



Sapphire-RXD3 Rack-mount Receiver Decoder

Sapphire-RXD3 is a Broadcast quality HEVC receiver decoding system, combining class-leading RF technology with Ultra Low-Latency HEVC decoding, presented in a compact ½ 19” chassis.

FEATURES

- 8way diversity receive antennas
- Ultra Low-Latency, typically 35mS end to end
- HEVC decoder with optional H.264
- 4K UHD processing
- Support for HD HDR and Timecode (film industry) signal insertion
- Intuitive touch screen control
- Web browser control
- ST2110 interfaces high rate video over IP interfacing (SFP)

The Sapphire-RXD3 cleverly combines an 8 way diversity COFDM receiver and DBS’ Sapphire Ultra-Low Latency HEVC decoder in a single 2RU ½ 19” package, offering end to end latency of less than 40mS which makes it ideal for live action scenarios. Operators requiring legacy support for H.264 should choose the Sapphire-RXD3D which includes H.264 HD decoding.

Eight-way Maximum Ratio Combining diversity inputs ensure reception in the most difficult RF environments whilst configurable LO frequencies and variable power ensures support for a variety of external downconverters.

The Ultra-Low Latency H.265 decoder supports resolutions up to 4K in 10 bit 4:2:2 format and with full support for HDR reinsertion, video interfaces are 12G capable. A monitoring port can be provided on SFP which can be down sampled to HD in the case of a 4K signal.

Sapphire-RXD3 will decode up to 8 stereo audio pairs and output them embedded on SDI, 1 pair of analogue audio outputs are also provided on XLR.

The Sapphire-RXD3 has a unified web-browser control interface for remote control. Local control is achieved with a single touch screen interface offering immediate status on transmitter performance and receiver status. The display can be set to operate in day or night modes, with intuitive configuration entry.

The Sapphire-RXD3 enables onward streaming of video and audio and supports multiple streaming formats including SRT. Timecode and HDR signalling are also fully supported. The Sapphire-RXD3 can support ST2110 interfaces for users requiring high rate video over IP solutions using the SFP interface provided.

Connectors

12G/HDSDI	4 x HD-BNC Female 75 ohm
SFP	1 x SFP Interface
ASI Out	BNC Female 75 ohm
Genlock In	BNC Female 75 ohm
RF In	8 x BNC Female
Audio Out	2 x XLR Male 3 pin
Control	RJ45
Stream	RJ45
Data	Hirose
Power 12V In	XLR Male 4 pin

RF

UHF Inputs	8 off UHF Maximum Ratio Combining
Tuning Step Size	250kHz

DVB-T Modulation

DVB-T Bandwidth	Dual Ped, 8MHz, 7MHz and 6MHz modes
DVB-T Guard	1/32, 1/16, 1/8, 1/4
DVB-T FEC	1/2, 2/3, 3/4, 5/6, 7/8
DVB-T Modulation	QPSK, 16QAM, 64QAM

Video

Video Coding	H.265 and H.264 (Sapphire-RXD3D version only)
Input Format H.264	1920x1080p 60/59.94/50Hz 1920x1080i 60/59.94/50Hz 1920x1080p 30/29.97/25/24/23.97Hz 1920x1080psf 30/29.97/25/24/23.97Hz 1280x720p 60/59.94/50Hz
Input Format HEVC	4K UHD: 4:2:2/4:2:0, 8/10-bit 2160p 23.98/24/25/29.97/30/50/59.94/60 HD: 4:2:2/4:2:0, 8/10-bit 720p 50/59.94/60 1080i 50/59.94/60 1080p 23.98/24/25/29.97/30/50/59.94/60 1080psf 23.98/24/25/29.97/30

Monitor

SFP	MSA or non-MSA modules 12G-SDI secondary output for monitoring including down sampling to HD
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HDR/WGC

We support	Rec. ITU-R BT.2100-2 (PQ and HLG) Rec. ITU-R BT.2020
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Audio

Format	Embedded
Decoder	MPEG-1 Layer 1, MPEG-1 Layer-2, Linear PCM
Quantity	8 pairs
Analygue	Line Level (+18/+24 dBu)

DVB ASI

Transport stream to 100Mb/s

IP Streaming

Formats	Unicast / Multicast / UDP / RTP / SRT
Bitrate	50Mb/s maximum

Genlock

Tri Level / Black Burst

Indicators

Display High Brightness IPS/TFT with touch screen control

Control

Local	Touch Screen
Remote	IP web browser Control

Dimensions

Size (WxDxH)	½ 19" 2RU
Weight	4Kg
Mounting	Side-by-side mount kit available as an option
Cooling	Front to rear forced air

Power

Power In:	12V DC 50-80W depending on number of downconverters
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Part Numbers

SAPPH-RXD3-2	Sapphire RX HEVC Decoder 2 way Diversity
SAPPH-RXD3-4	Sapphire RX HEVC Decoder 4 way Diversity
SAPPH-RXD3-6	Sapphire RX HEVC Decoder 6 way Diversity
SAPPH-RXD3-8	Sapphire RX HEVC Decoder 8 way Diversity
SAPPH-RXD3D-2	Sapphire RX HEVC/H.264 Decoder 2 way Diversity
SAPPH-RXD3D-4	Sapphire RX HEVC/H.264 Decoder 4 way Diversity
SAPPH-RXD3D-6	Sapphire RX HEVC/H.264 Decoder 6 way Diversity
SAPPH-RXD3D-8	Sapphire RX HEVC/H.264 Decoder 8 way Diversity

