ERICSSON EN7190 MPEG-4 AVC HD ENCODER / RE-ENCODER MODULE

MPEG-4 AVC High Definition System 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.

The EN7190 MPEG-4 AVC HD encoder provides excellent MPEG-4 AVC HD compression delivering a 15 percent efficiency gain over the previous generation of encoders. In addition to excellent picture quality, the EN7190 delivers high density (up to six channels per 1RU) and low power consumption.

The EN7190 is also available as re-encoder variant to deliver a no compromise full decode / encode solution for cable and IPTV turnaround applications.

PRODUCT OVERVIEW

Excellent Coding Efficiency

The EN7190 option module delivers a 15% compression gain over the previous generation of HD MPEG-4 encoders. This allows operators to add one extra channel in six or save one RF channel in five without loss in picture quality.

Efficient Rack Space

For installations where rack space is at a premium, the Video Processor Chassis delivers the highest density of any broadcast quality MPEG-4 encoder solution with up to six EN7190 option modules, halving rack space requirement in comparison to existing deployed systems. This high density enables a rolling upgrade of a headend with minimum spare rack space. The re-encoder variant of the EN7190 is just as space efficient allowing six high quality transcodes per rack unit.

Hot Swappable Support and Module Level Redundancy

The EN7190 option module is hot swappable allowing in-field servicing and system expansion without disrupting other on-air channels.

Redundancy management under nCompass Control by Ericsson can be both module and chassis based for ultimate resilience without disruption non-failed channels.

OPTION MODULE FEATURES

EN7190 Encoder (VP/HWO/EN7190/ENC, FAZ 101 0118/68)

- The HD MPEG-4 AVC encoder option module supports;
  - Hot swappable
  - 3 Gbps HD SDI video input
  - Digital AES-EBU and embedded HD SDI audio input
  - MPEG-1 Layer II Audio
  - Dolby® Digital (AC-3) 1 to 5.1 channel pass-through
  - 5.1 Audio Transcoding options
  - Fully exhaustive motion estimation
  - Closed caption support input via HD SDI SMPTE 334
  - Conversion of EIA 608 to EIA 708 format closed captions
  - OP47 support for Teletext services
  - Control via nCompass Control by Ericsson

EN7190 Re-encoder (VP/HWO/EN7190/TRANS, FAZ 101 0118/72)

- The HD MPEG-4 AVC re-encoder option module has the same features* as the EN7190 encoder with the addition of a transport stream input over IP allowing the re-encoder variant of the EN7190 to be configured as an encoder or transcoder.

*Digital AES-EBU input is not available on the re-encoder variant

SOFTWARE OPTIONS

Clarus™ Motion Compensated Temporal Filtering (VP/SWO/HD/MCTF, FAZ 101 0118/51)

- Superior professional-grade noise reduction to address the most demanding noisy video sources while preserving high spatial resolution

Reflex™ (VP/SWO/REFLEX, FAZ 101 0118/15)

- Enables Reflex Statistical Multiplexing allowing the encoder to be part of a stat-mux pool of encoders that share their bit-rate using a MX8400 multiplexer
- Reflex statistical multiplexing coupled with the EN7190's unique multi-point look-ahead encoders can deliver over 25 percent efficiency gain for a typical 12 channel system
- One license required per encoder module

Additional MPEG-1 Layer II Encoding (VP/SWO/M1L2, FAZ 101 0118/13)

- Enables one pair of MPEG-2 Layer II audio encoding
- Up to six additional pairs of audio per encoder module can be supported to make a total of eight pairs per module

Dolby® Digital Stereo Encoding (VP/SWO/DOLBY/AC3, FAZ 101 0118/12)

- Enables one pair of Dolby Digital (AC-3) stereo audio encoding
- Three licences enable 5.1 encoding
- Up to six pairs per encoder module can be supported

Dolby® Digital Plus Stereo Encoding (VP/SWO/DOLBY/PLUS, FAZ 101 0118/58)

- Enables one pair of Dolby Digital Plus stereo audio encoding
- Three licences enable 5.1 encoding
- Up to six pairs per encoder module can be supported

AAC Encoding (VP/SWO/AAC, FAZ 101 0118/55)

- Enables one pair of Dolby Digital (AC-3) stereo audio encoding
- Includes support for AAC-LC, HE AAC and HE AACv2
- Three licences enable 5.1 encoding
- Up to eight pairs per encoder module can be supported

Dolby®E to Dolby® Digital 5.1 Transcoding

- This functionality is enabled with the Dolby-E decode option (VP/SWO/DOLBY E/DEC, FAZ 101 0118/63) and three Dolby Digital stereo encode options
- Transcode includes a down-mix to a stereo pair which can be encoded as MPEG-1 Layer II
- Automatic selection of a back-up LPCM pair on loss of Dolby-E, including meta data generation
- Two transcode per encoder module can be supported

ALC (Automatic Loudness Control) (VP/SWO/ALC, FAZ 101 0118/113)

- This feature corrects sustained audio level mismatches between interstitials and main program content
- Each licence enables ALC for one audio pair of encoding in any audio format
- Two ALC licences enable ALC for a 5.1 surround sound encode
- ALC can be applied to an audio transcode as well as straight encode from a LPCM audio input.

Please contact Ericsson or an approved reseller to confirm which

SPECIFICATIONS

HD MPEG-4 AVC Video and Audio Encoder Option Module

Up to six HD MPEG-4 AVC encoder option modules per chassis

Full support for module level hot swap

HD MPEG-4 AVC Option Module Inputs

Video

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

Transport Stream

Input into the chassis via Ethernet, internally routed to re-encoder option module.

HSYNC support for single PCR operation (option)

Audio

Up to eight stereo pairs embedded on HD SDI

Up to four stereo pairs via AES EBU (Encoder only)

Supports both balanced (AES3) and unbalanced (AES3id) digital audio inputs (Encoder only)

Video Encoder

MPEG-4 MP / HP@L4.0 Encoding

2 Mbps to 25 Mbps

"Pixel Perfect" fully exhaustive motion estimation

Reflex™ by Ericsson Statistical Multiplexing support (option)

HD Resolutions

1920/1440 x 1080i 25

1920/1440 x 1080i 29.97

1280/960 x 720p 50

1280/960 x 720p 59.94

GOP processing includes adaptive GOP structure and adaptive GOP length

Audio Encoder

8x stereo audio channel processing

MPEG-1 Layer II audio encoding standard

Encoding rates from 32 kbps to 384 kbps

Dolby® Digital (AC-3)

Encoding rates from 56 kbps to 640 kbps (option) - maximum of six pairs

Pass through of pre-encoded Dolby Digital (AC-3) 1 to 5.1 channel

Transcode option from Dolby®E to Dolby Digital (AC-3) 5.1 channel

VANC Data Extraction

SMPTE 334-1 Closed Captions

SMPTE 2016-3 AFD and Bar Data

OP47 Teletext subtitles

SMPTE 2013 Teletext

Advanced Pre-processing

Clarus™ professional grade Motion Compensated Temporal Filtering. (Optional)

Frame re-synchronization

Features

Internal test tone and test pattern generation

Auto-switching on loss of input source to test pattern, last good video frame with selectable text message

Physical and Power

Approximate Weight

0.33 kg (0.725lbs) per HD MPEG-4 AVC option module

Power Consumption per module

35 Watt

Environmental Conditions

Operating Temperature

-10°C to 50°C (14°F to 122°F)

Operating Humidity

<95% (Non-condensing)