

BE8500 Versatile HD/SD H.264/AVC Encoder

The Telairity BE8500 is a versatile video encoder, able to autosense either HD or SD input video formats, and automatically select a corresponding encoding mode. It combines leading-edge H.264/AVC (MPEG-4) compression technology, capable of achieving more than twice the compression efficiency of the older MPEG-2 standard, with settable encode latencies ranging from 150ms to 2 seconds. Featuring “instant on” for immediate availability, simple “two button” front panel control for quick and easy field operation, wide temperature tolerance, optional dual redundant power supplies and optional external audio inputs (AES and analog stereo), the cost-effective and reliable BE8500 addresses the critical needs of broadcasters for flexible encoding.



BE8500 Versatile HD-SD AVC Encoder

Applications

The Telairity BE8500 Real time Encoder Platform offers state-of-the-art AVC/H.264 video compression in a compact and cost effective 1 RU form factor. It is expressly designed to flexibly encompass a wide variety of HD and SD encoding needs.

Benefits

Compact 1RU system for broadcast quality video encoding

Based on the fully programmable Telairity-1 video architecture, uses a simple control monitor for improved responsiveness, reliability, stability (no Windows or other complex OS)

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

State-of-the-art H.264/AVC encoding to compress HD signals below 6Mbps, SD signals below 1Mbps

“Instant on” two-second startup, one-second restart times

Simple profile-based “two button” front panel control

Slice-based video architecture for improved transmission robustness

Automatic detection of input formats with auto-selection of corresponding output formats

Stutter-free operation on asynchronously switched inputs

Very wide temperature tolerance: +55 to -10 degrees Celsius

Optional External Audio Inputs – 2 AES digital and 2 analog stereo pairs (plus 4 Contact Closure Alarms)

Optional dual-redundant power supplies

Features and Options

H.264/AVC Video Encoding Features

	HD Formats			SD Formats
Profile	High (FRExt) @ Level 4			Main @ Level 3
Input Lines	1080i/p30	↔	720p	576i (PAL), 480i (NTSC)
Output Widths	1920, 1440	1280	960	720, 640, 544, 480, 352, CIF
Bit Rates	2-15Mbps			1Mbps-8Mbps

- Autodetection of Input Format; Autoselection of Corresponding Output Format
- Rate Control
 - Constant Bit Rate (CBR) or Variable Bit Rate (VBR)
- Scene Change Detection
- Context Adaptive Binary Arithmetic entropy Coding: CABAC
- Adjustable Spatial Preprocessing and Deblocking (Loop) Filters

Audio Encoding Features

- HD / SD-SDI embedded audio input – per SMPTE 299M / 272M
 - Four programs (stereo pairs)
 - Stereo, Dual Mono, Mono
- MPEG-1 Layer 2 or MPEG-4 AAC-LC encoding standards
 - Selectable on a per-program basis
 - Bit rates: 32-384 Kbps
- Dolby Digital (AC-3) 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

Ordering Information

Part Number: **BE8500**

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 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 video processing 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 or Standard Definition – Serial Digital Interface (HD-SDI SMPTE 292M; SD-SDI SMPTE 259M)

Video Input Formats: 4:2:2 for HD (720p, 1080i/p30) or SD (576i, 480i)

Frame Rates: Frames per second: progressive mode
 720p only 23.98, 24, 25, 29.97, 30, 50, 59.94*, 60*

Fields per second: interlaced mode
 50, 59.94, 60

HD / SD-SDI Video In: 1 BNC Connector
 HD / SD-SDI Loop Out: 1 BNC Connector

Audio Input

Input Format: Embedded per SMPTE 299M (HD-SDI); 272M (SD-SDI)
 Dolby Digital (AC-3) pass-through
 External option: 2 AES digital + 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 Profile: High, Level 4 (HD); Main, Level 3 (SD)

Compressed Bitrates: User programmable: CBR or VBR
 2-15Mbps HD, 1-8Mbps SD

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
 Alarms: 4 contact closures to detect failure of power supply or fan, over-temperature, 1 software-definable condition

SNMP: Reporting Agent (option)

Power Specifications

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



BE8500 back panel

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