ERICSSON

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MPEG-4 AVC Standard Definition 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 - maximizing return on investment of this valuable resource. For broadband operators offering TV services over xDSL networks achieving the lowest bit-rate can provide 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 - maximizing return on network investment.

Ericsson has always led the market in providing encoding platforms that give optimum quality at the lowest possible bit-rates. Following on from Ericsson's award-winning EN5930, the EN8032 is our second-generation SD MPEG-4 AVC encoder. A dedicated hardware and software implementation, based on over ten years in-house experience of creating high performance real-time encoders.

PRODUCT OVERVIEW

Market Leading Performance

Extensive video pre-processing helps 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 Ericsson's product range this makes MPEG-4 AVC deployable today in any broadcast or broadband application.

Enabling Hybrid Networks Operators and Legacy Migration

The EN8030 can provide MPEG-2 + MPEG-4 AVC encoding of the same source in a single solution. This dual format encoding enables support for migration of your consumer base from MPEG-2, or operators to broadcast across simultaneous multi-networks.

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 EN8030 to be deployed in any IP distribution or TV over xDSL application.

Variable Bit-rate Operation Modes

Option for stand-alone 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 enables satellite, cable and terrestrial operators to maximize picture quality using bit-rate sharing techniques.

BASE UNIT FEATURES

EN8030 Encoder (EN8030/BAS, FAZ 101 0120/33)

- MPEG-4 AVC real-time video encoding
- Simultaneous SD MPEG-2 encoding with E5710 features (option)
- Picture-in-Picture generation up to CIF resolution (option)
- Main profile at Level 3 (MP@L3)
- SDI and composite video inputs
- Extensive video pre-processing including:
  - Noise reduction (option)
  - Input de-blocking filter for MPEG-2 turn-around (option)
  - Resolution changing
- 1/4 to full D1 NTSC/PAL resolutions
- Constant bit-rate encoding from 0.250 Mbps to 10 Mbps, depending on resolution
- Variable bit-rate and Reflex statistical multiplexing support (option)
- Stereo Audio encoding:
  - MPEG-1 Layer II and Dolby® Digital (AC-3)
  - Options for advanced audio encoding
  - Digital, analog and SDI embedded inputs
- Control and monitoring via web browser, the front panel or nCompass Control
- MPEG-2 transport stream (ASI) output
- Dual IP NIC output (option)

EN8030 Encoder (EN8030/BAS/48V, FAZ 101 0120/34)

- As EN8030/BAS except with -48 VDC power supply

EN8032 Encoder (EN8032/BAS, FAZ 101 0120/35)

- As EN8030/BAS except in a 2RU chassis supporting four option slots

SOFTWARE OPTIONS

Simultaneous SD MPEG-2 Encoding (EN8000/SWO/MPEG2, FAZ 101 0120/18)

- Enables an additional SD MPEG-2 encoder to allow simultaneous encoding of the SD input with both MPEG-2 and MPEG-4 AVC (as well as PiP if enabled)

Dual SD MPEG-4 AVC Encoding (EN8000/SWO/SDAVC2, FAZ 101 0120/27)

- Enables an additional SD MPEG-4 AVC encoder to allow simultaneous encoding of the SD input with two independent MPEG-4 AVC encoders (as well as PiP if enabled). This enables support for combined Satellite and IPTV headends when one encoder is in a Reflex pool and the other is CBR. Independent dual CBR is also supported.

Clarus™ Noise Reduction (EN8000/SWO/NR, FAZ 101 0120/20)

- Improves picture quality and reduces bit-rate requirement
- Fully adaptive spatial, temporal noise reduction
- Input processing and filtering

Clarus™ Input De-blocking Filter EN8000/SWO/DBF, FAZ 101 0120/13)

- Reduces macro block noise introduced by previous encoder
- Improves picture quality and reduces bit-rate requirement

Advanced Audio Coding on ICE3 (EN8000/SWO/ICE3AAC, FAZ 101 0120/15)

- Enables a stereo pair of MPEG-2 AAC-LC (Low Complexity) or MPEG-4 AVC (High Efficiency) HE-AACv1 or HE-AAC v2 audio encoding. One or two licenses are supported.

Advanced Audio Coding on the Audio Option Module (EN8000/SWO/AOMAAC, FAZ 101 0120/12)

- Enables a stereo pair of MPEG-2 AAC-LC (Low Complexity) or MPEG-4 AVC (High Efficiency) HE-AAC v1 or HE-AAC v2 audio encoding. One to four licenses are supported. Three licenses enables 5.1 surround sound encoding.
- Requires EN8000/HDC/AUD

Dolby® Digital (AC-3) Audio Coding (EN8000/SWO/AC3, FAZ 101 0120/11)

- Enables two stereo pairs of Dolby Digital (AC-3) audio encoding
- Additional licenses can enable up to four more pairs when the advanced Audio Encoder Module is fitted

Audio Transcoding from Dolby®E to DTS 5.1 (EN8000/SWO/DOLBY-E/DECODE, FAZ 101 0120/54 and EN8000/SWO/DTS, FAZ 101 0120/53)

- Enables Transcoding from DolbyE to DTS 5.1 encoding.
- Includes all meta data processing requirements
- Requires EN8000/HDC/AUD

Variable Bit-rate Operation (EN8000/SWO/REFLEX, FAZ 101 0120/25)

- Enables Reflex Statistical Multiplexing between multiple encoders as part of a multiplex based system
- Enables stand-alone automatic variable bit-rate video generation (capped VBR) based on user configurable target quality and maximum bit-rate settings

SMPTE 2022 Pro-MPEG FEC (EN8000/SWO/PROFEC, FAZ 101 0120/23)

- Enables SMPTE 2022 Pro-MPEG FEC protection in the Dual IP output card for robust IP streaming

Simultaneous Picture-in-Picture Video Service Encoding (EN8000/SWO/PIP, FAZ 101 0120/21)

- 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
- Supports PIP service from 96 x 96 up to 352 x 288/240 resolution

Dual SD MPEG-4 AVC (EN8000/SWO/SDAVC2, FAZ 101 0120/27)

- Enables Dual SD MPEG-4 encoding of a single source with two separately configurable encoders
- Supports dual Satellite and IPTV headends by allowing one encoder to support Reflex statistical multiplexing while the other encoder supports CBR or capped VBR
- Supports two different bit-rate versions of the video to extend the reach of an ADSL network
- Picture-in-Picture is also available with this option

RAS (EN8000/SWO/RAS, FAZ 101 0120/24)

- Allows material to be protected from illegal viewing using Ericsson's proprietary scrambling system

Upgrade to HD MPEG-4 AVC (EN8000/SWO/SD2HD, FAZ 101 0120/)

- Enables all the features and functions of the HD EN8090
- SD MPEG-4 AVC is still available by changing the encoding profile

HARDWARE OPTIONS

Dual Port IP Transport Stream Output (EN8000/HWO/IPTSDUAL, FAZ 101 0120/8)

- UDP/IP or RTP/UDP/IP encapsulation of MPEG-2 transport stream output
- Dual port 100/1000BaseT Ethernet physical interface
- CBR or VBR multicast outputs
- Multicasts MPTS transport stream from encoder
- Splits MPEG-2, MPEG-4 AVC and PiP services into three individual SPTS for multicasting
- User configurable network and multicast parameters

Advanced Audio Encoder Module (EN8000/HDC/AUD, FAZ 101 0120/1)

- Supports 4 pairs of MPEG-1 Layer II encoding as standard
- Advanced audio processing module enables additional stereo and 5.1 surround sound encoding with appropriate licensing
- Pass-through audio support, including glitch suppression on Dolby Digital (AC-3) pass-through services
- Hardware future-proofing for future audio encoding and transcoding requirements
- This option does not use one of the option slots

Audio Option Card (EN8000/HWO/AUDLIN2, FAZ 101 0120/5)

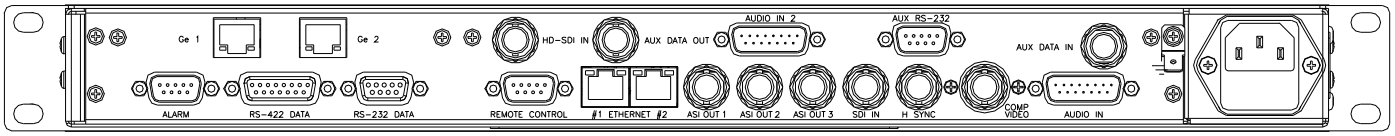
- Two stereo pairs supported per card
- Analog input levels: 12, 15, 18, 21, 22 and 24 dB
- MPEG-1 Layer II audio encoding
- Dolby Digital (AC-3) 2.0 encoding
- Dolby Digital (AC-3) 1 to 5.1 channel and DolbyE pass-through
- Linear PCM and DTS pass-through
- AES3 compliant input
- One audio option card may be fitted supporting a total of four stereo pairs in the unit, encoded as either MPEG-1 Layer II or Dolby Digital 2.0

ATM Output (M2/EOM2/ATMS34, FAZ 101 0120/4)

- 34Mbps ATM output to support AAL-1 and AAL-5

ERICSSON EN8030 MPEG-4 AVC STANDARD-DEFINITION ENCODER

SAMPLE CONFIGURATION



SPECIFICATIONS

Inputs

Video

SDI serial digital video with EDH error detection and health monitoring

Composite video (PAL/NTSC)

SDI component 625 and 525 line standard supported

Audio

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

Up to four stereo pairs can be de-embedded from SDI

Studio Reference

625 and 525 line HSYNC

Outputs

MPEG Transport Stream

DVB-ASI (three ports)

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

Video Encoder

MPEG-4 AVC Video Compression

Main Profile at Level 3 (MP@L3)

0.250 Mbps to 10 Mbps, depending on resolution

MPEG-2 Video Compression (option)

Main Profile at Main level (MP@ML)

0.256 Mbps to 15 Mbps

MPEG-2 encoder includes all the features and performance of the E5710

Picture-in-Picture (option)

MPEG-4 AVC MP@L3

96 x 96 to 352 x 288/240 resolution

Supported Video Resolutions

Resolutions Supported by MPEG-4 AVC Encoder

576 lines x 720/704/640/576/544/528/480/352 pixels

480 lines x 720/704/640/576/544/528/480/352 pixels

288 lines x 352/320 pixels

240 lines x 352/320 pixels

Audio Encoder

MPEG-1 Layer II, up to two stereo pairs (option)

Dolby® Digital (AC-3) (option), up to six stereo pairs with EN8000/HDC/AUD

MPEG-2 AAC-LC (option), up to six stereo pairs with EN8000/HDC/AUD

MPEG-4 HE-AAC v1 (option), up to six stereo pairs or 1 x 5.1 and three stereo pairs with EN8000/HDC/AUD

MPEG-4 HE-AAC v2 (option) up to six stereo pairs with EN8000/HDC/AUD

MPEG-4 AAC-LC 5.1 (option) with EN8000/HDC/AUD

Advanced Video Pre-processing

Clarus™ adaptive spatial and temporal noise reduction (option) and input de-blocking filters (option)

Closed captioning extraction from VBI, SMPTE 334

Image resizing (multiple resolutions)

Features

Easy-to-use front panel control

Web-based control

nCompass Control by Ericsson

Accurate bit-rate control

No frame loss guarantee

Physical and Power

Dimensions (W x D x H)

442.5 x 545 x 44.5 mm
(17.5” x 20.7” x 1RU)

Approximate Weight

7.5 kg (16.5 lbs)

Power Input

100 VAC to 120 VAC or 220 VAC to 240 VAC wide-ranging, or -48 VDC

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

Safety Compliance: EN60950, IE60950

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