



ERICSSON E5720

MPEG-2 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 consumer's home - maximizing the return on network investment.

Ericsson has always led the market in providing encoding platforms that give optimum quality at the very lowest possible bit-rates. The E5720 is the result of over fifteen 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 improvements and feature upgrades keeps our customers ahead of the market.

Appropriate for a Wide Range of Applications

The E5720 is easily adaptable to a wide range of professional applications that require top-level performance and functionality. The 2RU chassis allows up to six option cards to be fitted and supports a twelve-key alphanumeric key pad, eight hot keys and video input confidence monitor. Coupled with the low bit-rate performance, this makes it an ideal component in contribution and distribution applications, as well as multi-channel solutions for broadband DSL/FTTH, cable, satellite or digital terrestrial.

Comprehensive Operational Options

The E5720 offers breadth and depth in operational capabilities including Variable Bit-Rate (VBR) and Constant Bit-Rate (CBR) modes, Reflex™ Statistical Multiplexing and audio capabilities allowing operators to design their ideal encoding system and maximize their bandwidth capacity. For content protection, the E5720 supports both RAS and BISS for secure contribution networks.

Reliable, Efficient Management

The E5720 can be remotely controlled via a web browser and can also be efficiently managed and maintained through integration into the nCompass Control System by Ericsson. This scalable system enables reliable, remote management and monitoring, reducing the need for costly, on-site operation.

BASE UNIT FEATURES

E5720 Encoder (M2/ENC/E5720)

The encoder features six physical expansion slots for hardware options and has a range of software enabled options for flexibility to suit specific applications. These expansion slots facilitate upgrade paths for either multi-pass encoding (E5775), HD MPEG-2 (E5780 and E5782), HD MPEG-4 AVC (EN8092) or SD MPEG-4 AVC (EN8032).

- SDI and composite video inputs
- Analog, digital AES-EBU and embedded SDI audio input
- MPEG-1 Layer II Audio
- Dolby® Digital (AC-3) 1 - 5.1 and Dolby®E channel pass-through
- Fully exhaustive motion estimation
- Extensive pre-processing features
- Support for a wide range of VBI data formats
- Closed caption support input via RS-232 or SDI SMPTE 334
- Conversion of EIA 608 to EIA 708 format
- Support for splice points and special features for VOD ingest
- Three ASI outputs plus wide range of optional telco interfaces
- Control via front panel, SNMP, RS-232/RS-485, Web browser or nCompass Control systems
- Film mode detection (3:2 pull-down)
- Data insertion supporting RS-232 data and RS-422
- Flexible expansion support (six slots available)
- Upgrade path for HD MPEG-2
- Upgrade path for SD and HD MPEG-4 AVC
- The front panel includes a video and audio input monitor, eight soft keys and an alphanumeric keypad

SOFTWARE OPTIONS

Performance Upgrade (M2/ESO2/PU)

- The performance upgrade enables advanced Ericsson coding algorithms that increase the efficiency by at least 0.8 Mbps per channel. It also reduces the lower bit-rate limit to 256 kbps and enables bit-rate saving features such as adaptive GOP and long GOP

Upgrade to 422 profile @ ML (M2/ESO2/422)

- For professional editing quality pictures, 1.5 Mbps to 50 Mbps

Auto-Concatenation (M2/ESO2/ACON)

- Aligns the encoder to the previous encoder's GOP structure to significantly reduce coding artifacts caused by successive coding and decoding

Noise Reduction (M2/ESO2/NR)

- Four levels of professional-grade adaptive noise reduction plus three fixed levels of noise reduction

Reflex and VBR (M2/ESO2/VBR)

- Automatic variable bit-rate at a fixed quality setting for optimum bandwidth usage in stand-alone or Reflex Statistical Multiplexing modes

SMPTE 2022 Pro-MPEG FEC (M2/ESO2/PROFEC)

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

RAS (M2/ESO2/RAS)

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

Dolby® AC-3 Two Channel Encoding (M2/ESO2/AC3)

- Enables Dolby® Digital (AC-3) stereo encoding. The first two stereo pairs are free of charge

DTS (Digital Theater Sound) (M2/ESO2/DTS)

- Enables pass-through of pre-encoded DTS audio

NABTS VBI Extraction (M2/ESO2/525VBIDATA)

- Enables the extraction of GEMSTAR and EIA 516 NABTS data from the VBI and carriage in a transport stream packet

Digital Program Insertion (M2/ESO2/DPI)

- Enables carriage of DPI messages as per SCTE 35 controlled by either DVS 525 or contact closure read by the GPI input option card

HARDWARE OPTIONS

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

Audio Option Card (M2/EOM2/AUDLIN2)

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

G.703 Output (M2/EOM2/G703)

- The G.703 card supports both DS-3 at 44.736 Mbps and E3 at 34.368 Mbps

Range of ATM Outputs (M2/EOM2/ATMS34, M2/EOM2/ATMS45, M2/EOM2/ATMS155)

- Range of ATM outputs to support AAL-1 and AAL-5

REMUX (M2/EOM2/REMUX)

- Re-multiplex three external MPTS transport streams with the locally generated stream
- Supports automatic PID re-mapping and resolves service name conflicts
- Supports insertion of externally generated dynamic PSIP
- Supports insertion of DVB subtitles

IP Output (M2/EOM2/IPTSDUAL)

- Dual output
- UDP/IP or RTP/UDP/IP encapsulation of MPEG-2 transport stream output
- 100/1000BaseT Ethernet physical interface
- Multicast or unicast capable
- Supports multiple SPTS streams

SSI – SMPTE 310 (M2/EOM2/SSI)

- This card provides three SSI outputs to support links to 8VSB transmitters in ATSC applications

ASI Optical (M2/EOM2/ASI-OPT)

- This card provides an ASI optical output as specified by EN 50083-9

GPI Contact Closure Input (M2/EOM2/GPI)

- Reads one of eight input signals to trigger SCTE 35 messages
- Other functions and encoder parameters may be controlled by contact closures. Please contact Ericsson or an approved reseller for further details

BISS Scrambler Card (M2/EDCOM2/BISS)

- BISS (Basic Interoperable Scrambling System) for secure contribution links
- Allows material to be protected from unwanted viewing using the BISS open standard
- Supports BISS Modes 0, 1 and Mode E for encrypted session words (as defined in EBU Tech 3292, May 2002). An application for generating encrypted session words can be downloaded from the encoder via a web browser
- This option is a daughter card on the motherboard and so does not occupy an option slot

Upgrade to HD MPEG-2 (UPG/HD/HWO/420 and UPG/HD/SWO/422)

- The HD MPEG-2 upgrade can support both 4:2:0 (E5780 equivalent) and 4:2:2 MPEG-2 HD (E5782 equivalent)

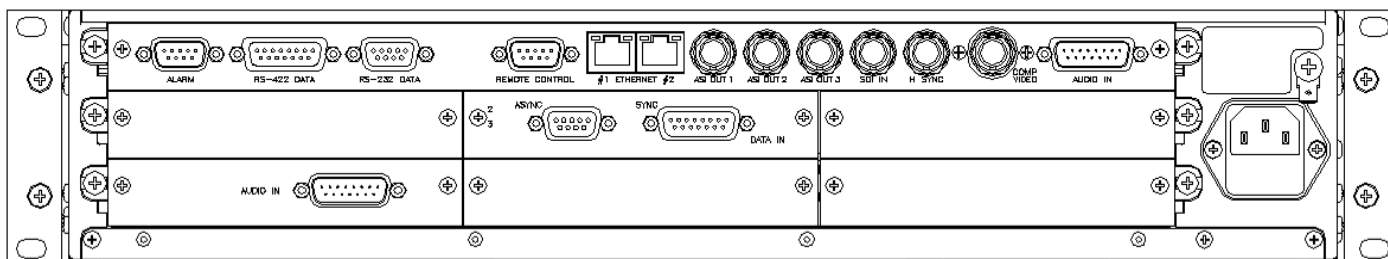
Upgrade to SD or HD Advance Video Compression (UPG/HWO/ICE3/SD) or (UPG/HWO/ICE3/HD)

- The Intelligent Compression Engine option card supports the latest MPEG-4 AVC encoding, either SD or HD



ERICSSON E5720 MPEG-2 STANDARD DEFINITION ENCODER

SAMPLE CONFIGURATION



SPECIFICATIONS

Inputs

Video

Analog composite video (PAL/NTSC) 10-bit sampling

SNR >60 dB

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

HSYNC support for 625 and 525 line

Audio

Two stereo pairs input via analog, AES-EBU or SDI

Analog audio balanced 600 /20 k

Input levels: 12, 15, 18, 21, 22 and 24 dB

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

Outputs

3x ASI copper Single Program Transport Stream

Video Encoder

MPEG-2 MP@ML

1.5 Mbps to 15 Mbps (without performance upgrade)

0.256 Mbps to 15 Mbps (with performance upgrade)

Performance upgrade option enables long GOP and adaptive GOP features

MPEG-2 422P@ML (option)

1.5 Mbps to 50 Mbps

"Pixel Perfect" fully exhaustive motion estimation

Reflex statistical multiplexing support (option)

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

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

Audio Encoder

2 x stereo audio channel processing

MPEG-1 Layer II audio encoding standard

Encoding rates from 32 kbit/s to 384 kbit/s

Dolby® Digital (AC-3)

Encoding rates from 56 kbps to 640 kbps

Dolby Digital (AC-3) 1 - 5.1 channel, Dolby®E, linear PCM and DTS pass-through

VBI

World Standard Text (WST - ETS300472) 625 only

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

Closed captions inserted by line 21, SMPTE 333 or SMPTE 334

Nielsen data AMOL I and AMOL II, 525 only

NABTS - 525 line only (option)

Video Index and Active Format Descriptor (AFD)

Video programming signal (VPS) 625 only

Wide screen signaling (WSS) 625 only

Time Code from VITC

Advanced Pre-processing

Adaptive bandwidth

Border processing

Ericsson TV professional grade adaptive spatial and temporal noise reduction offering four adaptive levels plus three fixed levels (option)

"Auto-Concatenation" I frame detection and alignment system – optimizes re-encoding performance (option)

Film mode inverse 3:2 pull-down

Scene cut detection

Frame re-synchronization

Features

Selectable range of delay modes for low latency operation

Front panel LCD with easy set-up and operation

Sixteen fully adjustable operational configurations

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

Input freeze frame and audio silence detection

Logo insertion

SCTE 35 controlled by SCTE 104 or GPI contact closure

Data

VANC data extraction up to 500 kbps

RS-232. Supported baud rates 1200, 2400, 4800, 9600, 19200, 38400 baud

RS-422 n x 64 kbps from 64 kbps to 2048 kbps (selectable) or n x 56 kbps from 56 kbps to 1792 kbps (selectable)

Control

Front panel

nCompass Control supported via dual

Ethernet

RS-232 and RS-485 interfaces for remote control

Support for external SNMP control

Support for SNMP traps

Full control and monitoring via web browser

Physical and Power

Dimensions (W x D x H)

442.5 x 545 x 89mm (17.5" x 20.7" x 2RU)

Approximate Weight

10.5 kg (23 lbs)

Power Input

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

Consumption

100 W no options, 250 W maximum, depending on the option cards selected

Environmental Conditions

Operating Temperature

-10°C to 50°C (14°F to 122°F)

Operating Humidity

<95% non-condensing

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, IEC60950

Optional Outputs

Dual GigE IP (optional SMPTE 2022 Pro-MPEG FEC)

ATM 34 Mbps, 45 Mbps

ATM 155 Mbps, Multi-mode, Single-mode & Copper G.703

ASI Optical

SMPTE 310 (SSI)

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