

BH8100 HD H.264/AVC Backhaul Encoder

The Telairity BH8100 is a high definition (HD) video encoder designed expressly for Electronic News Gathering (ENG) and other backhaul applications. It uniquely combines leading-edge H.264/AVC (MPEG-4) compression technology with an outstanding encode latency of 150ms, achieving more than twice the compression efficiency of the older MPEG-2 standard in true real time. Featuring “instant on” for immediate availability, simple “two button” front panel control for quick and easy field operation, wide temperature tolerance, standard dual redundant power supplies and external AES plus analog audio inputs, the cost-effective and reliable BH8100 addresses the critical needs of broadcasters for remote live interactive capability.



Features and Options

Video Encoding Features

- H.264/AVC - High (FRExt) Profile @ Level 4
- Video Formats: 720p and 1080i (autodetected on input)
- Horizontal Resolutions: 720p x 640*, 960, 1280; 1080i x 960*, 1280, 1440, 1920
- Rate Control
 - Constant Bit Rate (CBR), Variable Bit Rate (VBR)
 - Bit rate : 2 - 20 Mbps
- Scene change detection
- Context Adaptive Binary Arithmetic entropy Coding: CABAC
- 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 encoding standards
 - Selectable on a per-channel basis
 - Bit rates: 32 to 384 Kbps
- External Inputs: 2 AES plus 2 analog stereo pairs
- Dolby Digital (AC-3), Dolby E* pass-through

Control Features

- On board Flash memory for fast program upload at boot
- PC control application via Ethernet interface or Web browser
- Rapid Access Front Panel with “two-button” selection of 4 preset encoding profiles

Output

- 2 MPEG-2 transport streams over DVB – ASI
- 1 IP Transport stream over 10/100 Base-T Ethernet

BH8100 BackHaul HD AVC Encoder

Applications

The Telairity BH8100 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 for news, sports and other backhaul applications, with all vital features included standard.

Benefits

Compact 1RU system for broadcast quality video encoding, optimal 18 inch depth for truck racks

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 encode latency (150ms)

State-of-the-art H.264/AVC encoding to compress a quality HD signal into a half-channel (12Mbps)

“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

Stutter-free operation on asynchronously switched inputs

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

Per-program selection of audio encoding standard

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

Dual-redundant power supplies

Ordering Information

Part Number: **BH8100**

Contents

- BE8000-series Encoding Platform
- Power Cable: IEC to USA plug; optional Euro plug
- Controller Installation CD

Requirements

- Pentium or equivalent Windows PC
- 256 MB RAM, 100 MB Hard Disk
- Telairity PC controller application (supplied with encoder on CD)
- Browser Interface

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 powerful foundation for its real time encoding products which provide outstanding video quality and state-of-the-art, video compression based on the AVC (H.264 / MPEG-4.10) standard.

Telairity

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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, 1080p30*, 1080i

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

Audio Input

Input Format: Embedded in HD-SDI per SMPTE 299M
 Dolby Digital, Dolby E pass-through
 External: 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
 1 10/100 Base-T Ethernet

Packet Format: MPEG-2 188 byte Transport Stream (TS) packets

Compression Format: H.264/AVC High Profile, Level 4

Compressed Bitrates: User programmable: 2 to 20 Mbps, CBR or VBR

ASI Stream Out: 2 BNC Connectors
 IP Stream Out: 1 RJ-45 connector

Control

PC Control Application: Telairity Graphical User Interface (GUI) over Ethernet with RJ-45 connectors

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

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



BH8100 back panel

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* planned extension—consult factory for availability