ERICSSON RX8320

AFD READY

ATSC Broadcast Receiver

As local terrestrial broadcasters begin to phase out their analog broadcasts and transition to an all-digital environment, the need to maintain access to the viewing public becomes critical. In many cases, viewers receive these broadcasts through cable, telco or satellite operators who either provide an analog transmission to their subscribers or provide a digital means for their subscribers to receive these local channels. The Ericsson RX8320 ATSC broadcast receiver is specifically designed to enable a simple, reliable solution to the ATSC broadcast transition for these operators.

The RX8320 provides both ASI and 8VSB inputs for reception of the broadcast services over terrestrial or fiber links. It then provides a pass-through capability so that operators can carry the digital signals all the way to a subscriber's home.

To support analog TV delivery the RX8320 also provides video decode capability with high quality composite output and audio decode capability, including 5.1 multi-channel to stereo down-mixing, to allow easy interfacing into the existing infrastructure. Any high definition (HDTV) digital TV service can be down-converted for analog SD delivery. Automatic picture aspect ratio conversion is performed based on any active format description (AFD) and bar data present on the incoming digital TV service. Legal and regulatory requirements are also fulfilled by the RX8320 for the transition of ATSC broadcast services into analog TV delivery, with the extraction and insertion of closed captions, Nielsen data, TV Guide data, and V-Chip program rating information into the analog video outputs.

PRODUCT OVERVIEW

Easy Migration to ATSC Digital Terrestrial Reception

The RX8320 is specifically designed to smooth the ATSC broadcast transition for cable, telco and satellite operators who re-transmit the local broadcast channels.

Complete Interoperability

The RX8320 ATSC Broadcast Receiver offers full translation capability between digital signaling and analog services. By offering automatic picture aspect ratio conversion and signaling via AFD and bar data, the RX8320 ensures that widescreen HD video is correctly displayed when down-converted to 4:3 SD video. Full support is provided to ensure that closed captions, TV Guide data and program rating (V-Chip) services continue to be supported.

Peace of Mind

Ericsson is a leading provider of ATSC broadcast headends and professional integrated receiver decoder (IRD) products worldwide. This in-depth knowledge and experience ensures that the RX8320 delivers the high quality and reliability on which broadcasters and service operators alike depend.

BASE UNIT FEATURES

RX8320 – ATSC Broadcast Receiver (RX8320/BAS)

The following features are available as standard:

- 8VSB demodulator
- Transport stream input with ASI connection
- Automatic redundancy switching between ASI and 8VSB inputs
- Transport stream output with ASI connection
- MPEG-2 SD 4:2:0 video decoding with CVBS output
- MPEG-2 HD 4:2:0 video down-conversion with SD CVBS output
- Two service Dolby® Digital audio decoding with 5.1 to 2.0 down-mixing
- Two stereo pairs balanced analog audio output
- Front panel and web browser control, with alarm relay

Optional features include:

- Transport stream over IP output
- MPEG-4 AVC video decoding
- Single service filtering and PID remapping
- Multi-service filtering and stream splitting

HARDWARE OPTIONS

Screw Terminal Audio Break-Out Cable (RX8XXX/CABLE/SCRTRM)

- Provides screw terminal connections for analog audio output
- 1x stereo pair per breakout cable

XLR Terminal Audio Break-Out Cable (RX8XXX/CABLE/XLR)

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

SOFTWARE OPTIONS

Null Packet Detection Redundancy Switching (RX83XX/SWO/NULL)

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

IP Transport Stream Output (RX8320/SWO/IP/OUT)

- Enables IP transport stream output
- Encapsulation of transport stream output into IP multicast
- 2x Gigabit Ethernet RJ-45 interfaces always fitted, enabled with feature key

MPEG-4 AVC SD Decoding (RX8300/SWO/MPEG4/SD)

- Future-proof for translation of MPEG-4 AVC based broadcast services
- Enables MPEG-4 AVC SD MP/HP@L3 video decoding

MPEG-4 AVC HD Down-conversion (RX8300/SWO/MPEG4/HD)

- Future-proof for translation of MPEG-4 AVC based broadcast services
- MPEG-4 AVC HD video is down-converted and presented as SD on CVBS output
- Supports MPEG-4 AVC HD MP/HP@L4 video decoding

Single Service Filtering (RX83XX/SWO/SING/SERVFILT)

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

### Multi-Service Filtering (RX83XX/SWO/MULT/SERVFILT)

- 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

Password Protection of Web Browser (RX8300/SWO/PW)

- Enables password protection feature on web browser control interface to protect from malicious or accidental changes

SAMPLE CONFIGURATION
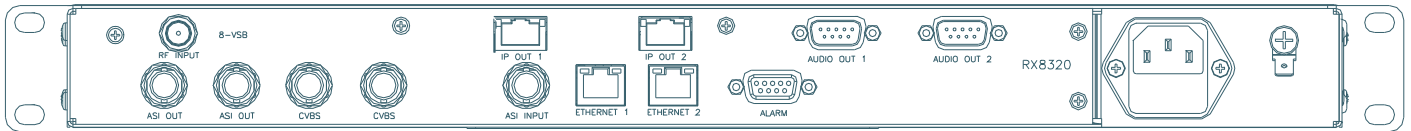
SPECIFICATIONS

Video and Audio Formats

MPEG-2 SD Video Decode

MPEG-2 MP@ML video decoding

15 Mbps maximum video rate

Input video format: 480i @ 29.97 fps

MPEG-2 HD with Down-conversion

MPEG-2 MP@HL video decoding

Input video format: 1080i @ 29.97 fps and 720p @ 59.94 fps

80 Mbps maximum video input rate

High definition video down-converted and presented as SD only

SD video format: 480i @ 29.97 fps

Video Processing

AFD and bar data picture aspect ratio conversion and signaling per SMPTE 2016

CEA-608 closed captions and XDS on line 21

Nielsen AMOL in VBI

Ancillary and Metadata Processing

SCTE 35 DPI cue message pass-through on transport stream output

SCTE 127 (including Nielsen AMOL-48/-96, TV Guide TVG2X) pass-through and translation to VBI

Closed captions and XDS extracted from CEA-708 DTVCC transport channel

PSIP pass-through on transport stream output

Translation of PSIP content advisory to XDS program rating (V-Chip)

Audio Decoding

Two stereo pairs audio decoding

Dolby Digital® 2.0 decoding

Dolby Digital 5.1 down-mix to 2.0

Video and Audio Options

MPEG-4 AVC HD with Down-conversion

MPEG-4 AVC MP@L4 and HP@L4 decoding

20 Mbps maximum video input rate

Video format: 1080i @ 29.97 fps and 720p @ 59.94 fps

High definition video down-converted and presented as SD only

SD video format: 480i @ 29.97 fps

MPEG-4 AVC SD

MPEG-4 AVC MP@L3 and HP@L3 decoding

12 Mbps maximum video input rate

Video format: 480i @ 29.97 fps

Input Interfaces

Transport Stream Input

ASI connector: 1x BNC 75 Ohm

Max input rate: 160 Mbps

Packet length: 188/204 bytes

8-VSB RF Input

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

Modulation: ATSC A/53 8-VSB

Frequency range: 54 MHz to 863 MHz

Input level: -80 dBm to -5 dBm

Bit-rate: 19.39 Mbps

Outputs

Transport Stream Output

ASI connector: 2x BNC 75 ohms

Composite Video Output

Connector: 2x BNC 75 ohms

Format: NTSC

Audio Output

Analog balanced audio output

2x 9-pin D-type with breakout cable to XLR connectors

Output Options

Transport Stream Output

Transport stream encapsulation into IP

MPTS/UDP/IP

2x Gigabit Ethernet outputs (RJ45)

100/1000BaseT auto-sensing

Hardware always fitted, enabled with feature key

Features

Program selection for ATSC, DVB and MPEG-only streams

Input transport stream rate up to 160 Mbps

Alarm relay

Stream Processing

Single Service filtering

Filter multiple services to one outgoing service[y]

Remap PIDs for the filtered service

Output: CBR on ASI and IP[y] SPTS

Multi-service filtering

Filter N incoming services to M outgoing services[y]

Number of services: 24 max.

Remap PIDs on a single service

Output: CBR on ASI and IP[y] MPTS

Stream splitting - up to eight services as IP SPTS

Control Options

Front panel keypad and LCD

Ethernet

Dual RJ45 10/100BaseT control interface

SNMP traps and alarms

Web browser interface

Physical and Power

Dimensions (W x D x H)

440 x 400 x 44mm (17.3 x 15.75 x 1.73" approx.)

Input Voltage

110 VAC / 240 VAC

Power Consumption

45W max. (depending on options fitted)

Cooling

Integrated fans

Environmental Conditions

Operating Temperature

0°C to +50°C (32° to 122°F)

Storage Temperature

-20°C to +70°C (4° to 140°F)

Relative Humidity

5% to 95% (non-condensing)

Compliance

CE marked in accordance with EU Low Voltage and EMC Directives

EMC Compliance

EN55022, EN61000-3-2[10], EN61000-3-3[10], EN55024, CISPR22, FCC CFR47 Part 15B Class A

Safety Compliance

EN60950-1, IEC60950-1, UL60950-1