



# ERICSSON RX8200

## Advanced Modular Receiver

The RX8200 Advanced Modular Receiver is the world's bestselling IRD. Now with DVB-S2X and HEVC upgradeability it is also the most future-proof.

Broadcasters need to deploy receivers for many different tasks in many different operational circumstances. Ericsson's RX8200 receiver offers ultimate operational flexibility by providing capability for decoding of all video formats, all video compression formats and total connectivity for all transmission mediums via a comprehensive choice of options.

The RX8200 offers the ultimate in compression efficiency. RX8200 now provides HEVC decode capability. And for satellite operators RX8200 offers up to 20% bandwidth efficiency gains through full support of the new DVB-S2X international open standard. Combined, these two new technologies offer a step-change in transmission efficiency enabling Operators to dramatically reduce operational costs or free-up bandwidth to launch new revenue generating services.

## PRODUCT OVERVIEW

### Best Efficiency

The RX8200 Advanced Modular Receiver offers ultimate bandwidth efficiency for satellite transmissions by incorporating the option for the new DVB-S2 Extensions (DVB-S2X) standard. DVB-S2X offers up to 20% bit rate efficiency for typical video applications.

### Multi-format Decoding - Including HEVC

As a true multi-format decoder, the RX8200 can offer MPEG-4 AVC 4:2:0 and 4:2:2 High Definition decoding in all industry-standard compression formats - Including HEVC. By using HEVC compression, combined with DVB-S2X (for satellite applications), Operators can benefit from a step-change in transmission efficiency

### Content Security and Traceability

The RX8200 protects content to the fullest extent by combining secure, smart-card-less conditional access functionality with forensic watermarking capability to uniquely and imperceptibly mark decoded content - allowing any down-stream leaked content to be traced back to source.

### Total Connectivity

The RX8200 Advanced Modular Receiver offers the user total connectivity through the capability to provide satellite, ASI and IP transport stream inputs - including the latest SMPTE 2022-7 Seamless Switching technology, all within a single unit. With this flexibility the user is confident that their initial receiver investment is capable of adapting to a fast changing industry.

### Highest Quality

The RX8200 Advanced Modular Receiver has the capability to provide the ultimate feature-set of MPEG-4 HD, 4:2:2 10-bit 1080p50/60 allowing broadcasters to achieve the highest possible video quality.

### Lowest Latency

Broadcasters are increasingly demanding lowest latency for contribution and news applications. Ericsson offers the complete low latency suite of tools for the user – whether that be high quality MPEG-4 decoding or in the latest HEVC compression modes for optimal efficiency for satellite applications.

### Why Ericsson

The Ericsson RX8200 Advanced Modular Receiver heads its class as an IRD offering the perfect balance of industry leading capability, flexibility and affordability.

## BASE UNIT FEATURES

### RX8200 – Advanced Modular Receiver

The following is available as standard:

**Chassis: (RX8200/BAS/B, FAZ 101 0113/248)**

**Base Value Pack: (RX8200/SWO/VP/BASE, FAZ 101 0113/249)**

- Easy to use Dashboard web interface
- 1x ASI input transport stream input
- Frame Sync input
- BISS, Common Interface & Ericsson Director descrambling
- Ericsson RAS descrambling
- SD & HD Video output interfaces
- Single service filtering
- 2x Stereo pairs of physical audio connections
- Dolby Digital® decoding and pass-through
- Alarm relay and SCTE 35 controlled contact closures for ad-insertion signaling

RX8200 can be equipped with the following capability via additional Value Packs:

- MPEG-2 and MPEG-4 4:2:0SD decode capability
- MPEG-2 and MPEG-4 4:2:0 SD/HD decode capability
- MPEG-2, MPEG-4 and HEVC 4:2:0 SD/HD decode capability
- MPEG-2 4:2:2, MPEG-4 4:2:2 SD/HD capability
- MPEG-2 4:2:2, MPEG-4 and HEVC 4:2:2 SD/HD capability

A comprehensive range of input options is also available including latest DVB-S2X satellite inputs, OFDM DVB-T and T2 and IP interfacing.

## CONNECTIVITY OPTIONS

The RX8200 Advanced Modular Receiver has a single ASI input as standard and can be configured with additional inputs

### IP Transport Stream Input/Output Options

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

#### IP Transport Stream Input/Output

**(RX8200/HWO/IP//O/B, FAZ 101 0113/281)**

- IP transport stream output capability
- IP transport stream input capability with additional Value Pack
- 2x Gigabit Ethernet RJ-45 interfaces capability
- Encapsulation of transport stream on IP multicast
- Includes single service filtering on single SPTS IP output
- Remap outgoing PIDs when service filtering
- Includes SMPTE 2022M Pro-MPEG FEC capability for IP output
- Includes MPE based data de-encapsulation of IP data
- Multiple SPTS output stream with Multi-service Filtering Value Pack

#### IP Transport Stream Input Value Pack

**RX8200/SWO/VP/IP/IN, FAZ 101 0113/252)**

- Enables IP transport stream input for IP In/out card
- MPEG transport stream Input over IP
- 2x 100/1000BaseT input
- Very low latency
- SMPTE 2022M Pro-MPEG FEC capability included

#### IP Transport Stream Input with Seamless Switching Value Pack

**RX8200/SWO/VP/IP/SEAMLESS, FAZ 101 0113/253)**

- Enables SMPTE 2022-7 Seamless Switching on IP input
- Includes all other functionality as RX8200/SWO/VP/VP/IP/IN

### Satellite Input Options

Ericsson offers capability for all satellite transmission standards including the new DVB-S2X international open standard which can deliver up to 20% efficiency gains over DVB-S2.

#### DVB-S2X Satellite Input

**(RX8200/HWO/S2X/B, FAZ 101 0113/278)**

- 4x L-band inputs
- DVB-S QPSK demodulation
- DVB-S2 QPSK, 8PSK, 16APSK demodulation
- DVB-S2X QPSK, 8PSK, 16APSK demodulation
- Low symbol rate capability
- Rolloffs down to 5%
- Multiple (x3) PL scrambling/Gold Code search
- DVB-S2 32APSK demodulation with additional Value Pack

#### DVB-S2X Higher Order Modulation Value Pack

**(RX82XX/SWO/VP/S2X/HOM, FAZ 101 0113/251)**

- Adds DVB-S2X 32APSK capability to DVB-S2X satellite input option

#### Second Generation DVB-S2 Capable Satellite Input

**(RX8200/HWO/S2/2/B, FAZ 101 0113/277)**

- 4x L-band inputs
- DVB-S QPSK demodulation included
- DVB-S2 QPSK, 8PSK demodulation included
- DVB-S and DVB-S2 low symbol rate capability included
- Multiple (x3) PL scrambling/Gold Code search
- DVB-S2 16APSK & 32APSK demodulation with additional Value Pack

#### DVB-S2 Higher Order Modulation Value Pack

**(RX82XX/SWO/VP/S2/HOM, FAZ 101 0113/250)**

- Adds DVB-S2 16APSK and 32APSK capability to S2 satellite input option card

#### 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/OFDM/B FAZ 101 0113/279)

- 1x UHF/VHF input
- 6MHz, 7MHz and 8MHz input bandwidth
- DVB-T demodulation
- DVB-T2 demodulation capability
- Dual PLPs

#### G.703 ATM Input Option

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

#### G703 ATM Input (RX8200/HWO/G703/B, FAZ 101 0113/280)

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

#### Input Redundancy

The RX8200 Advanced Modular Receiver offers as standard automatic redundancy switching between ASI input and the additional input option.

## REMOTE CONTROL OPTIONS

The RX8200 Advanced Modular Receiver can be further enhanced by remote control capabilities.

#### RS232 Remote Control and Data

**(RX8200/HWO/RS232/B, FAZ 101 0113/283)**

- RS232 remote control - Altea protocol
- RS232 data output

## 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 Conditional Access Modules and comes pre-enabled for all frequently used single service CA systems. Additionally, the RX8200 may be ordered with the enhanced capability to support multi-service decryption

#### Multi-service Decryption

**(RX8200/SWO/VP/MSD, FAZ 101 0113/254)**

- Multi-service decryption for Director by Ericsson
- Multi-service decryption DVB Common Interface
- Multi-service decryption for BISS
- Multi-service filtering (n from m service filtering)

\* Check availability

## VIDEO DECODING OPTIONS

The RX8200 Advanced Modular Receiver provides capability to decode every video compression standard in use today including support for the newest and highest quality HEVC 4:2:2.

The RX8200 can be configured with the video decode capability of your choice—from the simplest SD to the most sophisticated HEVC 4:2:2 HD decoding.

### 4:2:0 Decode Options

#### **MPEG-2 and MPEG-4 AVC SD 4:2:0 Decoding Value Pack (RX8200/SWO/VP/MP24/SD, FAZ 101 0113/255)**

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

#### **MPEG-2 and MPEG-4 AVC SD/HD 4:2:0 Decoding Value Pack (RX8200/SWO/VP/MP24/HD, FAZ 101 0113/256)**

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

#### **HEVC, MPEG-4, MPEG-2 SD/HD 4:2:0 Decoding Value Pack (RX8200/SWO/VP/HEVC, FAZ 101 0113/257)**

- Enables MPEG-2 SD and HD, MPEG-4 AVC SD and HD, HEVC SD and HD 4:2:0 decoding
- Requires additional RX8200/HWO/HEVC/B option

### 4:2:2, Contribution Decode Options

#### **HEVC 1080p, MPEG-2/MPEG-4 4:2:2 Decoding Hardware (RX8200/HWO/HEVC/B, FAZ 101 0113/284)**

- Dormant hardware for HEVC and MPEG-2/MPEG-4 4:2:2 decoding
- HEVC 4:2:0 and 4:2:2 capable decoding hardware - up to 1080p
- Enables Low Latency decoding on any decode Value Pack purchased
- Enable decoding with additional Value Packs

#### **MPEG-4 AVC and MPEG-2 SD & HD 4:2:2 Contribution Decoding Value Pack (RX8200/SWO/VP/CONT, FAZ 101 0113/258)**

- Enables MPEG-4 AVC SD & HD 4:2:2 decoding
- Enables MPEG-2 SD & HD 4:2:2 decoding
- Requires additional RX8200/HWO/HEVC/B option

#### **HEVC, MPEG-4 AVC and MPEG-2 SD & HD 4:2:2 Contribution Decoding Value Pack (RX8200/SWO/VP/CONT/HEVC, FAZ 101 0113/259)**

- Enables HEVC SD & HD 4:2:2 decoding
- Enables MPEG-4 AVC SD & HD 4:2:2 decoding
- Enables MPEG-2 SD & HD 4:2:2 decoding
- Requires additional RX8200/HWO/HEVC/B option

## VIDEO PROCESSING OPTIONS

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

### **High Quality Format Conversion Dormant Hardware (RX8200/HWO/HQCONV/B, FAZ 101 0113/285)**

- Dormant format conversion hardware - Functionality enabled with additional Value Pack

### **High Quality Format Conversion Value Pack (RX8200/SWO/VP/HQCONV, FAZ 101 0113/262)**

- Grade 1 quality Down-conversion of HD to SD
- Capability to Down-convert 1080p 50/60 to 1080i, 720p or SD
- Provides broadcast quality simultaneous down-conversion allowing one HD transmission to address both HD and SD distribution needs
- Up-conversion of SD to HD resolution (4:2:0 modes only)
- Non-simultaneous up-conversion to 720p or 1080i resolution
- Cross-conversion of HD video from 720p to 1080i or from 1080i to 720p (4:2:0 modes only)

### **SimulSync Value Pack (RX8200/SWO/VP/SSYNC, FAZ 101 0113/260)**

- Provides synchronized, tiled 4k UHD TV capability
- Provides full frame, synchronized left & Right eye 3D capability
- Additionally requires HQ Format Conversion Value Pack
- Requires separate RX8200 unit for each HD 4k tile
- Requires separate RX8200 units for left & Right eye video decode

## 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 2x stereo pairs of audio decode and pass-through is included as standard. Decoded audio will be embedded in (HD) SDI outputs and output via physical audio interfaces.

### **Additional Balanced Audio Output (RX8200/HWO/AUD/B, FAZ 101 0113/282)**

- Increase the number of physical balanced analog and digital outputs from 2x stereo pairs to 4x stereo pairs

### **4x Audio Capability (RX8200/SWO/VP/EXAUD, FAZ 101 0113/261)**

- Enables up to eight 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 eight channels of audio into the (HD) SDI video output
- Enables Phase Aligned Audio using MPEG-1 Layer II or AAC audio
- Phase Aligned Audio in 2x aligned groups of 4x stereo pairs or 1x aligned group of 8x stereo pairs
- Requires additional audio output hardware (RX8200/HWO/BAL/AUD/B) if four stereo pairs of physical audio interfaces are desired

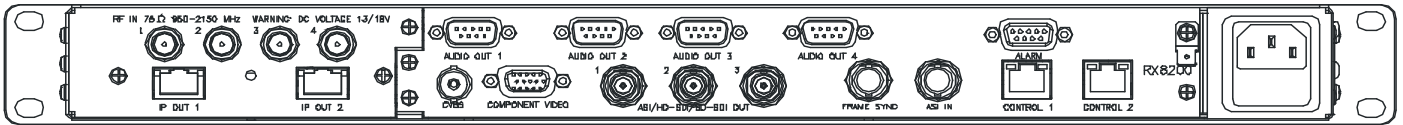
### **XLR Terminal Audio Break-Out Cable (RX8XXX/CABLE/XLR, FAZ 101 0108/24)**

- 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

## SAMPLE CONFIGURATION



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

## SPECIFICATIONS

### INPUT

#### ASI Transport Stream Input

Connector: 1x BNC (F) 75 Ohm

Max. input rate: 208 Mbps

Packet length: 188/204 byte packets

Standard: EN50083-9

#### Satellite Input Options

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

(FAZ 101 0113/277)

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

Frequency range: 950 MHz to 2150 MHz

Input level: -25 dBm to -65 dBm

Modulation: DVB-S QPSK, DVB-S2 QPSK, 8PSK

Standard: EN300 421, EN302 307

DVB-S Symbol rate: 1 Msyms to 45 Msyms

DVB-S2 Symbol rate: 1 Msyms to 60Msyms on inputs 1 & 2, Max bit rate 170Mbps, 31 Msyms, Max bit rate: 81Mbps on input 3 & 4

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

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

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

DVB-S2 FEC frame: Short & Normal frames

DVB-S2 Physical layer scrambling

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

#### DVB-S2 HOM (FAZ 101 0113/250)

Modulation: DVB-S2 16APSK and 32APSK

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

FEC, DVB-S2 32APSK: 3/4, 4/5, 5/6, 8/9, 9/10

Requires FAZ 101 0113/277option

#### DVB-S2X Satellite Input

(FAZ 101 0113/278)

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

Frequency range: 950 MHz to 2150 MHz

Input level: -25 dBm to -65 dBm nominal (Symbol rate dependent)

Modulation: DVB-S QPSK, DVB-S2 QPSK, 8PSK, 16APSK, DVB-S2X QPSK, 8PSK, 16APSK

Standard: EN300 421, EN302 307-1, EN302 307-2

DVB-S Symbol rate: 1 Msyms to 45 Msyms

DVB-S2 Symbol rate: 1 Msyms to 54Msyms

Max bit rate 170Mbps

DVB-S2X Symbol rate: 54MSyms

DVB-S2 FEC frame: Short & Normal frames

DVB-S2 Physical layer scrambling

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

#### DVB-S2X HOM (FAZ 101 0113/271)

Modulation: DVB-S2X 32APSK

Requires FAZ 101 0113/278 option

#### IP Input

#### MPEG over Gigabit Ethernet IP Input (FAZ 101 0113/252, 281)

Connector: 2 x RJ 45

Format: 100/1000BaseT

Max. input rate: 208Mbps

SMPTE 2022M (Pro-MPEG) FEC

#### G703 Input Options

#### Ericsson G.703 (FAZ 101 0113/280)

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 0113/279)

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

Channel bandwidth: 6, 7, 8MHz

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

Input MER level: 6 - 36dB

#### TS Output

For ASI Out See HD & SD video out options

#### IP Output (FAZ 101 0113/281,

Transport encapsulation into IP

MPTS/IP/UDP/RTP

SPTS/IP/UDP/RTP 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

Multiple services filtered to 1 outgoing service on ASI and IP TS output

Remap PIDs for the filtered service

Output: CBR on ASI and IP SPTS

MPE based data de-encapsulation

MPE max. bit-rate: 100 Mbps

#### Content Security

#### Director by Ericsson

Director single service decryption

Director over-air remote control

NexGuard Network ID Forensic Watermarking

#### DVB Common Interface

Enables support for all major CAM modules

Single service decryption

Service pre-filtering

#### BISS Decryption

Decryption of BISS Mode 1 and E

#### Multi-Service Decryption/Filtering (FAZ 101 0113/254)

Director multi-service decryption

Decryption of up to 24 services

Common Interface multi-service decryption

Single CAM, up to 10 services or 24 PIDs

BISS multi-service decryption

Decryption of up to 24 services

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

## SPECIFICATIONS

### VIDEO DECODING OPTIONS

#### 4:2:0 Decoding

##### MPEG-2 SD Decode

Profiles: MP@ML

Max video rate: 15 Mbps (MP@ML)

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

##### MPEG-4 AVC SD Decode

Profiles: MP@L3 - All units

HP@L3.1—Needs MPEG-2 & 4 4:2:2 HW option

Max. video rate: 12 Mbps - All units

17.5 Mbps - Needs 4:2:2 HW option

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

##### HEVC SD Decode

HEVC Profiles: MAIN / MAIN10

Sampling: 8-bit and 10-bit

Levels and max. video rate

L3 - 6 Mbps, L3.1 - 10 Mbps

L4 - 30 Mbps, L4.1 - 50 Mbps

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

##### MPEG-2 HD Decode

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 HD Decode

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

HP@L4.1 - Needs MPEG-2 & 4 4:2:2 HW option

Max. video rate: 25 Mbps - All units,

62.5Mbps - Needs 4:2:2 HW option

Video format: 1080i at 29.97 and 25 fps,

720p at 59.94 and 50 fps

##### HEVC HD Decode

HEVC Profiles: MAIN / MAIN10

Sampling: 8-bit and 10-bit

Levels and max. video rate

L4 - 30 Mbps, L4.1 - 50 Mbps

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 resolution Teletext burn-in

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

VITS, NABTS, AMOL48, AMOL96, TV Guide

#### 4:2:2 Decoding

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

Profile: 422@ML

Max. video rate: 50 Mbps

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

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

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

MPEG-4 Profile: 422HP@L3

Max. video rate: 50 Mbps

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

##### HEVC SD 4:2:2

HEVC Profile: MAIN 4:2:2:10

Sampling: 8-bit and 10-bit

Levels and max. video rate:

L3 - 6 Mbps, L3.1 - 10 Mbps

L4 - 30 Mbps, L4.1 - 50Mbps

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

##### MPEG-4 AVC HD 4:2:2 Decode

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

##### HEVC HD 4:2:2 Decode

HEVC Profiles: MAIN 4:2:2 10@L4.2

Sampling: 8-bit and 10-bit

Levels and max. video rate

L4 - 30 Mbps, L4.1 - 50 Mbps

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

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>v</sup>License key dependent

\* Check availability

### Audio Options

#### Balanced Audio Output

Connector: 2x 9-Pin D-type

Analog audio: two balanced stereo pairs

Digital audio: two balanced stereo pairs

QTY 1 fitted as standard

QTY 2 can be fitted for 4x stereo pair output - requires RX8200/SWO/4AUD)

#### Standard with any Video Decode Option:

2x MPEG-1 Layer-II audio decode

2x Dolby Digital® decode

2x Dolby Digital® Pass-through

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

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>v</sup>

#### Dolby® Digital Plus

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

#### AAC Audio

2x 5.1 down-mix to 2.0

2x 2.0 decode

1x 5.1 decode<sup>v</sup>

#### Phase Aligned Audio

MPEG-1 Layer II audio or AAC audio

2x phase aligned groups of 4x stereo pairs, or 1x group of 8x stereo pairs

Phase aligned to enable 5.1 carriage

Requires Extra audio Value Pack FAZ 101 0113/261

#### 4x Audio Capability (FAZ 101 0113/261)

Extends licensed audio decodes to more channels

8x 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

1x Dolby® Digital 5.1 decode

8x AAC stereo pairs

4x Dolby® E pass-through

4x Linear PCM pass-through

## SPECIFICATIONS

### Video Processing

#### High Quality Format-Conversion

##### Grade 1 quality down-conversion

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

Down-conversion from 1080p 50/60 to 1080i, 720p or SD

##### Up-conversion

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

##### Cross-conversion

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

Enables Frame Sync

Connector: 1x BNC (F) 75 Ohm

Input signal: Analog SD HSync (black & burst)

## VIDEO AND TS OUTPUT

### Video Output

#### HD and SD Video Output

##### 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: up to 8x stereo pairs

ASI standard: EN50083-9

### Data and Control Options

#### RS232 Remote Control and Data (FAZ 101 0113/282)

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

## STANDARD FEATURES

### Features

Program selection for ATSC, DVB and MPEG -only streams

One alarm relay, two relays under SCTE 35 control

### Control

Front panel keypad and LCD

SNMP control, traps and alarms

Web browser

### 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

100W 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 all applicable EU Directives

#### EMC Compliance

EN55022, EN55024, EN61000-3-2, EN61000-3-3, AS/NZS CISPR 22, ICES-003 and FCC CFR47 Part 15B Class A

#### Safety Compliance

EN60950-1, IEC60950-1, UL 60950-1 and CAN/CSA-C22.2 No 60950-1. NRTL Listed.