



ERICSSON RX8252

Program Transcoder

Broadcasters and Programmers are continually looking to take advantage of technological advances that reduce their distribution costs. MPEG-4 AVC compression in conjunction with DVB-S2 satellite transmission is the perfect combination to achieve such transmission efficiency gains. However, many TV systems are locked into MPEG-2 technology for the foreseeable future by the deployed set-top box population.

The Ericsson RX8252 Program Transcoder allows legacy systems to continue MPEG-2 operation whilst allowing the Programmer to distribute using MPEG-4 AVC compression by offering both dense and high quality transcoding from MPEG-4 AVC to MPEG-2. To ease the headend transition process the RX8252 also offers MPEG-2 “pass-through” capability.

The RX8252 Program Transcoder offers a high level of transcode density and sophistication. The RX8252 can be configured to enable up to 6 transcodes of any combination of HD to HD, HD to SD and SD to SD transcoding - allowing the programmer to address all tiers of service providers. In addition to video processing the RX8252 Program Transcoder also provides an unsurpassed level of flexibility in its network interfacing through a choice of service filtering and PID remapping capabilities.

Program content delivered over satellite is securely protected through the RX8252 Program Transcoder's conditional access capabilities. The RX8252 is fully integrated to provide compatibility with DVB Common Interface and BISS CA. Conditional access and control ability can be further enhanced by employing

PRODUCT OVERVIEW

A Program Transcoder With an Unrivalled Pedigree

The RX8252 Program Transcoder shares its heritage with Ericsson's fourth generation RX8200 Advanced Modular Receiver, providing a level of quality and flexibility that is unsurpassed.

Increased Distribution Capacity and Efficiency

The RX8252 Program Transcoder, in combination with Ericsson's MPEG-4 AVC Encoders, DVB-S2 and PREKOR™ Satellite Modulators achieves a level of bandwidth efficiency that is unrivalled allowing more or higher quality HD services per transponder compared with any competing solution.

Wide Choice of Inputs and Outputs for Enhanced Connectivity

The RX8252 can be integrated into a variety of system architectures, including satellite delivery, ASI and IP systems through a choice of input and output modules.

Simplified Control and Lower Cost of Operations

Organizations with large populations of RX8252 Program Transcoders or other Ericsson receivers can simplify control by integrating with the Director by Ericsson control system. Director provides remote, over-air, single-view control and CA from a central location, reducing the need for on-site local operators.

BASE UNIT FEATURES

RX8252 – Program Transcoder (RX8252/BAS, FAZ 101 0113/62)

The following features are available as standard:

- 1x ASI input transport stream input
- Single service Common Interface and BISS decryption
- Single service Director by Ericsson decryption
- Director by Ericsson over-air control and software download capability
- 2x composite video outputs
- 2x switchable ASI/SDI outputs
- 2x stereo pairs of analog and digital audio outputs
- Dolby Digital® audio pass-through
- AAC audio pass-through
- 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

INPUT OPTIONS

The RX8252 Program Transcoder has a single ASI input fitted as standard.

Satellite Input options

The RX8252 satellite input module comes 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, 32APSK demodulation with license keys
- DVB-S2 multi-transport stream capability with license key

DVB-S2 QPSK License (RX8200/SWO/DVBS2/QPSK, FAZ 101 0113/32)

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

DVB-S2 8PSK License (RX8200/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

DVB-S2 Low Symbol Rate License (RX8200/SWO/DVBS2/LSYM, FAZ 101 0113/31)

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

IP Transport Stream Input Options

The RX8252 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

Input Redundancy

The RX8252 Program Transcoder 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 (RX8200/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

TRANSPORT STREAM OUTPUT OPTIONS

The RX8252 Program Transcoder provides ASI transport stream output as standard. IP transport stream output capability may additionally be specified.

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

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

CONDITIONAL ACCESS OPTIONS

The RX8252 Program Transcoder is pre-enabled to support many types of widely used conditional access systems to allow for secure transmission of content including Director by Ericsson - the highly secure CA and flexible receiver control system. Additionally, the RX8252 may be ordered with the enhanced capability to support multi-service decryption

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

- Multi-service decryption for Director by Ericsson
- Single service Director decryption, over-air control and software download enabled by default

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

- Multi-service decryption DVB Common Interface

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

Multi-service decryption for BISS

*Check availability

VIDEO TRANSCODING OPTIONS

The RX8252 Program Transcoder offers MPEG-4 to MPEG-2 transcoding and MPEG-2 to MPEG-2. The transcoding offers the capability to transcode up to 6x 4:2:0 video services and simultaneously monitor 1 service on SD composite video and SDI outputs. In order to ease the headend migration process the RX8252 also offers MPEG-2 "pass-through" capability in the form of MPEG-2 to MPEG-2 transcoding.

Transcode Options

The RX8252 Program Transcoder may be configured with a quantity of SD and/or HD transcodes up to a total of 6 as required.

MPEG-4 to MPEG-2 transcoding

HD 4:2:0 transcoding

(RX8200/SWO/MP4/TRANS/HD, FAZ 101 0113/63)

- MPEG-4 HD to MPEG-2 HD transcoding
- QTY 1 required per video service

HD to SD 4:2:0 transcoding

(RX8200/SWO/MP4/TRANS/HD/SD, FAZ 101 0113/64)

- MPEG-4 HD to MPEG-2 SD transcoding
- Aspect ratio conversion under AFD or manual control
- QTY 1 required per video service

SD 4:2:0 transcoding

(RX8200/SWO/MP4/TRANS/SD, FAZ 101 0113/65)

- MPEG-4 SD to MPEG-2 SD transcoding
- QTY 1 required per video service

MPEG-2 to MPEG-2 transcoding

HD 4:2:0 transcoding

(RX8200/SWO/MP2/TRANS/HD)*

- MPEG-2 HD to MPEG-2 HD transcoding
- QTY 1 required per video service

HD to SD 4:2:0 transcoding

(RX8200/SWO/MP2/TRANS/HD/SD)*

- MPEG-2 HD to MPEG-2 SD transcoding
- Aspect ratio conversion under AFD or manual control
- QTY 1 required per video service

SD 4:2:0 transcoding

(RX8200/SWO/MP2/TRANS/SD)*

- MPEG-2 SD to MPEG-2 SD transcoding
- QTY 1 required per video service

Reflex™ by Ericsson Statistical Multiplexing

(RX8200/SWO/REFLEX)

- Integrated Reflex™ by Ericsson statistical multiplexing over outgoing MPEG-2 services
- QTY 1 required per Reflex™ group

AUDIO OPTIONS

The RX8252 Program Transcoder provides many different audio capabilities to allow optimal system interoperability.

Audio Transcode Options

To provide maximum flexibility the RX8252 Program Transcoder can be enabled to transcode the incoming audio type to a different outgoing standard.

AAC to Layer II audio transcode (RX8200/SWO/ENC/MPEG)

- AAC to MPEG-1 Layer II transcode

Dolby® Digital 5.1 to 2.0 (RX8200/SWO/ENC/AC3)

- Dolby® Digital 5.1 to 2.0 (Stereo) II transcode

Cable Options

The RX8252 Program Transcoder can delivered with audio breakout cables to various types of terminals

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

OTHER OPTIONS

The RX8252 Program Transcoder may be configured to offer the following additional functionality as required

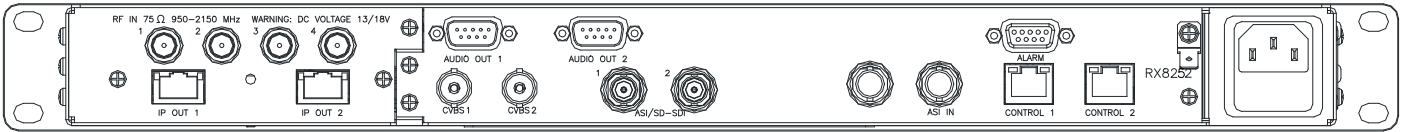
Password Protection of Web Browser

(RX8200/SWO/PW, FAZ 101 0113/51)

- Protects Web browser from malicious or accidental changes

*Check availability

SAMPLE CONFIGURATION



Sample configuration with IP transport stream output module installed

SPECIFICATIONS

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

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

SMPTE 2022M Pro-MPEG FEC (FAZ 101 0113/37)

SMPTE 2022M (Pro-MPEG) FEC

2nd Generation Satellite 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[√](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 Satellite Input (FAZ 101 0113/32)

Modulation: DVB-S2 QPSK

Standard: EN302 307

Symbol rate: 5 to 31 (60*) Msym/s

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 FEC frame: Short frames*, Normal frames

DVB-S2 8PSK Satellite Input (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 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 0113/6 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

Monitoring Video Output

SD Video Output

HD services monitored as SD with ARC under manual or AFD control

Composite Video

Connector: 2x BNC (F) 75 Ohm

Format: PAL / NTSC

SDI Output

See TS output

TS Output

SDI/DVB ASI-C (Switchable)

Connector: 2x BNC 75 ohms

SD-SDI standard: SMPTE 259M

Embedded Audio: SMPTE 272M (SD)

ASI standard: EN50083-9

IP Output Option (FAZ 101 0113/14)

Transport encapsulation into IP

MPTS/IP/UDP with multi-service transcode - CBR mode

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

2x GigE outputs, 100/1000 auto-sensing

Conditional Access Options

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

Director multi-service decryption

Director single service decryption enabled by default

Director over-air control enabled by default

Director software download enabled by default

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

Single CAM, up to 24 PIDs

Single service decryption enabled by default

BISS Multi-Service Decryption (FAZ 101 0113/24)

Multi-service decryption of BISS Mode 1 and BISS Mode E

Common BISS key

Single service decryption enabled by default

Stream Processing

SI Manipulation

Regeneration on PAT and PMT

Regeneration or remapping of NIT, SDT, EIT, CAT

Insertion of locally stored NIT

Pass-through of TDT/TOT

Remapping of PID for video, audio services

Remapping of PID for DVB subs, Teletext, MHEG Data

* Check availability

SPECIFICATIONS

Video Transcoding

MPEG-4 AVC SD Input

Profiles: MP@L3

Max. video rate: 10 Mbps

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

MPEG-4 AVC HD Input

Profiles: MP@L4, HP@L4

Max. video rate: 20 Mbps

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

MPEG-2 SD Input*

Profiles: MP@ML

Max. video rate: 15 Mbps

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

MPEG-2 HD Input*

Profiles: MP@HL

Max. video rate: 30 Mbps

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

MPEG-2 SD Output

Profiles: MP@ML

Max video rate: 15 Mbps (MP@ML)

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

MPEG-2 HD Output

Profiles: MP@HL

Max. video rate: 20 Mbps (MP@HL)

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

Reflex™ by Ericsson Statistical Multiplexing

Maximum number of services per Reflex group: 6

Maximum number of Reflex groups: 2

VBI Support

Closed captions pass-through, 708 to 608 CC conversion, DVB Subtitle pass-through, Teletext Pass-through, AFD Pass-through

Other

EBIF data pass-through

SCTE 35 splice-point data pass-through

Addressable SCTE 35 capability

MHEG data pass-through

Audio

Balanced Audio Output

Connector: 2x 9 pin D-type

Analog audio: two balanced stereo pairs

Digital audio: two balanced stereo pairs

MPEG-1 Layer II Pass-Through

Pass-through of MPEG-1 Layer II audio service

Max: 4x per video service

Dolby® Digital Pass-Through

Pass-through of Dolby® Digital 5.1 or 2.0 service

Max: 4x per video service

Decode (down-mix) of 1x Dolby® Digital service for monitoring

AAC Audio Pass-Through

Pass-through of AAC-LC, HE AAC service

Max: 4x per video service

Decode (down-mix) of 1x AAC service for monitoring

AAC to MPEG-1 Layer II Transcode

Transcode from AAC audio to MPEG-1 Layer II audio

AAC-LC and HEv1 and v2 AAC supported

Max: 2x per video service

MPEG-1 Layer II output bit rate: 32-384 kbps

Sampling rate: 48KHz

Dolby® Digital 5.1 to Dolby® Digital 2.0 Transcode

Transcode from Dolby® Digital 5.1 audio to Dolby® Digital 2.0

Max: 1x per video service

Dolby® Digital 2.0 output bit rate: 56-640 kbps

Sampling rate: 48kHz

Other 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

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, EN61000-3-2¹⁰, EN61000-3-3¹⁰, EN55024, CISPR22, FCC CFR47 Part 15B Class A

Safety Compliance

EN60950-1, IEC60950-1, UL60950-1