

BE8110 1-Channel HD Broadcast Encoder

The Telairity BE8110 is a scalable, fully programmable, low latency broadcast encoder for high definition (HD) video compression. The BE8110 uniquely combines leading-edge compression technology (either H.264/AVC or AVS) with an outstanding encode latency of less than 150ms, achieving more than twice the compression efficiency of the older MPEG-2 standard in true real time. Featuring “instant on” for immediate availability and simple “two button” front panel control for quick and easy field operation, the cost-effective BE8110 encoding platform addresses the critical needs of broadcasters for live streaming capability. It can be readily upgraded via software to add new features or enhance performance.



Features and Options

Video Encoding Features

- H.264/AVC – High (FRExt) Profile @ Level 4; or AVS-P2
- Input Video Formats: 720p and 1080i (auto-detected 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)
 - 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 for 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
- 2 IP Transport streams over 10/100 Base-T Ethernet

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Applications

The Telairity BE8110 Real time HD Encoder Platform offers state-of-the-art video compression in a compact and cost effective 1 RU form factor. Applications include:

- Live Streaming
- IPTV - ITV
- Surveillance / Monitoring
- Broadcast Distribution
 - Satellite / Cable / Terrestrial

Benefits

Compact 1RU system for broadcast quality video encoding

Based on the fully programmable Telairity-1 video architecture; easy downloadable software upgrades to improve quality, add new options, and convert between codecs MPEG-4 AAC-LC or –HE option for high audio quality at very low compressed bit rates; Dolby Digital, Dolby E pass-through also supported

Adjustable encode latencies (400-2000 ms)

Simple profile-based “two button” front panel control

“Instant on” two-second startup times

Options

Breakout cables for external audio inputs (digital and analog);

Composite input

Transcoding (MPEG-2, etc.)

G.703/E3 or DS3 output

Orion DVB-S/S2, DSNG modulator

Other Models

BE8110-T ruggedized version for field use in ENG trucks

BC8110 – Half-width 28VDC “copter” unit for aircraft

BE8200 – 2-channel model

BE8500 – Versatile 5-code model (8110 is field upgradeable to BE8500)

Ordering Information

Part Number: **BE8110, BE8110-T**

Contents

- BE8000-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 BH8500 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.

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, 1080p 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 In & Loop Out: 1 BNC Connector each

Audio Input

Input Format: Embedded in HD-SDI per SMPTE 299M
 Dolby Digital (AC-3) and 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
 2 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 format 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: 2 RJ-45 connectors

System

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: 100 to 240 VAC (Auto sensing)

Line frequency; Power: 47 to 63 Hz; 206W

Dimensions & Weight: 1RU (H) x 19" (W) x 18" (D) rack mountable, 18 lbs.

Weight: 18 lbs.

Cooling: Forced air-cooling, front to rear

Operating Temperature: -10° to 55°C



BE8110 back panel with G.703/E3 output option

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