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 8-VSB 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:

- 8-VSB demodulator
- Transport stream input with ASI connection
- Automatic redundancy switching between ASI and 8-VSB 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
- 2 service Dolby® Digital audio decoding with 5.1 to 2.0 down-mixing
- 2 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
ERICKSON RX8320 ATSC BROADCAST RECEIVER

HARDWARE OPTIONS

Screw Terminal Audio Break-Out Cable (RX8XXX/CABLE/SCRTRM)
- Provides screw terminal connections for analog audio output
- 1 x stereo pair per breakout cable

XLR Terminal Audio Break-Out Cable (RX8XXX/CABLE/XLR)
- Provides XLR terminal connections for analog audio output
- 1 x stereo pair per breakout cable via 2 x 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 % 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
- 2 x 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

Password Protection of Web Browser (RX8300/SWO/PW)
- Enables password protection feature on web browser control interface to protect from malicious or accidental changes
**SPECIFICATIONS**

**Video and Audio Formats**

<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPEG-2 SD Video Decode</td>
<td>MPEG-2 MP@ML video decoding</td>
</tr>
<tr>
<td></td>
<td>15 Mbps maximum video rate</td>
</tr>
<tr>
<td></td>
<td>Input video format: 480i @ 29.97 fps</td>
</tr>
<tr>
<td>MPEG-2 HD with Down-conversion</td>
<td>MPEG-2 MP@HL video decoding</td>
</tr>
<tr>
<td></td>
<td>Input video format: 1080i @ 29.97 fps and 720p @ 59.94 fps</td>
</tr>
<tr>
<td></td>
<td>80 Mbps maximum video input rate</td>
</tr>
<tr>
<td></td>
<td>High definition video down-converted and presented as SD only</td>
</tr>
<tr>
<td></td>
<td>SD video format: 480i @ 29.97 fps</td>
</tr>
</tbody>
</table>

**Input Interfaces**

<table>
<thead>
<tr>
<th>Interface</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport Stream Input</td>
<td>Connector: 1 x BNC 75 Ohm</td>
</tr>
<tr>
<td></td>
<td>Max input rate: 160 Mbps</td>
</tr>
<tr>
<td></td>
<td>Packet length: 188/204 bytes</td>
</tr>
<tr>
<td>8-VSB RF Input</td>
<td>Connector: 1 x F-Type (F), 75 Ohm</td>
</tr>
<tr>
<td></td>
<td>Modulation: ATSC A/53 8-VSB</td>
</tr>
<tr>
<td></td>
<td>Frequency range: 54 to 863 MHz</td>
</tr>
<tr>
<td></td>
<td>Input level: -80 dBm to –5 dBm</td>
</tr>
<tr>
<td></td>
<td>Bit-rate: 19.39 Mbps</td>
</tr>
</tbody>
</table>

**Outputs**

<table>
<thead>
<tr>
<th>Interface</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport Stream Output</td>
<td>Connector: 2 x BNC 75 ohms</td>
</tr>
<tr>
<td>Composite Video Output</td>
<td>Connector: 2 x BNC 75 ohms</td>
</tr>
<tr>
<td></td>
<td>Format: NTSC</td>
</tr>
<tr>
<td>Audio Output</td>
<td>Analog balanced audio output</td>
</tr>
<tr>
<td></td>
<td>2 x 9 pin D-type with breakout cable to XLR connectors</td>
</tr>
</tbody>
</table>

**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 DTVC MCC 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**

<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPEG-4 AVC HD with Down-conversion</td>
<td>MPEG-4 AVC MP@L4 and HP@L4 decoding</td>
</tr>
<tr>
<td></td>
<td>20 Mbps maximum video input rate</td>
</tr>
<tr>
<td></td>
<td>Video format: 1080i @ 29.97 fps and 720p @ 59.94 fps</td>
</tr>
<tr>
<td></td>
<td>High definition video down-converted and presented as SD only</td>
</tr>
<tr>
<td></td>
<td>SD video format: 480i @ 29.97 fps</td>
</tr>
<tr>
<td>MPEG-4 AVC SD</td>
<td>MPEG-4 AVC MP@L3 and HP@L3 decoding</td>
</tr>
<tr>
<td></td>
<td>12 Mbps maximum video input rate</td>
</tr>
<tr>
<td></td>
<td>Video format: 480i @ 29.97 fps</td>
</tr>
</tbody>
</table>

**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: 110/240 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, EN61000-3-3
  - EN55024, CISPR22, FCC CFR47 Part 15B Class A
- Safety Compliance:
  - EN60950-1, IEC60950-1, UL60950-1