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Visibly Better

BC8110 1-Channel HD Aircraft 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 BE8110-T 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 to 30fps
- 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
- GOP mode: selectable fixed length or adaptive
- Spatial Preprocessing, Deblocking (Loop) Filter

Audio Encoding Features

- HD-SDI embedded audio input – per SMPTE 299M
  - Four programs (stereo pairs): choice of Stereo, Dual Mono, Mono
- MPEG-1 Layer 2 or MPEG-4 AAC-LC, AAC-HEv2 encoding standards
  - Selectable on a per-channel basis
  - Bit rates: 64 to 384 Kbps MPEG-1 L2; to 12 Kbps with AAC-HEv2
- External Inputs: 2 AES digital plus 2 analog stereo pairs
- Dolby Digital (AC-3) and Dolby E 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 over 10/100 Base-T Ethernet

BC8110 Aircraft
HD Encoder for ENG

Applications

The Telairity BC8110 Real time Encoder Platform offers state-of-the-art 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

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

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

Upgradeable to BC8500 with dual mode auto-switch HD/SD operation

Options

Breakout cables for external audio Inputs (2 digital, 2 analog)

Other Models

BE8110-T – Full-width 110-220VAC model for ENG trucks

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 H.264/AVC and other advanced encoding and transcoding solutions for broadcast and professional video applications. Telairity's breakthrough video architecture (Telairity-1™) is the foundation for all its real time encoding products, which combine outstanding video quality with state-of-the-art, video compression based on the AVC (H.264 / MPEG-4.10) standard to achieve the lowest possible bitrates.

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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 to 30fps
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 for source monitoring, redirection

Audio Input

Input Format:	Embedded in HD-SDI per SMPTE 299M Dolby Digital (AC-3) or Dolby E pass-through External input: 2 AES + 2 Analog stereo pairs

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 in either TS/UDP/IP or TS/RTP/UDP/IP with optional FEC
Compression Format:	H.264/AVC Main, 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
Status Monitoring:	Temperature, Power Supply operation, Input video errors
SNMP:	Reporting Agent (option)
Input voltage:	18 to 36 VDC (Auto sensing)
Power consumption:	225W DC
Dimensions:	1RU (H) x 9.5” (W with ears) x 27” (D) (body) 2” (H) x 6” (W) x 3” (D) (control panel)
Weight:	13 lbs. (body) & 1 lb. (control panel)
Cooling:	Forced air-cooling, side to rear
Operating Temperature:	-10° to 55°C