



RX8330

Distribution Receiver

The RX8330 Distribution Receiver extends the RX8300 series of Integrated Receiver Decoders by providing feature-rich multi-format standard definition (SD) decoding capability with high quality SDI output for video distribution applications. The RX8330 gives the user access to the latest compression and transmission technologies to allow for the most cost-effective and bandwidth transmissions possible whilst ensuring the highest standards of reliability and video quality.

The RX8330 offers both ASI and the latest DVB-S2 capable satellite input interfaces. As security of content is always of paramount importance, compatibility with popular CA systems including DVB Common Interface is provided. The RX8330 shows its true class through its capability for multi-format decoding of all SD 4:2:0 video standards combined with high quality SDI digital video and analog video outputs. This capability is further enhanced by the RX8330's ability to receive, and down-convert HD video to SD providing an SD output for broadcast or monitoring. Additionally for systems that stay in the compressed domain, decrypted transport streams can be handed off into digital networks through a choice of both ASI or optional IP output interfaces.

The feature-rich specification of the RX8330 provides the capability and flexibility that places the receiver as the key link in the broadcast chain for applications from content distribution and turn-around to critical network monitoring.

PRODUCT OVERVIEW

The Perfect Choice for a Large Network

The RX8330 is the perfect receive device for distribution of video services throughout a large network. The RX8330 provides the most up-to-date feature-set, combining maximum transmission efficiency with easy remote management of the receiver population.

Increased Distribution Capacity and Efficiency

The RX8330 in combination with TANDBERG Television's MPEG-4 AVC encoders and PREKOR™ dynamic pre-correction, leads to a highly efficient video distribution system. Combined with the additional 30% increase in channel capacity of DVB-S2 the RX8330 allows operators to achieve three times the amount of content through a transponder.

Multi-format Decoding - a "Safe Choice" for the Future

The RX8330 decodes all major SD video formats in use today providing complete flexibility for daily operations. The versatility that the RX8330 decoder provides makes it a "safe choice" for companies that are beginning to transmit MPEG-4 AVC SD but also continue to work in MPEG-2 SD. With the RX8330 they can migrate at their own pace.

Simplified Control and Lower Cost of Operations

Organizations with large populations of RX8330 receivers and other TANDBERG Television receivers can simplify control by integrating with TANDBERG Director. Director provides remote, over-air, single-view control from a central location, reducing the need for on-site local operators.

BASE UNIT FEATURES

RX8330 – Distribution Receiver (RX8330/BAS)

The following features are available as standard:

- 4 input DVB-S QPSK satellite demodulator
- Transport stream input with ASI connection
- Dual switchable ASI/SDI output
- DVB Common Interface CA support
- Director single service decryption
- Front panel and Web browser control, with alarm relay
- SCTE 35 controlled contact closures for ad-insertion signaling

Optional features include:

- DVB-S2 QPSK and 8PSK demodulation
- Transport stream over IP output
- Multi-service decryption via Pro CAMs
- Single service and multi-service BISS decryption
- MPEG-2 SD 4:2:0 video decoding
- MPEG-2 HD 4:2:0 down-conversion
- MPEG-4 AVC SD video decoding
- MPEG-4 AVC HD down-conversion
- 2 stereo pair Dolby® Digital audio decoding with 5.1 to 2.0 down-mixing
- AAC audio decoding with 5.1 to 2.0 down-mixing
- MPE IP data de-encapsulation
- Single service filtering and PID remapping
- Multi-service filtering

HARDWARE OPTIONS

IP Transport Stream Output (RX83XX/HWO/IP/OUT)

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

SOFTWARE OPTIONS

Input Options

The RX8330 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.

DVB-S2 QPSK License (RX83XX/SWO/DVBS2/QPSK)

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

DVB-S2 8PSK License (RX83XX/SWO/DVBS2/8PSK)

- Adds DVB-S2 QPSK, 8PSK capability to DVB-S2 input option card

DVB-S2 Low Symbol Rate License (RX83XX/SWO/DVBS2/LSYM)

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

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

Decoding Options

The RX8330 is designed to support a range of video decoding standards

MPEG-2 SD Decoding (RX83XX/SWO/MPEG2/SD)

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

MPEG-2 HD Down-conversion (RX83XX/SWO/MPEG2/HD)

- Enables MPEG-2 SD & HD 4:2:0 decoding
- HD video is down-converted and presented as SD on CVBS output

MPEG-4 AVC SD Decoding (RX83XX/SWO/MP2/MP4/SD)

- Enables MPEG-2 & MPEG-4 AVC SD 4:2:0 video decoding

MPEG-4 AVC HD Down-conversion (RX83XX/SWO/MP2/MP4/SD/HD)

- Enables MPEG-2 SD & HD, MPEG-4 AVC SD & HD 4:2:0 decoding
- HD video is down-converted and presented as SD on CVBS output

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

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

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

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

Audio Options

Dolby® Digital Decode (RX83XX/SWO/AC3)

- Enables decoding of Dolby Digital® Audio
- 2 x 2.0 (stereo) decoding
- 2 x 5.1 down-mix to 2.0 (stereo)

AAC Decode (RX83XX/SWO/AAC)

- Enables decoding of AAC-LC and HE-AAC
- 2 x 2.0 (stereo) decoding
- 2 x 5.1 down-mix to 2.0 (stereo)

Conditional Access Options

Multi-Service CAM Decryption (RX83XX/SWO/MSD)

- Decrypt multiple services via professional CAMs
- Simultaneously decrypt up to 10 services or 24 PIDs max

TANDBERG Director Multi-service Decryption (RX83XX/SWO/DIR5/MSD)

- TANDBERG Director multi-service decryption
- TANDBERG Director over-air control
- TANDBERG Director over-air software downloads

BISS CA (RX83XX/SWO/BISS)

- BISS Mode 1 and BISS Mode E descrambling

BISS Multi-service CA (RX83XX/SWO/BISS/MSD)

- Multi-service decryption for BISS

Stream Processing Options

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

- 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
- CBR MPTS transport stream output

Data Options

High Speed Data Output (RX83XX/SWO/IP/DATA)

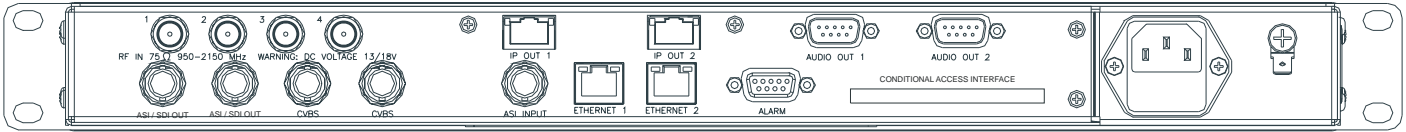
- MPE based data de-encapsulation of IP data
- Requires IP TS output option

Other Software Options

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

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

SAMPLE CONFIGURATION



SPECIFICATIONS

Video and Audio Options

MPEG-2 SD Decode[¶]
Profiles: MP@ML
Max video rate: 15 Mbps (MP@ML)
Video format: 480i and 576i 29.97, 25 fps
MPEG-2 HD with Down-conversion[¶]
Profiles: MP@HL
Max. video rate: 80 Mbps (MP@HL)
Video format: 1080i at 29.97 & 25 fps 720p at 59.94 & 50 fps
High definition video down-converted and presented as SD only
SD video format: 480i @ 29.97 or 576i @ 25, 50fps
MPEG-4 AVC SD Decode[¶]
Profiles: MP@L3
Max. video rate: 12 Mbps
Video format: 480i and 576i 29.97, 25 fps
MPEG-4 AVC HD with Down-conversion[¶]
Profiles: MP@L4, HP@L4
Max. video rate: 20 Mbps
Video format: 1080i @ 29.97 & 25 fps 720p @ 59.94 & 50 fps
High definition video down-converted and presented as SD only
SD video format: 480i @ 29.97fps or 576i @ 25, 50fps
Video Processing
Down-conversion (HD to SD)
Aspect ratio conversion (16:9 to 4:3): none, center cut out, letter box, anamorphic - manual/AFD controlled
VBI
Closed captions, DVB Subtitle burn-in
WST, Inverted Teletext, EBU Teletext subtitles and non subtitles, WSS, VITC, VITC in PES, VPS, VITS, NABTS, AMOL 48, AMOL 96, TV Guide
Audio Decoding
MPEG-1 Layer-II audio
Dolby [®] Digital 2.0 decoding [¶]
Dolby [®] Digital 5.1 down-mix to 2.0 [¶]
AAC 2.0 decoding [¶]
AAC 5.1 down-mix to 2.0 [¶]
Decoded audio embedded in SDI
Sampling rate: 48 kHz
No. stereo pairs: 2
Features
Program selection for ATSC, DVB and MPEG-only streams
Input transport rate up to 160 Mbps (Nominal)
1 alarm relay
2 SCTE35 controlled contact closures for add-insertion signaling

Input Interfaces

Transport Stream Input
Format: DVB ASI
Connector: 1 x BNC 75 Ohm
Max input rate: 160 Mbps
Packet length: 188/204 byte packets
Standard: EN50083-9
Satellite Input
Connector: 4 x F-Type, 75 Ohm
Modulation: DVB-S QPSK, DVB-S2 QPSK [¶] and 8PSK [¶]
Frequency range: 950 – 2150 MHz
Input Level: -25 dBm to -65 dBm
Symbol Rate: 1 - 45 Msym/s (DVB-S) 1 [¶] (5) - 31 Msym/s (DVB-S2)
Bit-rate: 81 Mbps max. (DVB-S2)
FEC, DVB-S: 1/2, 2/3, 3/4, 5/6, 7/8
FEC, DVB-S2 QPSK: 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: Normal Frames
LNB Power: 13V, 18V or off, 22 kHz on/off
Standard: EN300 421, EN302 307

Outputs

SDI/DVB ASI-C (Individually Switchable)
Connector: 2 x BNC 75 ohms
SDI Standard: SMPTE 259M
Embedded Audio: SMPTE 272M
ASI standard: EN50083-9
CVBS
Connector: 2 x BNC 75 ohms
Format: NTSC, PAL
Audio
Connector: 2 x 9 pin D-type
Analog audio: 2 balanced stereo pairs
Digital audio: 2 balanced stereo pairs
Conditional Access
TANDBERG Director
Single service Director decryption
Multi-service decryption [¶] - up to 24 services
DVB Common Interface
Single service decryption
Multi-service decryption [¶] - Single CAM, up to 10 services or 24 PIDs
BISS
BISS modes 1 and E
Single service Director decryption [¶]
Multi-service decryption [¶] - up to 24 services

* Check availability
[¶] Indicates an option

Stream Processing

Single Service filtering
Filter multiple services to 1 outgoing service [¶]
Remap PIDs for the filtered service
Output: CBR on ASI and IP [¶] SPTS
Multi-Service filtering
Filter N incoming services to M outgoing services [¶]
Number of services: 24 max.
Output: CBR on ASI and IP [¶] MPTS

Output Options

Transport Stream Output
Transport encapsulation into IP [¶]
MPTS/IP/UDP
SPTS/IP/UDP with single service filtering - CBR mode
2 x Gigabit Ethernet outputs, 100/1000 autosensing
High Speed Data Output
MPE based data de-encapsulation [¶]
Max. bit-rate: 100 Mbps

Control

Front panel keypad and LCD
Director remote control
Ethernet
Dual RJ45 10/100BaseT control interface
Full SNMP control, Web browser interface

Physical and Power

Dimensions (W x D x H)
440 x 400 x 44mm (17.2 x 15.75 x 1.75" 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 ¹⁰ , EN61000-3-3 ¹⁰ , EN55024, CISPR22, FCC CFR47 Part 15B Class A
Safety Compliance
EN60950-1, IEC60950-1, UL60950-1

Global Headquarters TANDBERG Television, Inc Tel: +1 (678) 812 6300 Email: americasales@tandbergtv.com	Asia Pacific Headquarters TANDBERG Television Tel: +852 2899 7000 Email: apacsales@tandbergtv.com	Australasia TANDBERG Television Tel: +61 2 9111 4999 Email: sales.anz@tandbergtv.com	EMEA Headquarters TANDBERG Television Ltd Tel: +44 (0)23 8048 4000 Email: salesdesk@tandbergtv.com Website: www.tandbergtv.com
--	---	--	---