



# ERICSSON RX8200

## Advanced Modular Receiver

Broadcasters' requirements for differing equipment configurations and the many and varied ways in which receivers are used is driving the need for a flexible receiver platform. The Ericsson RX8200 Advanced Modular Receiver has been designed to precisely meet these requirements.

By allowing each individual RX8200 to be configured and tailored to the user's precise needs the perfect balance of functionality and cost can be achieved, resulting in a unit having only the required features without the additional expense of superfluous connectivity or functionality.

The RX8200 offers a vast and sophisticated array of configuration possibilities allowing it to cover a broad range of applications. The RX8200 can be tailored to standard definition or high definition uses with MPEG-2 or MPEG-4 decode technology in both 4:2:0 and 4:2:2 modes while connectivity into the receiver is achieved with DVB-S2 satellite, IP, ATM and ASI options.

The high powered processing capabilities of the RX8200 enable the unit to be simply and easily upgraded in the field with additional software options to increment the functionality at any point after initial installation.

## PRODUCT OVERVIEW

### A New Receiver With an Unrivalled Pedigree

The RX8200 Advanced Modular Receiver is Ericsson's fourth generation receiver that builds on the success and knowledge of previous generations of products to ensure an unrivalled level of quality and reliability.

### Increased Distribution Capacity and Efficiency

The RX8200 Advanced Modular Receiver, in combination with Ericsson's MPEG-4 AVC Encoders and DVB-S2 PREKOR™ Satellite Modulators achieves a level of bandwidth efficiency that is unrivalled allowing more HD services per transponder compared with any competing solution.

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

The RX8200 can be integrated into a variety of system architectures, including ASI, IP and satellite delivery systems through a choice of input and output modules. The receiver offers a multitude of IP, audio and video outputs for high quality delivery to all major onward networks.

### Simplified Control and Lower Cost of Operations

Organizations with large populations of RX8200 Advanced Modular Receivers or other Ericsson receivers can simplify control by integrating with the Director by Ericsson control system. Director provides remote, over-air, single-view control from a central location, reducing the need for on-site local operators.

## BASE UNIT FEATURES

### RX8200 – Advanced Modular Receiver

#### (RX8200/BAS, FAZ 101 0113/1)

The following features are available as standard:

- 1x ASI input transport stream input
- Front panel control
- Web browser and SNMP remote control
- Alarm relay and SCTE 35 controlled contact closures for ad-insertion signaling
- Many sophisticated, additional hardware and software based modules available as options

### RX8200 – Advanced Modular Receiver

#### (RX8200/BAS/BSkyB, FAZ 101 0113/71)

Functionality as RX8200/BAS with the addition of:

- NDS BskyB single service descrambling

### RX8200 – Advanced Modular Receiver

#### (RX8200/BAS/2, FAZ 101 0113/2)

Functionality as RX8200/BAS with the addition of:

- Base unit includes MPEG-2 and MPEG-4 4:2:2 decoder card (functionality enabled via additional license keys)

## CONFIGURATION PHILOSOPHY

The RX8200 Advanced Modular Receiver offers ultimate configurability at the point of order allowing the unit to be tailored to your precise needs incorporating just the functionality you require thus allowing an individual and optimal balance of price against functionality.

To configure your individual receiver follow this simple configuration philosophy to allow easy selection of all the features that you require.

## INPUT OPTIONS

The RX8200 Advanced Modular Receiver has a single ASI input as standard and can be configured with one additional choice of inputs type.

### IP Transport Stream Input Options

The RX8200 may be configured with IP transport stream input connectivity via the following options.

#### 100/1000BaseT Input (RX8200/HWO/IP/GIGE, FAZ 101 0113/12)

- MPEG transport stream over IP
- 2x 100/1000BaseT input
- Very low latency

#### SMPTE 2022M Pro-MPEG FEC License (RX8200/SWO/IP/PROMPEG, FAZ 101 0113/37)

- Enables SMPTE 2022M Pro-MPEG FEC capability for the IP input card
- Requires IP input card

### Satellite Input Options

The RX8200 satellite input modules come with DVB-S QPSK support as standard. The unit can optionally be licensed to support the new highly efficient DVB-S2 satellite transmission standard.

#### Second Generation DVB-S2 Capable Satellite Demodulator (RX8200/HWO/DVBS2/2, FAZ 101 0113/6)\*

- 4x L-band inputs
- DVB-S QPSK demodulation
- DVB-S2 QPSK, 8PSK, 16APSK demodulation with license keys
- DVB-S2 multi-transport stream capability with license key

#### Combined DVB-S2 Capable Satellite and IP Input\* (RX8200/HWO/DVBS2/IP, FAZ 101 0113/70)

- 2x L-band inputs
- 2x 100/1000BaseT inputs
- Capability as per individual IP input and 2nd gen. Satellite input cards

#### DVB-S2 QPSK License (RX82XX/SWO/DVBS2/QPSK, FAZ 101 0113/32)

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

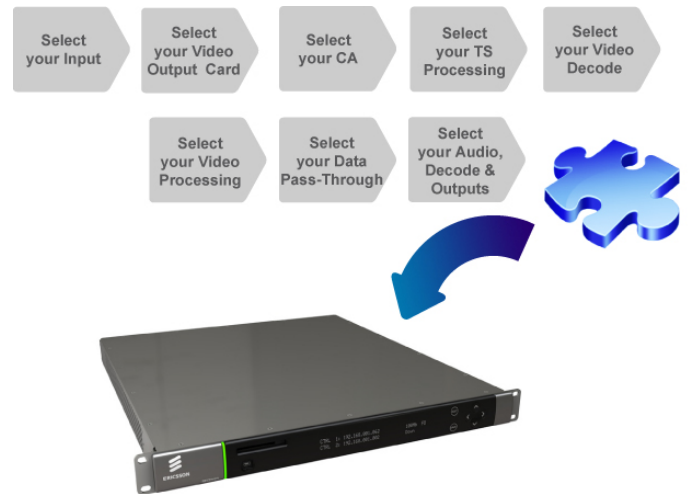
#### DVB-S2 8PSK License (RX82XX/SWO/DVBS2/8PSK, FAZ 101 0113/30)

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

#### DVB-S2 16APSK License (RX82XX/SWO/DVBS2/16APSK, FAZ 101 0113/29)

- Adds DVB-S2 QPSK, 8PSK and 16APSK capability to DVB-S2 input option card
- Second generation DVB-S2 card (RX8200/HWO/DVBS2/2, FAZ 101 0113/6) only

## ERICSSON RX8200 ADVANCED MODULAR RECEIVER



#### DVB-S2 Multi-TS Mode (RX82XX/SWO/DVBS2/VCM, FAZ 101 0113/56)

- Provides DVB-S2 Multi-transport stream input capability
- Single transport stream output from receiver
- Second generation DVB-S2 card (RX8200/HWO/DVBS2/2, FAZ 101 0113/6) only

#### DVB-S2 Low Symbol Rate License (RX82XX/SWO/DVBS2/LSYM, FAZ 101 0113/31)

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

### G.703 ATM Input Option

The RX8200 may be configured with G.703 ATM connectivity.

#### G703 ATM Input (RX8200/HWO/G703, FAZ 101 0113/8)

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

### DVB-T/T2 Input Option\*

The RX8200 may be configured with an input to allow reception of DVB-T and DVB-T2 digital terrestrial signals.

#### DVB-T/T2 Input (RX8200/HWO/DVBT2, FAZ 101 0113/16)\*

- 1x UHF/VHF input
- 7MHz and 8MHz input bandwidth
- DVB-T demodulation. DVB-T2 demodulation with license keys
- Future hardware option, check availability

#### DVB-T2 License (RX82XX/SWO/DVBT2, FAZ 101 0113/69)\*

- Adds DVB-T2 demodulation capability
- No multiple PLPs / channel bonding

### Input Redundancy

The RX8200 Advanced Modular Receiver offers as standard automatic redundancy switching between ASI input and the additional input option. This redundancy switching capability may be further enhanced with the following option.

#### Null Packet Detection Redundancy Switching (RX82XX/SWO/NULL, FAZ 101 0113/48)

- Redundancy switching from primary to secondary input triggered by presence of null packets in the incoming stream
- User definable percent of null packets to trigger redundancy switch



## VIDEO AND TRANSPORT STREAM OUTPUT OPTIONS

The RX8200 Advanced Modular Receiver offers the option of an SD only or HD and SD capable video output card. Both video output card options also provide ASI transport stream output connectivity. IP transport stream output capability may additionally be specified.

### SD Video and ASI Output (RX8200/HWO/SD, FAZ 101 0113/18)

- 2x composite video outputs
- 2x switchable ASI/SDI outputs

### 3 Gbps HD and SD Video and ASI Output (RX8200/HWO/HD/3G, FAZ 101 0113/10)

- 1x composite video output
- 1x RGB/YPrPb analog video output
- 3x switchable ASI/SDI/HD-SDI outputs
- 3 Gbps HD-SDI output compatible with MPEG-4 4:2:2 1080p50/60 capability

### IP Transport Stream Output (RX8200/HWO/IP/OUT, FAZ 101 0113/14)

- Encapsulation of transport stream output into IP multicast
- MPTS or single or multiple SPTS output stream with licence key
- 2x Gigabit Ethernet RJ-45 interfaces capability

### SMPT E 2022M Pro-MPEG FEC License

#### (RX8200/SWO/IP/OUT/PROMPEG, FAZ 101 0113/36)

- Enables SMPT E 2022M Pro-MPEG FEC capability for the IP output card
- Requires IP output card

## CONDITIONAL ACCESS OPTIONS

The RX8200 Advanced Modular Receiver supports many types of widely used conditional access systems to allow for secure transmission of content. By default the RX8200 is fitted with the capability to accept a Conditional Access Module. Alternatively the RX8200 may be ordered with the capability to directly accept NDS BSKyB CA smart cards.

### Director by Ericsson (RX8200/SWO/DIR, FAZ 101 0113/27)

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

### Director by Ericsson Multi-service Decryption (RX8200/SWO/DIR5/MSD, FAZ 101 0113/28)

- Multi-service decryption for Director by Ericsson

### DVB Common Interface (RX8200/SWO/CI, FAZ 101 0113/25)

- Enables support for Conditional Access modules

### DVB Common Interface Multi-service Decryption (RX8200/SWO/MSD, FAZ 101 0113/46)

- Multi-service decryption DVB Common Interface

### BISS CA (RX8200/SWO/BISS, FAZ 101 0113/23)

- BISS Mode 1 and BISS Mode E descrambling

### BISS Multi-service CA (RX8200/SWO/BISS/MSD, FAZ 101 0113/24)

- Multi-service decryption for BISS

### NDS BSKyB CA (RX8200/BAS/BSKYB, FAZ 101 0113/71)

- Single service decryption for BSKyB services
- Mutually exclusive with other CA types

### Ericsson RAS CA (RX8200/SWO/RAS, FAZ 101 0113/52)

- Ericsson RAS 1

## SECURITY OPTIONS

### Password Protection of Web Browser (RX8200/SWO/PW, FAZ 101 0113/51)

- Protects Web browser from malicious or accidental changes

## STREAM PROCESSING OPTIONS

The RX8200 Advanced Modular Receiver offers as sophisticated choice of transport stream processing capability allowing the unit to operate as a cost effective network interface into a headend or transport stream turn-around system

### Single Service Filtering (RX8200/SWO/SING/SERVFILT, FAZ 101 0113/53)

- Filter multiple services to output a single service
- Re-map PIDs for the outgoing service

### Multi-Service Filtering (RX8200/SWO/MULT/SERVFILT, FAZ 101 0113/47)

- Filter N multiple incoming services to M outgoing services
- Re-map PIDs for a single service
- CBR MPTS transport stream output
- Service splitting for multiple IP SPTS output

## VIDEO DECODING OPTIONS

The RX8200 Advanced Modular Receiver provides capability to decode every video compression standard in use today including support for the highest quality MPEG-4 AVC 4:2:2 and JPEG 2000 \*standards.

In order to offer ultimate cost effectiveness and flexibility JPEG 2000\*, 4:2:2 and 4:2:0 video standards are ordered separately.

### 4:2:0 Decode Options

#### MPEG-2 SD 4:2:0 Decoding (RX8200/SWO/MPEG2/SD, FAZ 101 0113/45)

- Enables MPEG-2 SD 4:2:0 decoding

#### MPEG-2 HD 4:2:0 Decoding (RX8200/SWO/MPEG2/HD, FAZ 101 0113/44)

- Enables MPEG-2 SD and HD 4:2:0 decoding

#### MPEG-4 AVC SD 4:2:0 Decoding (RX8200/SWO/MP2/MP4/SD, FAZ 101 0113/40)

- Enables MPEG-2 and MPEG-4 AVC SD 4:2:0 video decoding
- High bit rate SD MPEG-4 4:2:0 video decoding in conjunction with RX8200/BAS/2 unit

#### MPEG-4 AVC HD 4:2:0 Decoding (RX8200/SWO/MP2/MP4/SD/HD, FAZ 101 0113/41)

- Enables MPEG-2 SD and HD, MPEG-4 AVC SD and HD 4:2:0 decoding
- High bit rate HD MPEG-4 4:2:0 video decoding in conjunction with RX8200/BAS/2 unit

#### 4:2:2 Decode Options

##### MPEG-2 4:2:2 Decoding Hardware

(RX8200/HWO/MP2/422, FAZ 101 0113/15)

- Dormant hardware for MPEG-2 4:2:2 decoding
- Enable MPEG-2 4:2:2 decoding with additional options

##### MPEG-2 SD 4:2:2 Decoding

(RX8200/SWO/MP2/422/SD, FAZ 101 0113/59)

- Enables MPEG-2 SD 4:2:2 decoding
- Requires MPEG-2 4:2:2 only hardware or MPEG-2 & 4 4:2:2 hardware (RX8200/BAS/2, FAZ 101 0113/2)

##### MPEG-2 HD 4:2:2 Decoding

(RX8200/SWO/MP2/HD/422, FAZ 101 0113/39)

- Enables MPEG-2 HD 4:2:2 decoding
- Requires MPEG-2 SD 4:2:2 decoding option

##### MPEG-2 and MPEG-4 AVC SD 4:2:2 Decoding

(RX8200/SWO/MP4/422/SD, FAZ 101 0113/43)

- Enables MPEG-4 AVC SD 4:2:2 decoding
- Enables MPEG-2 SD 4:2:2 decoding
- Requires RX8200/BAS/2, FAZ 101 0113/2 unit

##### MPEG-2 and MPEG-4 AVC HD 4:2:2 Decoding

(RX8200/SWO/MP4/422/HD, FAZ 101 0113/42)

- Enables MPEG-4 AVC HD 4:2:2 decoding
- Enables MPEG-2 HD 4:2:2 decoding
- Requires MPEG-2 and MPEG-4 AVC SD 4:2:2 option

##### MPEG-4 AVC HD 4:2:2 1080p 50/60 Decoding

(RX8200/SWO/HDSDI/3G, FAZ 101 0113/34)\*

- Enables MPEG-4 AVC HD 4:2:2 1080p50/60 decoding
- Enables 3Gig HD-SDI output
- Requires MPEG-2 and MPEG-4 AVC HD 4:2:2 decoding option
- Requires 3Gig HD-SDI output card option

## VIDEO PROCESSING OPTIONS

The RX8200 offers a wide range of video processing options to allow the decoded video to easily interface to HD and SD infrastructures.

##### High Quality Down-conversion

(RX8200/HWO/HQDCONV, FAZ 101 0113/60)

- Grade 1 quality Down-conversion of HD to SD
- Provides broadcast quality down-conversion allowing one HD transmission to address both HD and SD distribution needs
- Simultaneous presentation of HD and SD on video output interfaces

##### Down-conversion (RX8200/SWO/DCONV, FAZ 101 0113/26)

- Grade 2 quality Down-conversion of HD to SD
- Simultaneous presentation of HD and SD on video output interfaces

##### Up-conversion (RX8200/SWO/UPCONV, FAZ 101 0113/54)

- Up-conversion of SD to HD resolution (4:2:0 modes only)
- Non-simultaneous up-conversion to 720p or 1080i resolution

##### Cross-conversion (RX8200/SWO/XCONV, FAZ 101 0113/55)

- Conversion of HD video from 720p to 1080i or from 1080i to 720p

##### Low Latency Decode (RX8200/SWO/LDELAY, FAZ 101 0113/38)

- Low latency video decode (4:2:0 and 4:2:2 modes)
- Compatible with MPEG-1 Layer-II, Dolby® Digital or AAC audio options

##### Frame Sync Input (RX8200/SWO/FSYNC, FAZ 101 0113/33)

- Synchronizes the IRD to the house black and burst reference
- Frame Sync functionality often partners 4:2:2 decoding applications

##### Simulsync 3D Decode (RX8200/SWO/3D, FAZ 101 0113/61)

- Provides full frame , synchronized left & Right eye 3D capability
  - Additionally requires Frame Sync, Down-conversion options
- Requires separate RX8200 units for left & Right eye video decode

## DATA AND CONTROL OPTIONS

The RX8200 Advanced Modular Receiver can be further enhanced by a range of data pass-through and remote control capabilities.

##### RS232 Remote Control and Data

(RX8200/HWO/RS232, FAZ 101 0113/17)

- RS232 remote control\* - Altea protocol
- RS232 data output

##### High speed IP data output (RX8200/SWO/IP/DATA, FAZ 101 0113/35)

- MPE based data de-encapsulation of IP data
- Requires IP TS output option (RX8200/HWO/IP/OUT, FAZ 101 0113/14)

## AUDIO OPTIONS

The RX8200 Advanced Modular Receiver provides many different audio capabilities to allow optimal connectivity for many wide-ranging and varied applications. Capability for MPEG-1 Layer II audio is provided with any video decode license. Decoded audio will be embedded in (HD)SDI outputs and output via physical audio interfaces if ordered.

##### Balanced Audio Output (RX8200/HWO/BAL/AUD, FAZ 101 0113/3)

- 2x stereo pairs of balanced analog and digital outputs
- Order QTY two for 4x stereo pair capability

##### Unbalanced Audio Output

(RX8200/HWO/UNBAL/AUD, FAZ 101 0113/19)\*

- 2x stereo pairs of unbalanced digital outputs
- Order QTY two for 4x stereo pair capability

##### Dolby® Digital Decode (RX8200/SWO/AC3, FAZ 101 0113/22)

- Enables decoding or pass-through of Dolby Digital Audio
- 2x 5.1 decode and down-mix to 2.0 (stereo)
- 1x full 5.1 decode - with 4 Audio license
- 2x 2.0/5.1 pass-through -compressed and embedded in (HD)SDI

##### AAC Audio decode (RX8200/SWO/AAC, FAZ 101 0113/21)

- 2x AAC-LC and HE-AAC decoding

##### Phase Aligned Audio (RX8200/SWO/PAA, FAZ 101 0113/49)

- Phase aligned MPEG-1 Layer II audio - 4x stereo pairs
- Requires 4x Audio license (RX8200/SWO/4AUD, FAZ 101 0113/20)

##### 4x Audio Capability (RX8200/SWO/4AUD, FAZ 101 0113/20)

- Enables up to six decodes
- Enables pass-through of audio services three and four
- Compatible with MPEG-1 Layer II, Dolby Digital, AAC, Dolby®E and linear audio
- Embeds up to six channels of audio into the (HD) SDI video output
- Requires QTY two audio output cards if four stereo pairs of physical audio interfaces are desired

##### XLR Terminal Audio Break-Out Cable

(RX8XXX/CABLE/XLR, FAZ 101 0108/24)

- Provides XLR terminal connections for analogue and digital audio output
- 1x stereo pair per breakout cable via 2x XLR connectors

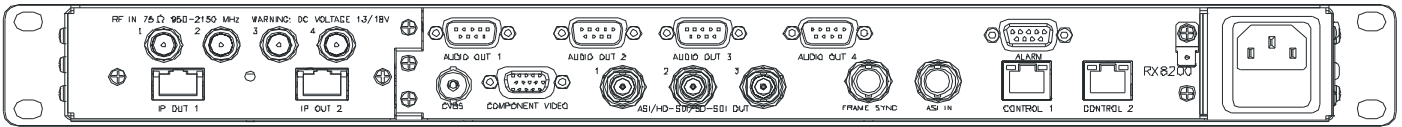
##### Screw Terminal Audio Break-Out Cable

(RX8XXX/CABLE/SCRTRM, FAZ 101 0108/23)

- Provides screw terminal connections for analog and digital audio output
- 1x stereo pair per breakout cable via 2x Screw terminal connectors

\*Check availability

## SAMPLE CONFIGURATION



Sample configuration with: Satellite input, frame sync, HD video output, IP transport stream output and 2x Audio output modules installed

## SPECIFICATIONS

### STANDARD FEATURES

#### Input Interfaces

##### ASI Transport Stream Input

Connector: 1x BNC (F) 75 Ohm

Max. input rate: 160 Mbps

Packet length: 188/204 byte packets

Standard: EN50083-9

#### Features

Program selection for ATSC, DVB and MPEG-only streams

One alarm relay, two relays under SCTE 35 control

Service cycling through all decodable services

#### Control

Front panel keypad and LCD

SNMP control, traps and alarms

Web browser

### INPUT OPTIONS

#### Satellite Input Options

##### 2nd Generation Satellite Input, Satellite & IP input

(FAZ 101 0113/6, FAZ 101 0113/70)

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

Modulation: DVB-S QPSK

Standard: EN300 421

Frequency range: 950 MHz to 2150 MHz

Input level: -25 dBm to -65 dBm

DVB-S Symbol rate: 1 Msyms to 45 Msyms

DVB-S2 Symbol rate: 1<sup>∨</sup>(5) Msyms to 60Msyms on inputs 1 & 2, Max bit rate 170Mbps, 31 Msyms, Max bit rate: 81Mbps on input 3 & 4

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

DVB-S2 FEC frame: Short & Normal frames

DVB-S2 Physical layer scrambling

DVB-S2 multi-transport stream via additional license

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

##### DVB-S2 QPSK (FAZ 101 0113/32)

Modulation: DVB-S2 QPSK

Standard: EN302 307

Symbol rate: 5 to 31 (60) Msyms

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

##### DVB-S2 8PSK (FAZ 101 0113/30)

Includes DVB-S2 QPSK functionality

Modulation: DVB-S2 8PSK

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

##### DVB-S2 16APSK (FAZ 101 0113/29)

Includes DVB-S2 QPSK and 8PSK functionality

Modulation: DVB-S2 16APSK

FEC, DVB-S2 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10

Requires FAZ 101 0113/6 option

##### DVB-S2 Low Symbol Rate (FAZ 101 0113/31)

Symbol rate - extended to 1 to 31 (60) Msym/s

Applies to DVB-S2 modes only

#### IP Input Options

##### MPEG over Gigabit Ethernet IP Input, Satellite & IP input (FAZ 101 0113/12, FAZ 101 0113/70)

Connector: 2 x RJ 45

Format: 100/1000BaseT

Max. input rate: 208Mbps

##### SMPT E 2022M Pro-MPEG FEC (FAZ 101 0113/37)

SMPT E 2022M (Pro-MPEG) FEC

#### G703 Input Options

##### Ericsson G.703 (FAZ 101 0113/8)

Connector: BNC (F)

Network: G.703 compliant PDH

Input: E3 or DS-3 (selectable)

Bit-rates: 34 Mbps or 45 Mbps versions

#### DVB-T/T2 Input Options

##### DVB-T/T2 Input (FAZ 101 0113/70)\*

Connector: 1x F-Type (F) 75 Ohm

Channel bandwidth: 7, 8MHz

Frequency range: UHF 470 – 862 MHz, VHF 174 – 230 MHz

Input MER level: 6 - 36dB

### VIDEO AND TS OUTPUT OPTIONS

#### Video Output Options

##### SD Video Output (FAZ 101 0113/18)

###### Composite Video

Connector: 2x BNC (F) 75 Ohm

Format: PAL / NTSC

###### SDI/DVB ASI-C (Switchable)

Connector: 2x BNC 75 ohms

SD-SDI standard: SMPTE 259M

Embedded Audio: SMPTE 272M (SD)

Embedded Audio Channels: two, four or six stereo pairs

ASI standard: EN50083-9

##### HD and SD Video Output (FAZ 101 0113/10)

###### Composite Video

Connector: 1x BNC (F) 75 Ohm

Format: PAL / NTSC

###### Video RGB-HD (SVGA)

Connector: 1x 15-pin D-type

Format: RGB H&V/YPrPb (switchable)

###### SDI/HD-SDI/DVB ASI-C (switchable)

Connector: 3x BNC 75 ohms

3 Gbps HD-SDI standard: SMPTE 424M

HD-SDI standard: SMPTE 292M

SD-SDI standard: SMPTE 259M

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

Embedded Audio Channels: two, four or six stereo pairs

ASI standard: EN50083-9

<sup>∨</sup>License key dependant

\*Check availability



## SPECIFICATIONS

## ERICSSON RX8200 ADVANCED MODULAR RECEIVER

### TS Output Options

For ASI Output See HD and SD video output options

#### IP Output (FAZ 101 0113/14)

Transport encapsulation into IP

MPTS/IP/UDP

SPTS/IP/UDP with single service filtering - CBR mode

IP output VBR mode - Null packets dropped

2x Gigabit Ethernet outputs, 100/1000 auto-sensing

#### SMPTE 2022M Pro-MPEG FEC (FAZ 101 0113/36)

SMPTE 2022M (Pro-MPEG) FEC

### Conditional Access Options

#### Director by Ericsson (FAZ 101 0113/27)

Director single service decryption

Director over-air remote control

Director overt fingerprinting

#### Director by Ericsson Multi-service Decryption (FAZ 101 0113/28)

Director multi-service decryption

Decryption of up to 24 services

#### DVB Common Interface (FAZ 101 0113/25)

Enables support for all major CAM modules

Single service decryption

Service pre-filtering

#### DVB Common Interface Multi-service Decryption (FAZ 101 0113/46)

Single CAM, up to 10 services or 24 PIDs

#### BISS Decryption (FAZ 101 0113/23)

Decryption of BISS Mode 1 and E

#### BISS Multi-service Decryption (FAZ 101 0113/24)

Decryption of up to 24 services

Multiple BISS keys\*

#### NDS BSKyB CA (FAZ 101 0113/71)

Accepts BSKyB smart card

Single service descrambling

Mutually exclusive with other CA types

#### RAS Decryption (FAZ 101 0113/52)

Decryption of Ericsson RAS 1

### Stream Processing Options

#### Single Service Filtering (FAZ 101 0113/53)

Filter multiple services to 1 outgoing service

Remap PIDs for the filtered service

Output: CBR on ASI and IP SPTS

#### Multi-Service Filtering (FAZ 101 0113/47)

Filter N incoming services to M outgoing services

Number of services: 24 max as 1x MPTS.

Remap PIDs on a single service

Output: CBR on ASI and IP MPTS

Stream splitting - up to 8 services as IP SPTS

### VIDEO DECODING OPTIONS

#### 4:2:0 Decoding

##### MPEG-2 SD Decode (FAZ 101 0113/45)

Profiles: MP@ML

Max video rate: 15 Mbps (MP@ML)

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

##### MPEG-2 HD Decode (FAZ 101 0113/44)

Includes MPEG-2 SD 4:2:0

Profiles: MP@HL

Max. video rate: 80 Mbps (MP@HL)

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

##### MPEG-4 AVC SD Decode (FAZ 101 0113/40)

Includes MPEG-2 SD 4:2:0

Profiles: MP@L3 - All units

MP@L3.1—RX8200/BAS/2

Max. video rate: 12 Mbps - All units

17.5 Mbps - RX8200/BAS/2

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

##### MPEG-4 AVC HD Decode (FAZ 101 0113/41)

Includes MPEG-2 SD and HD 4:2:0

Includes MPEG-4 AVC SD

Profiles: MP@L4, HP@L4 - All units

HP@L4.1 - RX8200/BAS/2

Max. video rate: 25 Mbps - All units,

62.5Mbps RX8200/BAS/2

Video format: 1080i at 29.97 and 25 fps,

720p at 59.94 and 50 fps

### VBI with 4:2:0 Decoding Modes

Closed captions, DVB Subtitle burn-in, SD Teletext burn-in\*

WST, Inverted Teletext, EBU Teletext subtitles and non-subtitles, WSS, VITC, VITC in PES, VPS, Video Index, AFD Pass-through, VANC data-piping, Service name in VANC, monochrome samples, OP47 pass-through\*

VITS, NABTS, AMOL 48, AMOL 96, TV Guide

### 4:2:2 Decoding

#### MPEG-2 SD 4:2:2 (FAZ 101 0113/59)

Profile: 422@ML

Max. video rate: 50 Mbps

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

#### MPEG-2 HD 4:2:2 (FAZ 101 0113/39)

Profiles: 422P@HL

Max. video rate: 90 Mbps

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

#### MPEG-4 AVC SD 4:2:2 (FAZ 101 0113/43)

Includes MPEG-2 SD 4:2:2

MPEG-4 Profile: 422HP@L3

Max. video rate: 50 Mbps

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

#### MPEG-4 AVC HD 4:2:2 Decode (FAZ 101 0113/42)

Requires RX8200/BAS/2 unit

Includes MPEG-2 HD 4:2:2

MPEG-4 Profiles: HIGH / HIGH10 / HIGH422@L4.2

Sampling: 8-bit and 10-bit

Max. video rate: 50 Mbps CABAC, 85 Mbps CAVLC

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

#### MPEG-4 AVC HD 4:2:2 1080p 50/60 decode (FAZ 101 0113/34)\*

Profiles: 422HP@L4.2

Max video rate: 85 Mbps CAVLC

Video format: 1080p at 59.94 and 50fps

### VBI with 4:2:2 decoding modes

Closed Captions, VITC, VBI in PIX

<sup>‡</sup>License key dependant

\*Check availability



## SPECIFICATIONS

### Video Processing Options

#### High Quality Down-conversion (FAZ 101 0113/60)

Grade 1 quality down-conversion

Simultaneous Down-conversion (HD to SD): center cut out, manual/AFD controlled

#### Down-conversion (FAZ 101 0113/26)

Grade 2 quality down-conversion

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

#### Up-conversion (FAZ 101 0113/54)

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

#### Cross-conversion (FAZ 101 0113/55)

Non-simultaneous cross-conversion 720p to 1080i or 1080 to 720p

No frame rate conversion

#### Aspect Ratio Conversion

16:9 to 4:3 center cut ARC in SD modes

#### Frame Synchronization (FAZ 101 0113/33)

Enables Frame Sync

Connector: 1x BNC (F) 75 Ohm

Input signal: Analog SD Hsync (black & burst)

### Data and Control Options

#### RS232 Remote Control and Data (FAZ 101 0113/17)

Remote control connector: 1x 9-pin D-type

RS232 remote control\*

Ericsson Alteia protocol

RS232 data connector: 1x 9-pin D-type

RS232 asynchronous data

RS232 data rate: Max. 38.4 kbps

#### IP High Speed Data (FAZ 101 0113/35)

MPE based data de-encapsulation

Max. bit-rate: 100 Mbps

Requires IP TS output card

### Audio Options

#### Balanced Audio Output (FAZ 101 0113/3)

Connector: 2x 9-Pin D-type

Analog audio: two balanced stereo pairs

Digital audio: two balanced stereo pairs

Order QTY 0, 1 or (2 - requires RX8200/SWO/4AUD)

#### Unbalanced Audio Output (FAZ 101 0113/19)\*

Connector: 2x BNC (F) 75 Ohm

Digital audio: two balanced stereo pairs

Order QTY 0, 1 or (2 - requires RX8200/SWO/4AUD)

#### Standard with any Video Decode Option:

2x MPEG-1 Layer-II audio decode

2x Dolby® Digital Plus Pass-through

2x Dolby® E pass-through

2x Linear PCM decode

Audio sampling rate: 48 kHz

Decoded audio gain adjustment

#### Dolby® Digital (FAZ 101 0113/22)

2x Dolby® Digital 5.1 decode and down-mix to 2.0

2x Dolby® Digital 2.0/5.1 pass-through compressed and embedded in (HD)SDI

1x Dolby® Digital 5.1 decode<sup>∇</sup>

#### Dolby® Digital Plus\*

2x Dolby® Digital Plus 2.0/5.1 pass-through compressed and embedded in (HD)SDI

#### AAC Audio (FAZ 101 0113/21)

2x 5.1 down-mix to 2.0

2x 2.0 decode

1x 5.1 decode<sup>∇</sup>

#### Phase Aligned Audio (FAZ 101 0113/49)

MPEG-1 Layer II audio

4x stereo pairs, Phase aligned to enable 5.1 carriage

2x stereo pairs, non phase aligned audio

Requires 4x audio license FAZ 101 0113/20

#### 4x Audio Capability (FAZ 101 0113/20)

Extends licensed audio decodes to more channels

6x MPEG-1 Layer II audio decode

6x Dolby® Digital 2.0 decode, 5.1 to 2.0 down-mix

4x Dolby® Digital 2.0/5.1 pass-through - compressed and embedded in (HD)SDI

4x Dolby® Digital Plus 2.0/5.1 pass-through - compressed and embedded in (HD)SDI

6x 5.1 AAC down-mix to 2.0

6x 2.0 AAC decode

4x Dolby® E pass-through

4x Linear PCM pass-through

### Physical and Power

#### Dimensions (W x D x H)

442.5 x 545 x 44mm (17.5" x 20.7" x 1.75" approx.)

#### Input Voltage

110 VAC / 240 VAC

#### Power Consumption

120W 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%

### Compliance

CE marked in accordance with EU Low Voltage and EMC Directives

#### EMC Compliance

EN55022, EN61000-3-2, EN61000-3-3, EN55024, CISPR22, FCC CFR47 Part 15B Class A

#### Safety Compliance

EN60950-1, IEC60950-1, UL60950-1

<sup>∇</sup>License key dependant

\*Check availability