

MediaKind RX8320 Receiver



ATSC Broadcast Design

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 MediaKind 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 the subscriber.

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 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

MediaKind 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 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

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 (RX83XX/SWO/MP2/MP4/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 (RX83XX/SWO/MP2/MP4/SD/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/SERVILT, FAZ 101 0108/15)

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

Multi-Service Filtering (RX83XX/SWO/MULT/SERVILT)

- 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

SMPTTE 2022M Pro-MPEG FEC License on IP TS Output (RX83XX/SWO/IP/OUT/PROMPEG)

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

Password Protection of Web Browser (RX83XX/SWO/PW)

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

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 signalling 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 DTVCB 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
MPEG-4 AVC SD	MPEG-4 AVC MP@L3 and HP@L3 decoding 12 Mbps maximum video input rate

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/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 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 Remap PIDs for the filtered service Output: CBR on ASI and IPy SPTS
Multi-service filtering	Filter N incoming services to M outgoing services Number of services: 24 max. as 1xMPTS Remap PIDs on a single service Output: CBR on ASI and IPy MPTS Stream splitting - up to 8 services as IP SPTS

Control Options

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	45 Watt 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

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