



ERICSSON SPR1100 BROADCAST STREAM PROCESSOR



The Ericsson SPR1100 is a high density broadcast video processor for operators to launch additional television services to the home; manage and migrate to MPEG-4 AVC; simplify time-shift TV ingest processing; and enable cost efficient disaster recovery sites for business continuity.

Designed for video turnaround applications requiring video and audio transcoding or bit-rate changing, the Ericsson SPR1100 supports any-to-any MPEG-2/MPEG-4 AVC HD/SD transcoding for up to 24 HD or 72 SD video services, up to 144 stereo audio services, and can simultaneously generate Picture-in-Picture (PIP) service for all channels processed - all within a single 1RU rack space saving chassis. The processor is perfectly suited for Telco and Cable IPTV platforms and represents the most efficient in its class. In addition, it can serve as a high quality bit-rate changer allowing for lower overall bit-rates or VBR to CBR conversion for applications like time-shift TV ingest.

The high availability configuration with a hot-standby spare running as automatic 1+1 mirrored units ensures maximum reliability and service up-time. The unit also has a number of other reliability features including choice of single or dual power supply and hot-swap processing modules for in-field servicing and expansion. An advanced Web-based user interface allows easy configuration, without the need for an external control system, which allows the Ericsson SPR1100 to be added to any existing installation that needs dense video transcoding.

PRODUCT OVERVIEW

Multiple Applications

High density broadcast video processing for multiple applications including turnaround of content for telco and cable IPTV, time-shift TV ingest processing and cost-efficient disaster recovery sites for business continuity.

Any-to-any Flexible Transcoding

The Ericsson SPR1100 will transcode between MPEG-2, MPEG-4 AVC, SD and HD, with single and multi-program transport stream input and outputs over IP.

Audio services can also be transcoded between MPEG-1/2 layer II, Dolby® Digital (AC-3) and Advanced Audio Codec (AAC) formats.

High Density Processing

Class leading density with transcoding for up to 24 HD or 72 SD and simultaneous PiP service generation in a 1RU chassis. Introduce new services in minimum of rack space.

“Pay As You Grow” Expansion

Only buy what you need today, as the Ericsson SPR1100 can be expanded in the field with additional hot-swap Media Processing Modules and video transcoding licences.

BASE UNIT FEATURES

Ericsson SPR1100 Broadcast Stream Processor

Standalone Configuration

- Single 1RU chassis
SPR11/ CHASSIS/1AC, FAZ 101 0161/1
- Single AC power supply
SPR11/CHASSIS/2AC, FAZ 101 0161/2
- Dual AC power supplies
SPR11/ CHASSIS/1DC, FAZ 101 0161/3
- Single DC power supply
SPR11/CHASSIS/2DC, FAZ 101 0161/4
- Dual DC power supplies

Redundant Pair 1+1 Active-Standby configuration

- Pair of units for 1+1 mirrored hot-standby redundancy
SPR11/ CHASSIS/1AC/RAS, FAZ 101 0161/6
- Each unit has a single AC power supply
SPR11/CHASSIS/2AC/RAS, FAZ 101 0161/7
- Each unit has dual AC power supplies
SPR11/ CHASSIS/1DC/RAS, FAZ 101 0161/8
- Each unit has a single DC power supply
SPR11/CHASSIS/2DC/RAS, FAZ 101 0161/9
- Each unit has dual DC power supplies

Redundant Pair 1+1 Active-Active configuration

- Pair of units for 1+1 hot-hot redundancy
SPR11/ CHASSIS/1AC/RAA, FAZ 101 0161/66
- Each unit has a single AC power supply
SPR11/CHASSIS/2AC/RAA, FAZ 101 0161/67
- Each unit has dual AC power supplies
SPR11/ CHASSIS/1DC/RAA, FAZ 101 0161/68
- Each unit has a single DC power supply
SPR11/CHASSIS/2DC/RAA, FAZ 101 0161/69
- Each unit has dual DC power supplies

BASE UNIT FEATURES cont.

Base Chassis Functionality includes:

- Control via 2x Electrical Ethernet (100/1000BaseT)
- Data i/o via 4x Electrical Ethernet (100/1000BaseT)
- 1 Gbps duplex communication to each module

Platform Processing Capacities

- Up to six Media Processor Modules (MPM) with single PSU
- Up to four modules in chassis with dual power supplies
- Transcode up to 24 HD or 72 SD services per chassis
- Ingest up to 64 redundant transport streams (SPTS or MPTS)
- Statistically multiplex services into an MPTS using the internal statmux control algorithm, iReflex. Supports up to 24 services per statmux group, and up to 18 groups per chassis.
- Audio normalization for automatic loudness control

HARDWARE OPTIONS

Media Processor Module

SPR/HWO/MPM1, FAZ 101 0161/57

SPR/HWO/MPM1/R, FAZ 101 0161/58

- Extensive support for VBI data formats
- Support for Closed Captions via line 21 and SMPTE 334

SOFTWARE OPTIONS

HD MPEG-4 Video License

SPR/SWO/HDMP4, FAZ 101 0161/13

SPR/SWO/HDMP4/R, FAZ 101 0161/21

- Up to 4 video transcodes to HD MPEG-4 per module, 24 per chassis
- License can also be used for HD MPEG-2, SD MPEG-4 or SD MPEG-2
- Any input: HD/SD, MPEG-4/MPEG-2

HD MPEG-2 Video License

SPR/SWO/HDMP2, FAZ 101 0161/14

SPR/SWO/HDMP2/R, FAZ 101 0161/22

- Up to 4 video transcodes to HD MPEG-2 per module, 24 per chassis
- License can also be used for SD MPEG-2
- Any input: HD/SD, MPEG-4/MPEG-2

SD MPEG-4 Video License

SPR/SWO/SDMP4, FAZ 101 0161/15

SPR/SWO/SDMP4/R, FAZ 101 0161/23

- Up to 12 SD MPEG-4 to SD MPEG-4 transcodes per module, 72 per chassis
- Up to 4 HD MPEG-4 to SD MPEG-4 transcodes per module, 24 per chassis
- License can also be used for SD MPEG-2

SD MPEG-2 Video License

SPR/SWO/SDMP2, FAZ 101 0161/16

SPR/SWO/SDMP2/R, FAZ 101 0161/24

- Up to 12 SD MPEG-2 to SD MPEG-2 transcodes per module, 72 per chassis
- Up to 4 HD MPEG-2 to SD MPEG-2 transcodes per module, 24 per chassis

PiP License

SPR/SWO/PIP, FAZ 101 0161/17

SPR/SWO/PIP/R, FAZ 101 0161/25

- 1 PiP per video transcode
- Up to 12 PiPs per module, 72 per chassis
- MPEG-4 AVC MP@L3 encoding

MPEG-1 & MPEG-2 Layer II Audio License

SPR/SWO/AUD/MP2, FAZ 101 0161/18

SPR/SWO/AUD/MP2/R, FAZ 101 0161/26

- Up to 24 audio transcodes to MPEG-1 / MPEG-2 layer II per module, 144 per chassis.
- (Quantity depends on input audio codec.)

AAC Audio License

SPR/SWO/AUD/AAC, FAZ 101 0161/19

SPR/SWO/AUD/AAC/R, FAZ 101 0161/27

- Up to 24 audio transcodes to AAC-LC or HE-AAC 2.0 per module, 144 per chassis
- Up to 6 audio transcodes to AAC-LC or HE-AAC 5.1 per module, 36 per chassis. Each 5.1 transcode requires 3 AAC audio licenses.

Dolby® Digital (AC-3) Audio License

SPR/SWO/AUD/AC3, FAZ 101 0161/20

SPR/SWO/AUD/AC3/R, FAZ 101 0161/28

- Up to 12 audio transcodes to Dolby® Digital 2.0 per module, 72 per chassis
- Up to 6 audio transcodes to Dolby® Digital 5.1 per module, 36 per chassis. Each 5.1 transcode requires 3 Dolby® Digital audio licenses.

Dolby® Digital Plus (EAC-3) Audio License

SPR/SWO/AUD/EAC3, FAZ 101 0161/120

SPR/SWO/AUD/EAC3/R, FAZ 101 0161/123

- Up to 6 audio transcodes to Dolby® Digital Plus per module, 36 per chassis
- Each 5.1 transcode requires 3 Dolby® Digital audio licenses.

Dolby® Digital (AC-3) Decode License

SPR/SWO/AUD/AC3DEC, FAZ 101 0161/95

SPR/SWO/AUD/AC3DEC/R, FAZ 101 0161/101

- Up to 18 Dolby® Digital decodes per module, 108 per chassis

Audio Levelling Control License

SPR/SWO/ALC/C, FAZ 101 0161/111

SPR/SWO/ALC/F, FAZ 101 0161/112

SPR/SWO/ALC/C/R, FAZ 101 0161/113

SPR/SWO/ALC/F/R FAZ 101 0161/114

- License per stereo pair, available on all audio outputs

iReflex Internal Statmux Control License

SPR/SWO/IREFLEX

SPR/SWO/IREFLEX/R

- License per transport stream, up to 18 per chassis

SPECIFICATIONS

Media Processor Module

Up to six Media Processor Modules per chassis

Module level hot swap

Module Inputs and Outputs

Video & Audio

All video and audio services are input and output via transport streams via the data Ethernet ports

Transport Streams

Ingest up to 128 transport streams (single input interface)

Ingest up to 64 transport streams (dual input interfaces)

iReflex Statmux Formation

Form statmuxes from internal video encoders

Up to 18 statmux groups per chassis

Up to 24 services per group

Audio Pass-through

MPEG-1 & MPEG-2 Layer II audio (mono, stereo)

AAC-LC & HE-AAC (stereo, 5.1) Dolby® Digital (2.0 & 5.1), Dolby® Digital Plus (2.0 & 5.1)

Audio Decode

MPEG-1 & MPEG-2 Layer II audio (mono, stereo, dual-mono), Bit-rate: 32-384 Kbps

AAC-LC & HE-AAC (stereo, 5.1)

Bit-rate: stereo: 64-192 Kbps (AAC-LC),

. 32-128 Kbps (HE-AAC)

5.1 Surround Sound: 160-512 Kbps (AAC-LC),

. 128-192 Kbps (HE-AAC)

Dolby® Digital (AC3)

Bit-rate: 56-640 Kbps (1.0, 2.0), 224-640 Kbps (5.1)

Audio Encode

MPEG-1 & MPEG-2 Layer II audio (mono, stereo, dual-mono)

Bit-rate: 32-384 Kbps

AAC, AAC-LC & HE-AAC (stereo, 5.1)

Bit-rate: stereo 64-192 Kbps (LC),

. 32-128 Kbps (HE)

5.1 Surround Sound: 160-512 Kbps (LC),

. 128-192 Kbps (HE)

Dolby® Digital (AC3)

Bit-rate: 56-640 Kbps (1.0, 2.0), 224-640 Kbps (5.1)

Dolby® Digital Plus (E-AC3)

Bit-rate: 32-56 Kbps (mono)

64-640 Kbps (mono, stereo)

192-640 Kbps (5.1)

1 audio transcode per input video service

VBI

DVB subtitles

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

Caption insertion from line 21 or SMPTE 334-1

SMPTE 2016-3 AFD and Bar Data

Wide screen signaling (WSS) 625 line only

Teletext

HD Video Decode

Supports Video Resolutions (HD):

1080i x 1920 / 1440 / 1280 @ 25 fps

1080i x 1920 / 1440 / 1280 @ 29.97 fps

1080PsF 1080 x 1920 @ 23.976 fps

720p x 1280 / 960 @ 50 fps

720p x 1280 / 960 @ 59.94 fps

Bit-rates (HD):

MPEG-2: MP@HL 0.5 Mbps to 30 Mbps

MPEG-4: HP@L4.0-L4.1 0.5 Mbps to 25 Mbps

SD Video Decode

Supports Video Resolutions (SD):

576i x 720/ 704/ 640/ 544/ 528/ 480/ 352 @ 25 fps

480i x 720/ 704/ 640/ 544/ 528/ 480/ 352 @ 29.97

fps

Bit-rates (SD):

MPEG-2: MP@ML 0.256 Mbps to 15 Mbps

MPEG-4: MP@L3-L4.1 0.256 Mbps to 12 Mbps

HD Video Encode

Applies to

SPR/SWO/HDMP2, FAZ 101 0161/14

SPR/SWO/HDMP4, FAZ 101 0161/13

CBR rate control

Interlace and progressive encoding support

Supports Video Resolutions (HD):

1080i x 1920 / 1440 / 1280 @ 25 fps

1080i x 1920 / 1440 / 1280 @ 29.97 fps

1080PsF 1080 x 1920 @ 23.976 fps

720p x 1280 / 960 @ 50 fps

720p x 1280 / 960 @ 59.94 fps

Bit-rates (HD):

MPEG-2: HP@HL 2 Mbps to 25 Mbps

MPEG-4: MP@L4.0 1 Mbps to 20 Mbps

MPEG-4: HP@L4.0 1 Mbps to 20 Mbps

MPEG-4: MP@L4.1 1 Mbps to 20 Mbps

SD Video Encode

Applies to

SPR/SWO/SDMP2, FAZ 101 0161/16 &

SPR/SWO/SDMP4, FAZ 101 0161/13

CBR rate control

Interlace and progressive encoding support

Supports Video Resolutions (SD):

576i x 720/ 704/ 640/ 544/ 528/ 480/ 352 @ 25 fps

480i x 720/ 704/ 640/ 544/ 528/ 480/ 352 @ 29.97

fps

Bit-rates (SD):

MPEG-2: MP@ML 1 Mbps to 15 Mbps

MPEG-4: MP@L3.0 0.5 Mbps to 10 Mbps

MPEG-4: HP@L3.0 0.5 Mbps to 12.5 Mbps

Picture in Picture (PiP)

MPEG-4 MP@L1.3 Encoding

0.100 Mbps to 0.25 Mbps

MPTS output (Main + PiP inside a single TS), and SPTS output (Main + PiP in separate TS—max 36 output TS in current release when in SPTS mode)

Resolutions:

128x96, 96x96 @ 25/29.97Hz

192x192, 144x144 @ 25/29.97Hz

Output Interfacing

Output

4x Electrical Ethernet (10/100/1000BaseT)

Management

2x Electrical Ethernet (10/100/1000BaseT)

SNMP v1/v2 for alarm traps

User management via web browser and XML

nCompass Control by Ericsson for monitoring alarms

IGMP v1/v2/v3

Physical and Power

Dimensions (H x W x D)

4.45 x 44.20 x 59.69 cm (1.75 x 17.40 x 23.50 in)

Weight

7.3 kg (16 lbs) with a single PSU

8.3 kg (18.3 lbs) with a dual PSU

0.33 kg (0.73 lbs) per module

Input Voltage

100 VAC to 240 VAC, 50/60 Hz

Input Power

Chassis 40W, MPM 40W

Up to 300W depending on options fitted

Environmental Conditions

Operating Temperature

-10°C to +50°C (14°F to 122°F)

Storage Temperature

-40°C to +85°C (-40°F to 185°F)

Relative Operating Humidity

10% to 90% (non-condensing)

Compliance

CE marked in accordance with EU Low Voltage and EMC Directives

EMC Compliance

EN55022, EN55024, AS/NZS3548, EN61000-3-2,

EN61000-3-3 and FCC CFR47 Part 15B Class A

Safety Compliance

EN60950-1, IE60950-1, UL60950-1 and NRTL listed

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Microsoft Mediarem certified