ERICSSON

ERICSSON EN7100 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 to support SD MPEG-2 networks has never been greater.

The EN7100 MPEG-2 SD encoder is ideal for high performance applications such as IPTV, cable, satellite, digital terrestrial or distribution applications. Up to six EN7100 SD MPEG-2 encoder modules can be installed in a 1RU Video Processor chassis making this an ideal solution for applications where rack space is at a premium.

PRODUCT OVERVIEW

Add New Channels with High Performance Encoding

The EN7100 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 EN7100 based system would allow up to two 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 EN7100 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 EN7100 option module is hot swappable allowing in-field servicing and system expansion without disrupting other on-air channels.

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

Environmental Benefits

A 16 channel system based on the EN7100 consumes half the power of a system based on previous generations of encoders, halving the carbon footprint of your headend.

OPTION MODULE FEATURES

EN7100 Encoder (VP/HWO/EN7100/ENC, FAZ 101 0118/7)

- 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 to 5.1 channel pass-through
  - RDO compression technology for greater 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, FAZ 101 0118/16)

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

Auto-Concatenation (VP/SWO/ACON, FAZ 101 0118/52)

- 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, 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 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, 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 three 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 three 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 five 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
- One transcode can be support on each EN7100 module

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 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 Swap

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

“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.

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

45 Watt

Environmental Conditions

Operating Temperature

-10°C to 50°C (14°F to 122°F)

Operating Humidity

<95% (Non-condensing)

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