TANDBERG television

ENCODING & VIDEO PROCESSING

EN8090
HD MPEG-4 AVC Encoder

Achieving the best picture quality at the lowest bit-rate enables operators to broadcast more channels in their available bandwidth over digital cable, satellite and terrestrial networks maximising return on investment of this valuable resource. For Broadband operators offering TV services over xDSL networks achieving the lowest bit-rate can providing multiple simultaneous services into the home, or be used to extend the loop length over which TV services can be carried from the DSLAM to the consumers home, maximising return on network investment.

TANDBERG Television has always lead the market in providing encoding platforms that give optimum quality at the lowest possible bit-rates. Following on from TANDBERG Television's award winning EN5990, the EN8090 is TANDBERG Television's second generation HD MPEG-4 AVC encoder. A dedicated hardware and software implementation, based on over 10 years in-house experience of creating high performance real-time encoders.

PRODUCT OVERVIEW

Market Leading Performance

Extensive video pre-processing help get the best picture whatever the source. A proven history of providing customers with in-field performance improvement upgrades over time, keeps our customers ahead of the market.

Reliable Service Delivery for any Application

Designed with all the proven system interconnect and control that our MPEG-2 product range enjoys today. In combination with the rest of the TANDBERG Television product range this makes MPEG-4 AVC deployable today in any broadcast or broadband application.

Advanced Features for IPTV

Options for encoding of a low resolution, low bit-rate simultaneous Picture-in-Picture (PIP) service, and direct IP multicasting from the encoder enable the EN8090 to be deployed in any IP distribution or TV over xDSL application.

Variable Bit-Rate Operation Modes

Option for standalone variable bit-rate operation allow IPTV operators to maximize picture quality while harvesting capacity for Internet data traffic delivery to the home. Option for Reflex statistical multiplexing enable Satellite, Cable and Terrestrial operators to maximize picture quality using bit-rate sharing techniques.

BASE UNIT FEATURES

EN8090 Encoder (EN8090/BAS)

- MPEG-4 AVC real-time video encoding.
- High profile at Level 4 (HP@L4).
- HD-SDI video input.
- Extensive video pre-processing including:
  - Noise reduction (option).
  - Resolution changing.
- Constant bit-rate encoding from 1 Mbit/s to 20 Mbit/s.
- Variable bit-rate and Reflex™ statistical multiplexing support (option).
- Stereo Audio encoding:
  - MPEG Layer II and Dolby Digital®.
  - Options for advanced audio encoding.
  - Digital, analog and HDSDI embedded inputs.
- Control and monitoring via web browser, the front panel or TANDBERG nCompass Control.
- MPEG-2 transport stream (ASI) output.

EN8090 Encoder (EN8090/BAS/48V)

- As EN8090/BAS except with –48Vdc power supply.

SOFTWARE OPTIONS

Professional Grade Noise Reduction (EN8000/SWO/NR)

- Improve picture quality and reduce bit-rate requirement.
- Fully adaptive spatial, temporal noise reduction.

MPEG-2 AAC-LC Advanced Audio Coding (EN8000/SWO/MPEG2/AAC)

- Enables 4 stereo pairs or 5.1 surround sound and 1 stereo pair of MPEG-2 AAC-LC (Low Complexity) audio encoding.

MPEG-4 HE-AAC Advanced Audio Coding (EN8000/SWO/MPEG4/HEAAC)

- Contact TANDBERG Television for availability.
- Enables 4 stereo pairs or 5.1 surround sound and 1 stereo pair of MPEG-4 (High Efficiency) HE-AACv1 audio encoding.

Variable Bit-rate Operation (EN8000/SWO/REFLEX)

- Enables Reflex statistical multiplexing between multiple encoders as part of a multiplex based system.
- Enables standalone automatic variable bit-rate video at a fixed quality setting for optimum bandwidth usage.
- User configurable target quality and maximum bit-rate allow optimization of bit-rate harvesting for other applications.

Simultaneous Picture-in-Picture Video Service Encoding (EN8000/SWO/PIP)

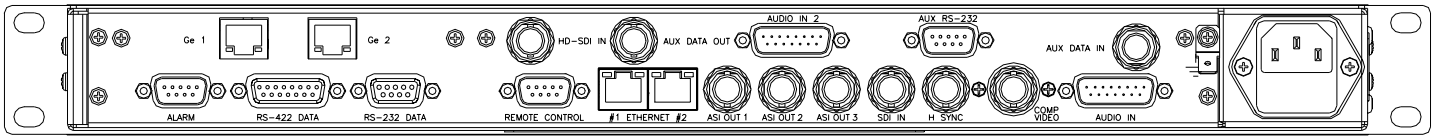
- Simultaneous encoding of low resolution version of main video service.
- MPEG-4 AVC real-time encoding.
- User selectable resolution and bit-rate.
- Single box solution for PIP functionality in IPTV applications.

HARDWARE OPTIONS

Dual Port IP Transport Stream Output (EN8000/HWO/IPTSDUAL)

- UDP/IP or RTP/UDP/IP encapsulation of MPEG-2 transport stream output.
- Dual port 100/1000Base-T Ethernet physical interface.
- CBR or VBR multicast outputs.
- User configurable network and multicast parameters.

SAMPLE CONFIGURATION



SPECIFICATIONS

Inputs

Video
HD-SDI serial digital video with EDH error detection and health monitoring

Audio
2 stereo pairs input via analog audio balanced 600Ω/20kΩ or AES-EBU or HDSDI

Up to 4 stereo pairs can be de-embedded from HDSDI

Studio Reference
625 and 525 line HSYNC

Outputs

MPEG Transport Stream
DVB-ASI (3 ports)

MPEG-TS over IP (100/1000BaseT 2 ports) (option)

Video Encoder

MPEG-4 AVC Video Compression
High profile at level 4 (HP@L4)

1 Mbits/s to 20 Mbits/s

Interlace & Progressive encoding support

Picture-in-Picture (option)
MPEG-4 AVC MP@L3 Progressive encoding

User selectable resolution and bit-rate

Supported Video Resolutions

1080 x 1920/1440/1280/960pSF 25

1080 x 1920/1440/1280/960i 25

1080 x 1920/1440/1280/960i 29.97

1080 x 1920/1440/1280/960i 30

720 x 1280/960p 50

720 x 1280/960p 59.94

720 x 1280/960p 60

Audio Encoder

MPEG Layer II

Dolby Digital

MPEG-2 AAC-LC (option)

MPEG-4 HE-AAC (option, check availability)

Up to 2 stereo pairs audio encoding

Advanced Video Pre-processing

TANDBERG adaptive spatial and temporal noise reduction (option)

Closed Captioning extraction from VBI

Image resizing (multiple resolutions)

Professional grade de-interlacer

Features

Easy-to-use front panel control

Web based control

Auto frame-rate input switching

Simple pre-configured set ups

Accurate bit-rate control

No frame loss guarantee

Physical and Power

Dimensions (w x d x h)
442.5 x 545 x 44.5mm (17.5” x 20.7” x 1RU)

Approximate Weight
7.5kg

Power Input
100 – 120 Vac or 220 – 240 Vac wide ranging, or -48Vdc

Environmental Conditions

Operating Temperature
-10°C to 50°C (14°F to 122°F)

Compliance

CE marked in accordance with EU Low Voltage and EMC Directives

EMC Compliance: EN55022, EN55024, AS/NZS3548, EN61000-3-2 and FCC CFR47 Part 15B Class A

Safety Compliance: EN60950, IE60950

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