

BE8700 Multi-Channel HD/SD Encoders

The Telairity BE8700 multichannel system (available in configurations of 1 to 4 channels) is a scalable, fully programmable broadcast quality encoder for high and standard definition video formats; able to autosense input type and select a corresponding HD/SD encoding mode automatically. Telairity's uniquely powerful technology generates leading-edge H.264/AVC video compression to achieve industry-leading video quality at very low bit rates for maximum transmission and storage efficiency. The 1RU BE8700 multi-channel platform also minimizes rack space to further reduce per-channel costs. The BE8700 can be readily upgraded via a software download to add new features or enhance performance.



Features and Options

H.264/AVC Video Encoding Features

Formats	HD	SD
Profile*	H.264 High @ L4	H.264 High @ L4
Input Lines	1080i/p 720p	576i (PAL*), 480i (NTSC**)
Output Widths	Same as input	Same as input
Mbps rates	1-15 (4:2:0)	0.1-8 (4:2:0)

*Includes PAL B, G, H, I, D/K, N; PAL M; **NTSC-M, NTSC-J

- Auto-detection of HD/SD Input; Auto-selection of Corresponding Output Format
- Up to 4 fully independent channels with individual ASI and multiplexed IP outputs
- SDI source input; uncompressed SDI loop-out for monitoring, redirection
- Single ASI, Dual GigE compressed outputs per channel; both GigE outputs multiplexed
- Rate Control: Constant Bit Rate (CBR) or Variable Bit Rate (VBR)
- Output Formats: 16:9 & 4:3
- Scene Change Detection
- Entropy Coding: CABAC
- Adjustable Preprocessing: Auto, Low, Medium, High

Audio Encoding Features (per channel)

- HD / SD-SDI embedded audio input – per SMPTE 299M / 272M-2004
 - Eight programs (stereo pairs): Stereo, Dual Mono, Mono
- MPEG-1 Layer 2 or MPEG-2/MPEG-4 AAC LC, HE-AAC, HE-AACv2 encoding
 - Selectable on a per-program basis
 - Bit rates: 384-64Kbps MP2, AAC LC; 128-16Kbps HE; 64-12Kbps HE v2
- Dolby Digital / AC-3 and Dolby E pass-through

Control Features

- On-board Flash memory for fast program upload at boot (“instant on”)
- Web browser control via Ethernet interface; simple SNMP integration

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Applications

The Telairity BE8700 multichannel HD & SD encoding platform offers state of the art video compression for all HD & SD television formats in a cost-effective, 1 RU form factor. It excels at low bit rates, and is ideal for IPTV, ITV, and other applications where the lowest bit rates are needed and multiple channels must be accommodated.

Benefits

Space-saving compact 1RU non-stop design with dual redundant power supplies

Based on the programmable TVP video architecture; fully upgradeable in software; simple control monitor for improved responsiveness, reliability, stability (no Windows/Linux or other complex OS)

Handles 1-4 independent auto-configuring HD/SD channels, with up to 8 stereo audio programs (16 channels) per video channel

Auto-detection of inputs with auto-selection of corresponding HD or SD outputs

Industry-leading video quality at low bitrates for all HD and SD formats

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

608 SD (line 21 SD 608) & 708 HD closed captions; EBU and DVB subtitles

Supports all digital broadcast standards, including ATSC, DVB-S/S2/SH, DVB-C, DVB-T/T2, DVB-H, CMMB, ISDB-T, DTMB/DTMB-A

Other Models

BE8600 Single channel with front panel control in a half-width 1RU chassis

BE8620 Dual BE8600 mounted side-by-side in a full-width 1RU chassis

Broadcaster Companion 1RU system for repackaging/resizing IP outputs to service multiple OTT or other IP clients

Ordering Information

Part Numbers:

BE8710 – 1 Channel Model

BE8720 – 2 Channel Model

BE8730 – 3 Channel Model

BE8740 – 4 Channel Model

Contents

- BE8700-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
- 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.

Telairity

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Network Compatibility

Inputs: 1 to 4 HD-SDI or SD-SDI
Outputs: 1 SDI/channel (source loop-out); 1 separate ASI/channel; 2 multiplexed IP/channel

Video Inputs

Input Format Options: High or Standard Definition – Serial Digital Interface (HD-SDI SMPTE 292M; SD-SDI SMPTE 259M-2008)
Video Source Inputs: 4:2:2 for HD (720p, 1080i, 1080p30) or SD (576i, 480i)
Frame Rates: Frames per second in progressive mode: 23.98, 24, 25, 29.97, 30, 50*, 59.94*, 60*
*720p only
Fields per second in interlaced mode: 50, 59.94, 60
Connectors: BNC for 75 ohm coax (SDI, ASI)
RJ-45 for Cat5/6 (Ethernet)

Audio Input

Input Format: Embedded in SDI per SMPTE 272M (SD)
Dolby Digital (AC-3) and Dolby E pass-through

Compressed A/V Output

Output Interface: Digital Video Broadcast – Asynchronous Serial Interface (DVB-ASI), 270Mbps, buffered non-inverting
10/100/1000 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 Formats: Profiles: H.264 – High
Compressed Bitrates: User programmable, CBR or VBR; 1 to 15 Mbps/channel
ASI Stream Out: Twist-lock BNC connectors (1 per channel)
IP Stream Out: RJ-45 connectors (2 multiplexed)

System

Interface: 1 Ethernet control interface with RJ-45 connector
Status Monitoring: Temperature, Power Supply operation, Input video errors
Control Application: Web browser Interface over Ethernet
Network Management: SNMPv1 v2 supported with Telairity MIB
Input Voltage: 100 to 240 VAC (Auto sensing); dual-redundant power supplies
Line Frequency, Power: 47 to 63 Hz; 230 Watts typical (4 channels)
Dimensions & Weight: 1RU (H) x 17" (W) x 17.25" (D) rack mountable, 18 lbs.
Cooling: Forced air-cooling front to rear
Operating Environment: -10° to 55°C; 5-95% humidity (non-condensing)



BE8740 HD/SD Encoder Back Panel (4-channel configuration)

Per-channel Outputs: 1 SDI source loop-out; dual multiplexed GigE; 1 individual ASI

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