080i (autodetected on input); 1080p*
- Output Horizontal Resolutions: 720p x 960, 1280; 1080i x 1280, 1440, 1920
- Rate Control
 - Constant Bit Rate (CBR), Variable Bit Rate (VBR)
 - Bit rate : 2 - 15 Mbps
- Scene change detection
- Entropy Coding: CABAC or CAVLC per AVC or AVS profiles
- Spatial Preprocessing
- Deblocking (Loop) Filter

Audio Encoding Features

- HD-SDI embedded audio input – per SMPTE 299M
 - Four programs (stereo pairs)
 - Stereo, Dual Mono, Mono
- MPEG-1 Layer 2 or MPEG-4 AAC-LC encoding standards
 - Selectable on a per-channel basis
 - Bit rates: 64 to 384 Kbps
- External Inputs: 2 AES digital plus 2 analog stereo pairs
- Dolby Digital (AC-3) pass-through

Control Features

- On board Flash memory for fast program upload at boot
- Web browser control via Ethernet interface
- Rapid-reset Front Panel with "two-button" selection of 4 programmable profiles

Output

- 2 MPEG-2 transport streams over DVB – ASI
- 1 IP Transport stream with TOS over 10/100 Base-T Ethernet

BC8110 Aerial HD AVC/AVS Encoder for ENG

Applications

The Telairity BC8110 Real time Encoder Platform offers state-of-the-art AVC or AVS video compression in a compact and cost effective 1 RU form factor. It is expressly designed for aerial ENG use, with all vital features included standard.

Benefits

Compact 1RU system for broadcast quality video encoding

Based on the fully programmable Telairity-1 video architecture, with easy inter-conversion between AVC and AVS codecs; uses a simple control monitor for improved responsiveness, reliability, stability (no Windows or other complex OS)

True real-time encode latency (adjustable 150ms to 2000ms)

State-of-the-art H.264/AVC encoding to compress a quality HD signal into a half-channel (12Mbps)

"Instant on" two-second startup time

Simple profile-based "two button" front panel control

Slice-based video architecture for improved transmission robustness, fast signal lock-on

Automatic detection of input formats

Stutter-free operation on asynchronously switched inputs

Very wide temperature tolerance: +55 to -10 degrees Celsius

Ruggedized chassis; DC power supply; half-rack form factor designed to fit in helicopter baggage compartments; small tethered remote control panel

Ordering Information

Part Number: **BC8110**

Contents

- Bx8000-series Encoding Platform
- Power Cable: IEC to USA plug; optional Euro plug
- USB flash drive with backup copy of encoder firmware and manual

Requirements

- Web browser control system
- SDI input source video
 - HD SMPTE 292M
- Input cable
 - 75 Ohm coaxial with BNC connector
- Output cables (either or both)
 - 75 Ohm coaxial with BNC connector
 - Cat5/6 Ethernet with RJ-45 connector

Options

- Software upgradeable to BC8500 with auto-switching dual-mode HD/SD capability

About Telairity

Telairity, based in Santa Clara, California designs, manufactures and markets video processing solutions for broadcast and professional video applications. Telairity's breakthrough video architecture (Telairity-1™) is the powerful foundation for its real time encoding products which provide outstanding video quality and state-of-the-art video compression to achieve the lowest possible bit rates.

Telairity

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Video Input

Input Format:	High Definition – Serial Digital Interface (HD-SDI) SMPTE 292M
Video Input Formats:	4:2:2 for 720p, 1080i, 1080p30*
Frame Rates:	Frames per second: 1280 x 720p: 23.98, 24, 25, 29.97, 30, 50, 59.94, 60 1920 x 1080p: 23.98, 24, 25, 29.97, 30 Fields per second: 1920 x 1080i: 50, 59.94, 60
HD-SDI Video In:	1 BNC Connector
HD-SDI Loop Out:	1 BNC Connector

Audio Input

Input Format:	Embedded in HD-SDI per SMPTE 299M Dolby Digital (AC-3) pass-through External: 2 AES + 2 Analog stereo pairs
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Compressed A/V Output

Output Interfaces:	2 Digital Video Broadcast – Asynchronous Serial Interfaces (DVB-ASI), 270Mbps, buffered non-inverting 1 10/100 Base-T Ethernet
Packet Format:	MPEG-2 188 byte Transport Stream (TS) packets
Compression Format:	H.264/AVC High Profile, Level 4; or AVS-P2
Compressed Bitrates:	User programmable: 2 to 15 Mbps, CBR or VBR
ASI Stream Out:	2 BNC Connectors
IP Stream Out:	1 RJ-45 connector

Control

Control Application:	Web browser Interface over Ethernet
Direct Presets:	User-programmable front panel control
Alarms:	4 contact closures to detect failure of power supply or fan, over-temperature, 1 software-definable condition
SNMP:	Reporting Agent (option)

Power Specifications

Input voltage:	18 to 36 VDC (Auto sensing)
Power consumption:	225W DC

Mechanical Specifications

Dimensions & Weight:	1RU (H) x 9.5" (W) x 27" (D), 13lbs. (body) 2" (H) x 6" (W) x 3" (D), 1lb. (control panel)
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Environmental Specifications

Cooling:	Forced air-cooling, side to rear
Operating Temperature:	-10° to 55°C

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*all standard frame rates up to 30fps supported in progressive mode with firmware release 1.2.1 and higher