RX8315

Distribution Receiver

The RX8315 distribution receiver provides capability to perfectly match the needs for video distribution applications for turn-around of content into both analog and digital networks. The RX8315 uses the latest technology to let operators take full advantage of the efficiency improvements from DVB-S2 modulation, TANDBERG PREKOR™ dynamic pre-correction, and MPEG-4 AVC compression to distribute three times the amount of content through a satellite transponder verses traditional satellite distribution solutions.

The RX8315 provides compatibility with DVB Common Interface CA systems, offering both single service and multi-service decryption capability. Decrypted transport streams can be handed off into digital networks through a choice of ASI or IP output interfaces. The RX8315 can optionally decode any MPEG-2 or MPEG-4 AVC 4:2:0 video standard, down-converting from HD to SD where necessary to provide an SD composite video output for interfacing to analog networks or for low cost monitoring.

The RX8315 simplifies content acquisition for cable, satellite and telco operators in the all-digital future of TV broadcasting.

PRODUCT OVERVIEW

The Perfect Choice for a Large Network

The RX8315 is the perfect receive device for distribution of video services throughout a large network. The RX8315 provides the most up-to-date feature-set, combining maximum transmission efficiency with easy remote management of the receiver population. The RX8315 provides all major functionality and connectivity required to hand-off the service into the remote network.

Increased Distribution Capacity and Efficiency

The RX8315 distribution receiver, in combination with the TANDBERG Television's MPEG-4 AVC encoders and PREKOR dynamic pre-correction, leads to a highly efficient video distribution system. Combined with the addition 30% increase in channel capacity of DVB-S2 the RX8315 allows operators to achieve three times the amount of content through a transponder.

Simplified Control and Lower Cost of Operations

Organizations with large populations of RX8315 receivers and other TANDBERG Television receivers can simplify control by integrating with TANDBERG Director control system. Director provides remote, over-air, single-view control from a central location, reducing the need for on-site local operators.

BASE UNIT FEATURES

RX8315 – Distribution Receiver (RX8315/BAS)

The following features are available as standard:

- 4 input DVB-S QPSK satellite demodulator
- Transport stream input with ASI connection
- Transport stream output with ASI connection
- 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
- MPEG-2 SD 4:2:0 video decoding through CVBS output
- MPEG-2 HD 4:2:0 down-conversion through CVBS output
- MPEG-4 AVC SD video decoding through CVBS output
- MPEG-4 AVC HD down-conversion through CVBS output
- 2 stereo pair Dolby® Digital audio decoding with 5.1 to 2.0 down-mixing
- AAC audio decoding with 5.1 to 2.o 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

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

SOFTWARE OPTIONS

Input Options

The RX8315 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 RX8315 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

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
- Check availability

Stream Processing Options

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
- CBR MPTS transport stream output

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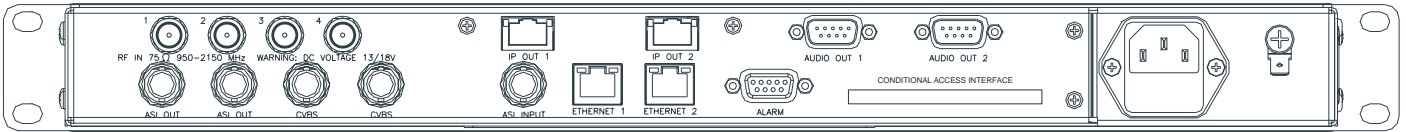
High Speed Data Output (RX83XX/SWO/IP/DATA)

- 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 Decodeᵠ

Profiles: MP@ML

Max video rate: 15 Mbps (MP@ML)

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

MPEG-2 HD with Down-conversionᵠ

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 Decodeᵠ

Profiles: MP@L3

Max. video rate: 12 Mbps

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

MPEG-4 AVC HD with Down-conversionᵠ

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 ᵠ

Dolby® Digital 5.1 down-mix to 2.0ᵠ

AAC 2.0 decoding ᵠ

AAC 5.1 down-mix to 2.0ᵠ

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 relays under SCTE 35 control

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 QPSKᵠ and 8PSKᵠ

Frequency range: 950 – 2150 MHz

Input Level: -25 dBm to –65 dBm

Symbol Rate: 1 - 45 Msym/s (DVB-S) 1ᵠ(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

DVB ASI-C

Connector: 2 x BNC 75 ohms

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

Output Options

Transport Stream Output

Transport encapsulation into IP

MPTS/IP/UDP

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

2 x GigE outputs, 100/1000 autosensing

High Speed Data Output

MPE based data de-encapsulationᵠ

Max. bit-rate: 100Mbps

*Check availability

ᵠ Indicates an option

Conditional Access

TANDBERG Director

Single service Director decryption

DVB Common Interface

Single service decryption

Multi service decryption via professional CAMᵠ

Stream Processing

Single Service filtering

Filter multiple services to 1 outgoing serviceᵠ

Remap PIDs for the filtered service

Output: CBR on ASI and IPᵠ SPTS

Multi-Service filtering

Filter N incoming services to M outgoing servicesᵠ

Number of services: 24 max.

Output: CBR on ASI and IPᵠ MPTS

Control

Front panel keypad and LCD

TANDBERG 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