telairity

Real-Time HD

BE8110-T Single-Channel HD ENG Encoder

The Telairity BE8110-T is a version of Telairity's BE8110 broadcast quality advanced compression HD encoder that has been specially modified for use in the harsh vehicle environments typical of Electronic/Satellite News Gathering (ENG/SNG) vans and trucks. It is tested for very wide temperature tolerance, with reliable operation from below freezing to desert temperatures. Special vibration-resistant construction helps it survive the jolts and jars of field use, while an ultra-low encode latency of 150ms eliminates any lag in communication between distant locations, enabling natural interactions between field and studio personnel. "Instant on" for immediate availability, simple "two button" front panel control for quick and easy field operation, and dual-redundant power supplies for added reliability complete the BE8110-T package.

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 selected profile
- 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

BE8110-T ENG
HD Encoder

Applications

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

- ENG / DSNG
- Surveillance / Monitoring
- Arenas / Stadiums
- Live remote broadcasting

Benefits

Rugged, compact 1RU system for broadcast-quality video encoding in ENG vehicles

Based on the fully programmable Telairity-1 video architecture; easy software upgrades to improve existing and add new features

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

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

Simple profile-based "two button" front panel control

"Instant on" startup/reboot times

Options

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

Other Models

BC8110 – For ENG use in aircraft (helicopters and fixed wing)

BE8110 & BE8200 – Single & Dual-channel broadcast models for studio use

All 8110 models are field-upgradeable to 8500 versions with HD/SD auto-switch capability

Ordering Information

Part Number: **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.

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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

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)

Power Specifications

Input voltage:	100 to 240 VAC (Auto sensing)
Line frequency; Power:	47 to 63 Hz; 206W

Mechanical Specifications

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

Environmental Specifications

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

BE8110-T back panel

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