

BE8600 1RU Half-Width 1-Channel HD/SD Encoder

Next-Generation – 250ms Latency – Low Power – High Performance

The Telairity BE8600 is a small and powerful real-time video encoder combining leading edge HD/SD H.264/AVC encoding for the highest possible picture quality with a low latency of 250ms. Featuring both 4:2:2 and 4:2:0 formats for HD and 4:2:0 format for SD, the BE8600 is designed to generate contribution-quality video either for HD archiving or HD/SD transmission over bandwidth-constrained contribution links or direct-to-viewer distribution over MPEG-4 networks. Based on Telairity's unique TVP840 hardware encoding technology, and enhanced by distinctive Telairity features like "instant on" for immediate availability and "two button" profile-based front panel control for quick and easy field operation, the cost-effective BE8600 addresses the critical needs of broadcasters for a highly reliable platform with the size to go anywhere, low latency, contribution picture quality, minimal bandwidth requirements, and low power consumption. Like all Telairity encoders, it can be easily maintained and upgraded via a simple firmware download.



Features and Options

H.264/AVC Video Encoding Features

Formats	HD	SD
Profile*	H.264 High @ L4	H.264 High, Baseline @ L3
Input Lines	1080i/p 720p	576i (PAL*), 480i (NTSC**)
Output Widths	Same as input	Same as input
Mbps rates	1-15 (4:2:0), 1-25 (4:2:2)	0.1-8.0 (4:2:0)

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

- Choice of: Constant Bit Rate (CBR) or Variable Bit Rate (VBR)
- Scene change detection
- Entropy Coding: CABAC
- Adjustable Preprocessing: Auto, Low, Medium, High

Audio Encoding Features

- HD / SD-SDI embedded audio input – per SMPTE 299M
 - 16 Channels / 8 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
- Web browser control via Ethernet, Encoder/Network Management Systems
- Rapid-reset Front Panel with "two-button" selection of 4 programmable profiles

BE8600 4:2:0 & 4:2:2 H.264/AVC HD/SD Encoder

Applications

The Telairity BE8600 Real Time Encoder Platform offers state-of-the-art H.264/AVC video compression in a compact and cost effective half-width 1 RU form factor. It is designed to encompass the widest possible variety of HD/SD real-time contribution and distribution encoding needs, including the most demanding low-latency applications, as well as all high-performance ENG, DSNG, mobile, and studio encoding needs.

Benefits

Compact half-width 1RU system for broadcast quality video encoding

Based on the next-generation fully programmable TVP video architecture for low-latency, low-power, small-footprint; uses a simple control monitor for improved responsiveness, reliability, stability (no Windows, Linux, or other complex OS)

True real-time encode latency

State-of-the-art H.264/AVC encoding to compress HD signals below 5 Mbps, SD signals below 1.25 Mbps

4:2:2 input; selectable 4:2:0 or 4:2:2 output

EBU and DVB subtitles; Closed Caption

"Instant on" startup, reset times

Field upgradeable via firmware download

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

Options

Mount 2 BE8600 units side-by-side in a full-width 1RU slot for dual channel capability or ready backup

Companion ½ width 1 RU Orion Modulator for DVB-S/S2, DSNG

Companion ½ width 1 RU Broadcaster for repackaging/resizing IP outputs for OTT or servicing multiple types of client devices

Ordering Information

Part Number: **BE8600**

Full-width 1RU options

BE8620 – Dual BE8600s

BE8650 – companion Modulator

BE8680 – companion Broadcaster

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-2008
 - 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

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 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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Output

DVB-ASI: 1 MPEG-2 Transport Stream
10/100 Base-T Ethernet: 1 IP Transport Streams over 10/100 Base-T Ethernet

Video Inputs

Formats: High Definition – Serial Digital Interface (HD-SDI SMPTE 292M)
Modes: 4:2:2 for HD (720p/60, 1080i/60, 1080p/30)
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
SDI Connectors: 1 BNC in, 1 BNC source loop-out (for monitoring/redirection)

Audio Inputs

Formats: Embedded per SMPTE 299M (HD-SDI)
Dolby Digital / AC-3, or Dolby E pass-through

Compressed A/V Output

Formats & Bitrates:

Interfaces: 1 Digital Video Broadcast – Asynchronous Serial Interfaces (DVB-ASI), 270Mbps, buffered non-inverting
1 10/100 Base-T Ethernet

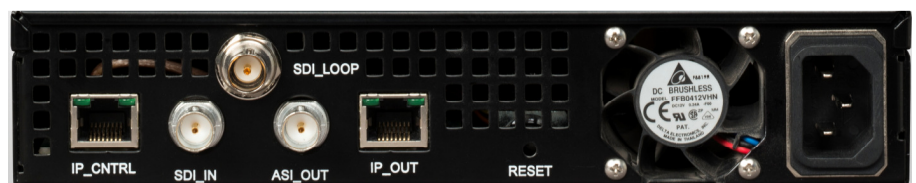
Connectors: 1 BNC (ASI out), 1 RJ-45 (IP out)

H.264/AVC	HD	HD
	4:2:0	4:2:2
	2-15Mbps	5-75Mbps

Packet Structure: MPEG-2 188 byte Transport Stream packets in either: TS/UDP/IP or TS/RTP/UDP/IP format with selectable pro-MPEG FEC

System

Control Application: Web browser Interface over Ethernet; Optional EMS/NMS
Direct Presets: User-programmable front panel control
Status Monitoring: Temperature, Power Supply operation, Input video errors
SNMP: SNMPv1 v2 supported with Telairity MIB
AC power: 100 to 240 VAC (Auto sensing); 47 to 63 Hz; 58W
Dimensions & Weight: 1RU (H) x 8.5" (W) x 12" (D) rack mountable, 5 lbs.
Cooling: Forced air-cooling, front to rear
Temperature / Humidity: -10° to 55° C operation / 20% to 95% non-condensing



BE8600 back panel

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