



# ERICSSON EN8190 MPEG-4 AVC HD ENCODER MODULE

## MPEG-4 AVC High Definition System Encoder

The EN8190 MPEG-4 AVC HD encoder provides the best MPEG-4 AVC HD compression in the world using new technology, designed from the ground up.

In combination with DVB-S2 satellite modulation and the PREKOR™ Dynamic Pre-correction System by Ericsson enables operators to gain maximum performance from a satellite transponder. This product enables the most HDTV channels per transponder in the industry.

### PRODUCT OVERVIEW

#### Innovation Delivers Outstanding Coding Efficiency

Based on 18 years of encoder design experience, the EN8190 option module is a radical new design. The EN8190's unique multi-point look ahead supports an iRDO (Interpolating Rate Distortion Optimization) engine that extracts the maximum efficiency possible from the MPEG-4 AVC specification. This efficiency gain coupled with Reflex™ Statistical Multiplexing typically allows operators to get more HDTV channels into their transmission bandwidth than any other solution.

#### Efficient use of Spectrum

The EN8190 option module delivers compression efficiency that allows;

- Five to six HD channels in a typical digital terrestrial transmission channel using DVB-T2
- Seven to eight HD channels on a typical satellite transponder using DVB-S2 and PREKOR™
- Eight to 10 HD channels on a typical DVB-C cable TV network

#### Hot Swappable Support and Module Level Redundancy

The EN8190 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

#### EN8190 Encoder (VP/HWO/EN8190/ENC)

- 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



## SOFTWARE OPTIONS

### Clarus™ Motion Compensated Temporal Filtering (VP/SWO/HD/MCTF)

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

### Reflex™ (VP/SWO/REFLEX)

- 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 EN8190'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)

- 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)

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

### Dolby®E to Dolby® Digital 5.1 Transcoding

- This functionality is enabled with a DolbyE decode option (VP/SWO/DE/DEC) and three Dolby Digital stereo encode options
- Transcode includes a down-mix to a LPCM stereo pair which can be encoded as MPEG-1 Layer II
- Automatic selection of a back-up pair on loss of DolbyE, including meta data generation
- Up to two transcodes can be support on each EN8190 module

Please contact Ericsson or an approved reseller to confirm which combinations of options are supported.

## SPECIFICATIONS

### HD MPEG-4 AVC Video and Audio Encoder Option Module

One to two HD MPEG-4 AVC encoder option modules

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

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

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

### Video Encoder

MPEG-4 MP / HP@L4.0 Encoding

1 Mbps to 25 Mbps

"Pixel Perfect" fully exhaustive motion estimation

Reflex™ by Ericsson Statistical Multiplexing support (option)

### HD Resolutions

1080 x 1920/1440 i 25

1080 x 1920/1440 i 29.97

720 x 1280/960 p 50

720 x 1280/960 p 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

### 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

0.66 kg (1.5 lbs) per HD MPEG-4 AVC option module

#### Power Consumption per module

110W

### Environmental Conditions

#### Operating Temperature

-10°C to 50°C (14°F to 122°F)

#### Operating Humidity

<95% non-condensing