



# ERICSSON EN8100 MPEG-2 SD ENCODER MODULE

## MPEG-2 Standard Definition System Encoder

With over a billion MPEG-2 only consumer receivers deployed world-wide, MPEG-2 based digital video headends continue to be a critical part of the encoding landscape for terrestrial, telco, satellite and digital cable service providers. With the drive to launch new channels, especially new HD services, the need for new more efficient SD MPEG-2 has never been greater.

The EN8100 MPEG-2 SD encoder is simply the most efficient SD MPEG-2 encoder available today. It delivers highest quality SD video at bit-rates previously unachievable with the MPEG-2 standard.

The radical design of the EN8100 is aimed specifically at the most demanding low bit-rate applications. Combined with its efficient use of rack space, the EN8100 is the ideal MPEG-2 real-time encoder for high performance DTH applications via satellite, digital terrestrial or cable.

## PRODUCT OVERVIEW

### Add New Channels with Ultimate Performance Encoding

The EN8100 brings a high level of encoding performance allowing operators to add additional channels in their existing transmission bandwidth. As well as rack space and power savings the replacement of existing deployed systems with an EN8100 based system would allow up to five additional channels in current transmission bandwidth 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-2 encoder solution with up to six EN8100 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.

### Hot Swap Support and Module Level Redundancy

The EN8100 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.

### Environmental Benefits

A 16 channel system based on the EN8100 consumes half the power of a system based on previous generations of encoders, halving the carbon footprint of your headend.

## OPTION MODULE FEATURES

### EN8100 Encoder (VP/HWO/EN8100/ENC)

The SD MPEG-2 encoder option module supports

- Hot swappable
- SDI video input
- Digital AES-EBU and embedded SDI audio input
- MPEG-1 Layer II Audio
- Dolby® Digital (AC-3) 1- 5.1 channel pass-through
- Triple pass fully exhaustive motion estimation
- 44 pass compression (advanced RDO) for optimal efficiency
- Support for a wide range of VBI data formats
- Closed caption support input via line 21 or SDI SMPTE 334
- Conversion of EIA 608 to EIA 708 format closed captions
- Control via nCompass Control by Ericsson

## SOFTWARE OPTIONS

### **Clarus™ Noise Reduction (VP/SWO/SDMP2/NR)**

- Four levels of professional-grade adaptive noise reduction to address the most demanding noisy video sources

### **Auto-Concatenation (VP/SWO/ACON)**

- Aligns the encoder to the previous encoder's GOP structure to significantly reduce coding artifacts caused by successive coding and decoding
- With critical content, auto concatenation can increase compression efficiency by up to 25 percent

### **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 EN7100'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 three pairs per encoder module can be supported

### **AAC Encoding (VP/SWO/AAC)**

- Enables one pair of Dolby Digital (AC-3) stereo audio encoding
- Includes support for AAC-LC, HE AAC and HE AACv2
- Up to five 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/DOLBY E/DEC) 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 DolbyE, including meta data generation
- One transcode can be support on each EN8100 module

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



## SAMPLE CONFIGURATION



## SPECIFICATIONS

**SD MPEG-2 Video and Audio Encoder Option Module**

One to six SD MPEG-2 encoder option modules

Full support for module level hot swappable

**SD MPEG-2 Option Module Inputs****Video**

SDI serial digital video 625 and 525 line standard supported with EDH error detection and health monitoring

HSYNC support for single PCR operation (option)

**Audio**

Up to eight stereo pairs embedded on SDI

Up to four stereo pairs via AES EBU

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

**Video Encoder****MPEG-2 MP@ML Encoding**

0.256 Mbps to 15 Mbps

Triple Pass "Pixel Perfect" fully exhaustive motion estimation

Reflex by Ericsson statistical multiplexing support (option)

Vertical Resolutions 576, 288 (PAL), 480, 240 (NTSC)

Horizontal Resolutions 720, 704, 640, 544, 528, 480, 352

GOP processing includes adaptive GOP structure and adaptive GOP length

Fully configurable legacy modes to ensure interoperability with all generations of deployed set-top boxes

**Audio Encoder**

2x 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 three pairs

MPEG-2 AAC-LC (option), up to five stereo pairs

MPEG-4 HE-AAC v1 (option), up to five stereo pairs

MPEG-4 HE-AAC v2 (option) up to five stereo pairs

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

**Dolby® E to Dolby® Digital (AC-3) 5.1 transcoding**

Includes down mix to stereo and auto selection of a stereo backup source on loss of the 5.1 source (option)

**VBI**

World Standard Text (WST - ETS300472) 625 only

Closed captioning EIA-608, EIA-708 and SCTE 20

Closed captions inserted by line 21 or SMPTE 334-1

SMPTE 2016-3 AFD and Bar Data

Wide screen signaling (WSS) 625 only

**Advanced Pre-processing****Adaptive bandwidth**

Clarus™ professional grade adaptive spatial and temporal noise reduction offering four adaptive levels (option)

Scene cut detection and I frame insertion

Frame re-synchronization

**Features**

Internal test tone and test pattern generation

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

**Physical and Power****Approximate Weight**

0.33 kg (0.73 lbs) per SD MPEG-2 option module

**Power Consumption per module**

40W

**Environmental Conditions****Operating Temperature**

-10°C to 50°C (14°F to 122°F)

**Operating Humidity**

<95% non-condensing