



# ERICSSON RX1290

## Multi-format SD/HD Integrated Receiver Decoder

Video professionals, broadcasters and news gathering organizations face increasing demands to capture and deliver video in multiple formats and standards while minimizing their operational costs. As television moves from MPEG-2 to MPEG-4 AVC, from standard definition (SD) to high definition (HD), Ericsson's RX1290 is uniquely positioned to address these multi-format, multi-standard needs by combining MPEG-2, MPEG-4 AVC, SD and HD with the capability to decode both 4:2:0 and 4:2:2 video.

The RX1290's capability to decode all video formats, coupled with a wide choice of input options for all transmission mediums makes the receiver the smart choice for professionals seeking a future-proof solution. This unique flexibility makes the RX1290 the only full MPEG-4 AVC HD solution for mobile applications. The RX1290 provides significant benefits for organizations who wish to migrate their operations from MPEG-2 SD to MPEG-4 AVC HD. The multi-format capability of the RX1290 allows a significant cost reduction to the traditional migration path of operating separate devices for SD and HD. With the RX1290, customers can upgrade the unit with licenses rather than migrating via a hardware upgrade path thereby giving maximum flexibility.

## PRODUCT OVERVIEW

### Increased Distribution Capacity and Efficiency

The RX1290 multi-format professional receiver, in combination with the Ericsson's MPEG-4 AVC encoders, enables increased distribution capacity due to their bandwidth reduction capabilities and increased encoding/decoding efficiencies. For satellite applications, the RX1290 can include a DVB-S2 demodulator, allowing an additional 30 percent increase in channel capacity.

### The Industry's most Versatile Decoder - a "Safe Choice" for the Future

The RX1290 decodes all major video formats commonly in use today in both SD and HD resolutions, providing complete flexibility for daily operations. The professional decoder is a "safe choice" for companies that are beginning to transmit MPEG-4 AVC and HD but continue to work in MPEG-2 and SD. With the RX1290 they can migrate at their own pace.

### Simplified Control and Lower Cost of Operations

Organizations with large populations of RX1290 receivers or other Ericsson receivers can simplify control by integrating with Director by Ericsson's control system. Director provides remote, over-air, single-view control from a central location, reducing the need for on-site local operators.

### Wide Range of Inputs and Outputs for Enhanced Connectivity

The RX1290 can be integrated into a variety of system architectures, including ASI, IP and RF delivery systems through a choice of input cards. The receiver offers a multitude of audio and video outputs for high quality delivery to all major onward networks.

## BASE UNIT FEATURES

### RX1290 – Multi-format Receiver (RX1290/BAS)

The following features are available as standard:

- MPEG-2, SD 4:2:0 decoding
- MPEG-2, SD, 4:2:2 decoding
- MPEG-2, HD, 4:2:0 decoding
- 3x HD SDI, SD SDI or ASI outputs
- 1x RGB or YPrPb analog video output
- 1x ASI input
- 2x balanced analog audio outputs
- 2x balanced digital audio outputs
- 4x unbalanced digital audio outputs
- Frame synchronization input
- RS-232 data output
- RS232/485 Control port
- Alarm relay
- BISS Mode 1 and E support
- Extensive VBI support



## HARDWARE OPTIONS

### Input Options

The RX1290 has a single ASI input as standard and can in addition be configured with a number of high performance inputs.

#### DVB-S2 Input (RX1290/HWO/DVBS2)

- 4x L-band inputs
- DVB-S QPSK demodulation
- DVB-S2 QPSK, 8PSK demodulation with license keys

#### DVB-S2 Input (RX1290/HWO/DVBS2/IF/CONST)

- Perfect for up-link monitoring
- 3x L-band inputs
- 1x IF input
- I/Q constellation output
- DVB-S QPSK demodulation
- DVB-S2 QPSK, 8PSK demodulation with license keys

#### 100/1000BaseT Input (RX1290/HWO/IP/GIGE)

- MPEG transport stream over IP
- 2x 100/1000BaseT input
- Configurable low latency / Jitter compensation buffer
- SMPTE 2022 Pro-MPEG FEC with license key

#### G.703 ATM Input (RX1290/HWO/G703)

- E3 or DS-3 inputs
- 34 Mbps or 45 Mbps rates

## SOFTWARE OPTIONS

### Input Options

#### DVB-S2 QPSK License (RX1290/SWO/DVBS2/QPSK)

- Adds DVB-S2 QPSK capability to DVB-S2 input option card

#### DVB-S2 8PSK License (RX1290/SWO/DVBS2/8PSK)

- Adds DVB-S2 QPSK, 8PSK capability to DVB-S2 input option card

#### DVB-S2 Low Symbol Rate License (RX1290/SWO/DVBS2/LSYM)

- Enables DVB-S2 symbol rate of 1 to 5 Msym/s

#### SMPTE 2022 Pro-MPEG FEC License (RX1290/SWO/IP/PROMPEG)

- Adds SMPTE 2022 Pro-MPEG FEC capability to IP transport stream input options

### Decoding Options

The RX1290 is designed to support a range of video decoding standards.

#### MPEG-4 AVC SD Decoding (RX1290/SWO/MPEG4/SD)

- Enables MPEG-4 AVC SD decoding

#### MPEG-4 AVC HD Decoding (RX1290/SWO/MPEG4/HD)

- Enables MPEG-4 AVC HD decoding
- Enables MPEG-4 AVC SD decoding
- Enables MPEG-2 4:2:2 HD decoding

#### MPEG-2 4:2:2 HD Decoding (RX1290/SWO/MPEG2 HD/422)

- Enables MPEG-2 4:2:2 HD decoding

#### Down-conversion (RX1290/SWO/DCONV)

- Down-conversion of HD to SD
- Simultaneous presentation of HD and SD on output interfaces

#### Up-conversion (RX1290/SWO/UPCONV)

- Up-conversion from SD to HD

#### Low latency decode (RX1290/SWO/LDELAY)

- Low latency video decode
- 4:2:0 video decode modes only
- MPEG-1 Layer-II audio only

#### Conditional Access Options

The RX1290 supports many types of widely used conditional access systems to allow for secure transmission of content.

#### Director by Ericsson (RX1290/SWO/DIR5)

- Director CA
- Director over-air control
- Director over-air software downloads

#### DVB Common Interface (RX1290/SWO/CI)

- Enables support for Conditional Access modules
- Service pre-filtering

#### RAS 1 and 2 (RX1290/SWO/RAS)

- Ericsson RAS transport stream CA protection

#### Provider Lock (RX1290/SWO/PROV/LOCK)

- Allows services listed by broadcaster ID to be displayed

### Audio Options

#### Dolby® Digital Decode (RX1290/SWO/AC3)

- Enables decoding and pass-through of Dolby Digital Audio
- 2x 5.1 down-mix to 2.0 (stereo)
- 4x 5.1 pass-through (compressed and embedded in (HD)SDI)
- 4x 5.1 pass-through (compressed and embedded in (HD)SDI)

#### AAC Audio Decode (RX1290/SWO/AAC)

- AAC-LC audio when decoding MPEG-2
- HE-AAC audio when decoding MPEG-4 AVC
- 1x 5.1 down-mix to 2.0 (stereo)
- 1x 5.1 decode
- 2x 2.0 decode
- 4x 2.0 decode (with 4x audio license)

#### 4x Audio Capability (RX1290/SWO/4AUD)

- Enables decode and pass-through of audio services three and four

#### Phase Aligned Audio (RX1290/SWO/PAA)

- Phase aligned MPEG-1 Layer II audio capability (MPEG-4 HD only)
- Requires RX1290/SWO/4AUD

## Other Software Options

#### High Speed Data over Ethernet (RX1290/SWO/HSEETHER)

- Ideal for telephony, IP traffic, video streaming
- Uses RX1290's RJ-45 control port
- Up to 5 Mbps data rate

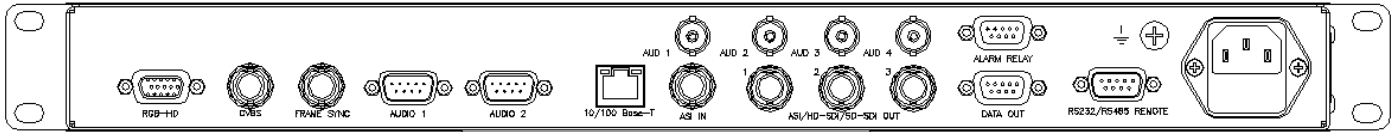
#### Password Protection of Web Browser (RX1290/SWO/PW)

- Protects Web browser from malicious or accidental changes



ERICSSON RX1290 MULTI-FORMAT SD/HD INTEGRATED RECEIVER DECODER

SAMPLE CONFIGURATION



SPECIFICATIONS

Video and Audio Formats

**MPEG-4 AVC (HD)<sup>y</sup>**

Profiles: MP@L4, HP@L4, HP@L4.1

Max. video rate: 20 Mbps, 25 Mbps @ L4.1

Video format: 1080i at 29.97, 30 and 25 fps, 720p at 59.94, 60 and 50 fps

**MPEG-4 AVC (SD)<sup>y</sup>**

Profiles: MP@L3

Max. video rate: 10 Mbps

Video format: 480i and 576i 29.97, 25 fps

**MPEG-2 (HD)<sup>y</sup>**

Profiles: MP@HL, 422@HL<sup>y</sup>

Max. video rate: 50 Mbps (MP@HL) 90 Mbps (422@HL)

Video format: 1080i at 29.97, 30 and 25 fps, 720p at 59.94, 60 and 50 fps

**MPEG-2 (SD)**

Profiles: MP@ML, 422@ML

Max. video rate: 15 Mbps (MP@ML) 50 Mbps (422@ML)

Video format: 480i and 576i 29.97, 25 fps

**Video Processing**

Down-conversion (HD to SD): full frame, center cut out, letter box, anamorphic - manual/AFD controlled

Up-conversion (SD to HD): To 720p or 1080i (4:2:0 modes only)

Aspect ratio conversion: 16:9 to 4:3, 4:3 to 16:9 (4:2:0 modes only)

DVB subtitle burn-in: SD resolution subtitles on SD or HD video, HD resolution subtitles on HD video

**Audio Decoding**

MPEG-1 Layer-II audio

Linear PCM

Dolby<sup>®</sup> Digital down-mix<sup>y\*</sup>

Dolby Digital pass-through<sup>y</sup>

Dolby<sup>®</sup>E pass-through

DTS pass-through

AAC-LC, HE-AAC decode and down-mix<sup>y\*</sup>

Sampling rate: 48 kHz

No. stereo pairs: two or four<sup>y</sup>

**Input Interfaces**

**Frame Synchronization**

Connector: 1x BNC (F) 75 Ohm

Input signal: Analog SD Hsync (black and burst)

**DVB ASI-C**

Connector: 1x BNC (F) 75 Ohm

Max. input rate: 160 Mbps

Packet length: 188/204 byte packets

Standard: EN50083-9

**Gigabit MPEG over IP (Option)**

Connector: 2 x RJ 45

Format: 100/1000BaseT

FEC: SMPTE 2022m (Pro-MPEG)<sup>y</sup>

**DVB-S2 (Option)**

Connector: 4x F-Type (F), 75 Ohm

Modulation: DVB-S QPSK, DVB-S2 QPSK<sup>y</sup> and 8PSK<sup>y</sup>

Frequency range: 950 MHz to 2150 MHz

Input Level: -25 dBm to -65 dBm

Symbol Rate: 1 Msym/s to 45 Msym/s (DVB-S)  
1<sup>y</sup> Msym/s to 31 Msym/s (DVB-S2)

Bit-rate: 81 Mbps Max. (DVB-S2)

FEC, DVB-S: 1/2, 2/3, 3/4, 5/6, 7/8

FEC, DVB-S2 QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10

FEC, DVB-S2 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10

DVB-S2 FEC Frame: Normal Frames

LNB Power: 13V, 18V or off, 22 kHz on/off

Standard: EN300 421, EN302 307

**DVBS2/IF/CONST (Option)**

L-band Inputs: 3 x F-Type (F), 75 Ohm

IF Monitor Input: 1 x IF BNC (F) 75 Ohm

IF Input Freq Range: 50 MHz to 180 MHz (monitor input)

IF Input Level: -15 dBm to -40 dBm

Constellation Output: 2 x BNC I/Q (F) down-sampled

**Ericsson G.703**

Connector: BNC (F)

Network: G.703 compliant PDH

Input: E3 or DS-3 (selectable)

Bit-rates: 34 Mbps or 45 Mbps versions

**Outputs**

**SDI/HD-SDI/DVB ASI-C (Switchable)**

Connector: 3 x BNC 75 ohms

HD-SDI standard: SMPTE 292M

SD-SDI standard: SMPTE 259M

Embedded Audio: SMPTE 299M (HD)  
SMPTE 272M (SD)

Embedded Audio Channels: two or four<sup>y</sup> stereo pairs

ASI standard: EN50083-9

**Video RGB-HD (SVGA)**

Connector: 1x 15-pin D-type

Format: RGB H&V/YPrPb (switchable)

**CVBS**

Connector: 1x BNC 75 ohms

Format: PAL / NTSC

**Audio**

Connector: 2x 9 pin D-type

Analog audio: two balanced stereo pairs

Digital audio: two balanced stereo pairs

4x unbalanced stereo pairs - BNC (F) 75 Ohm

**Data**

RS-232 low speed data (Max. 38.4 kbps)

Ethernet High speed<sup>y</sup> (Max 5000 kbps)

Ericsson proprietary data piping mode

**Features**

Program selection for ATSC, DVB and MPEG-only streams

Input transport rate up to 160 Mbps (Nominal)

One alarm relay

**Conditional Access Options**

Director by Ericsson (option)

DVB Common Interface (option)

RAS 1 and 2 (option)

BISS 1, E

**Control Options**

Front panel keypad and LCD

SNMP

Web browser

Director remote control

Physical and Power

**Dimensions (W x D x H)**

440 x 400 x 44mm (17.2 x 15.75 x 1.75" approx.)

**Input Voltage**

110 VAC / 240 VAC

**Power Consumption**

45W Max. (depending on options fitted)

**Cooling**

Integrated fan

**Environmental Conditions**

**Operating Temperature**

0°C to +50°C (32° to 122°F)

**Storage Temperature**

-20°C to +60°C (4° to 140°F)

**Relative Humidity**

5% to 95%

<sup>y</sup> License key dependent, \*Limited number of decodes

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