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Visibly Better

BE8200 2-Channel HD Broadcast Encoder

The Telairity BE8200 is a fully programmable broadcast quality multichannel encoder for high definition video formats. It combines Telairity's uniquely powerful hardware and software technology with leading-edge video compression (either H.264/AVC or AVS) to achieve industry-leading video quality at very low bit rates, below 6Mbps for HD formats. The multichannel BE8200 encoding platform addresses the need of today's broadcasters to improve system density while lowering per-channel costs wherever more than one HD channel is required. Featuring Telairity's unique "instant on" technology, the BE8200 can be readily upgraded via a software download to add new features or enhance performance.

Applications

The Telairity BE8200 multichannel HD encoder platform offers state of the art AVC or AVS video compression for HD television formats in a cost-effective, 1 RU form factor. It excels at low bit rates, and is targeted to applications where low bit rates are needed and multiple channels must be accommodated in a 1RU rack space.

Benefits

Space saving compact 1RU design

Handles two independent HD channels, with up to 4 stereo audio programs per video channel

Based on the fully programmable Telairity-1 video architecture; full software upgradeability via Internet download for easy maintenance and improvements

MPEG-4 AAC-LC and –HE options for high audio quality at very low bit rates; Dolby Digital (AC-3) and Dolby E pass-through also supported

Unique Telairity "Instant on" startup and restart times

Adjustable encode latencies from 400 to 2000 milliseconds

Support for 1080p input formats to 30fps

Non-stop design with dual redundant power supplies

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

Single channel units available for broadcast, ENG trucks, helicopters, etc. 1U x 19" x 18" with front panel control: **BE8110, BE8110-T, BC8110, BE8500**

Features and Options

Video Encoding Features

- 2 fully independent HD channels with separate I/O connectors
  - SDI input and source loop-out with dual ASI and dual IP outputs
- Codecs: H.264/AVC High (FRExt) profile @ Level 4; or AVS-P2
- Input Formats: 1080i or 720p (auto-detected on input); 1080p to 30fps
- Output Horizontal Resolutions: 720p x 960/1280; 1080i x 1920/1440/1280
- Rate Control – 2 to 15 Mbps
  - Constant Bit Rate (CBR), Variable Bit Rate (VBR)
- Scene change detection
- Entropy Coding: CABAC or CAVLC per AVC or AVS profiles
- GOP Mode: selectable fixed length or adaptive
- Adjustable Spatial Preprocessing and Deblocking (Loop) Filters

Audio Encoding Features (per channel)

- HD-SDI embedded audio input – per SMPTE 299M
  - Four programs (stereo pairs) per channel: Stereo, Dual Mono, Mono
- MPEG-1 Layer 2 encoding, bit rates: 64 to 384 Kbps
  - MPEG-4 AAC-LC or –HEv2 for higher quality or lower bit rates (to 12 Kbps)
- 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

Output (per channel)

- 2 MPEG-2 transport streams over DVB-ASI 75 ohm coax
- 2 IP transport streams over 10/100 Base-T Ethernet

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Ordering Information

Part Numbers:

BE8200

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
  - SD SMPTE 259M
  - HD SMPTE 292M

- Input cables
  - 75 Ohm coaxial with BNC connector
  - Composite or component (SD)

- Output cables (either or both)
  - 75 Ohm coaxial with BNC connector
  - Cat5/6 Ethernet with RJ-45 connector

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.

Video Inputs (maximum of 1 per channel)

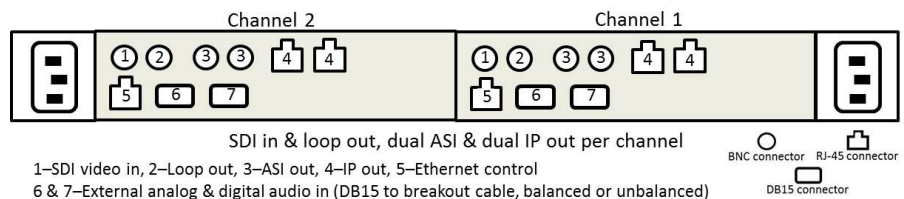|	
Input Format Options:	2 HD-SDI (SMPTE 292M) inputs
Video Input Formats:	4:2:2 for 1080i, 1080p, 720p
Frame Rates:	60*, 59.94*, 50*, 30, 29.97, 25, 24, 23.98 fps (*720p only)
Video In:	1 BNC/channel for 75 ohm coax (SD or HD)
SDI Loop Out:	1 BNC/channel (loop out for monitoring, redirection)

Audio Input

Input Format:	Embedded in SDI per SMPTE 299M Dolby Digital (AC-3) and Dolby E pass-through External Audio: 2 digital AES + 2 analog L/R stereo pairs per channel (cables optional)

Compressed A/V Output

Output Interface:	Digital Video Broadcast – Asynchronous Serial Interface (DVB-ASI), 270Mbps, buffered non-inverting 10/100 Base-T Ethernet for IP
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 Profiles: High Profile (Level 4); AVS-P2
Compressed Bitrates:	User programmable, CBR or VBR, 2-15 Mbps/channel HD
ASI Stream Out:	Twist-lock BNC connectors (2 per channel)
IP Stream Out:	RJ-45 connectors (2 per channel)

System

Interface:	1 Ethernet control interface per channel with RJ-45 connector via hub (or switch) to Web browser controller
Control Application:	Web browser Interface over Ethernet
Network Management:	Telairity NMS or standard SNMP
Input voltage:	100 to 240 VAC (Auto sensing)
Line frequency, Power:	47 to 63 Hz; 390 Watts maximum
Dimensions & Weight:	1RU (H) x 19" (W) x 28" (D) rack mountable, 25 lbs.
Cooling:	Forced air-cooling side to side
Operating Temperature:	-10° to 55°C

Channel 2   Channel 1

SDI in & loop out, dual ASI & dual IP out per channel

BNC connector   RJ-45 connector

1–SDI video in, 2–Loop out, 3–ASI out, 4–IP out, 5–Ethernet control
6 & 7–External analog & digital audio in (DB15 to breakout cable, balanced or unbalanced)

DB15 connector

BE8200-Back Panel – Standard I/O Configuration – Dual-redundant Power Supplies

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