



FEATURES

8 or 16 way diversity receive antennas

Ultra Low-Latency, typically 35mS end to end

H.264 legacy decoding with optional HEVC

4K UHD processing

Support for HD HDR and Timecode (film industry) signal insertion

Intuitive touch screen control

Web browser control

ST2022-7 redundant streaming

ST2110 interfaces high rate video over IP interfacing (SFP)

Sapphire-RXD5 Rack-mount Receiver Decoder

Sapphire-RXD5 is a Broadcast quality receiver decoding system, combining class-leading RF technology with Ultra Low-Latency H.264 and HEVC decoding, presented in a compact 1U 19" chassis.

The Sapphire-RXD5 combines an 8 way (optional 16 way) diversity COFDM receiver and DBS' Sapphire Ultra-Low Latency decoder in a single 1RU 19" package, offering end to end latency of less than 40mS which makes it ideal for live action scenarios.

Eight-way (optional 16 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.

Ultra-Low Latency H.264 HD 4:2:2 decoding is standard for legacy support.

The HEVC decoder licence enables support for resolutions up to 4K in 10 bit 4:2:2 formats 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.

The Sapphire-RXD5 will decode up to 8 stereo pairs and output them embedded on SDI. One pair of analogue audio outputs are also provided on XLR.

The Sapphire-RXD5 has a unified web-browser control interface for remote control. Local control is achieved with a 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-RXD5 enables onward streaming of video and audio and supports multiple streaming formats including ST2022-7 redundant streaming and SRT. Timecode and HDR signalling are also fully supported. The Sapphire-RXD5 can support ST2110 interfaces for users requiring high rate video over IP networks using the SFP interface provided.

Connectors

12G/HDS DI	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 or 16 x BNC Female
Audio Out	2 x Lemo
Control	RJ45
Stream	2x RJ45
Data	Hirose
Power 12V In	XLR Male 4 pin

RF

UHF Inputs	8 or 16 off UHF Maximum Ratio Combining
Tuning Step Size	250kHz

DVB-T Modulation

DVB-T Bandwidth	Dual Ped, 8/7/6MHz and 5MHz 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

UMVL Modulation

UMVL Bandwidth	8/7/6MHz and 5MHz modes
UMVL Guard	1/16, 1/8
UMVL FEC	1/3, 2/3
UMVL Modulation	BPSK, QPSK, 8-PSK, 16QAM

Video

Video Coding	H.264 and Optional H.265
Input Format H.264	1920x1080p 60/59.94/50Hz
<i>*Ultra Low Latency Domo encoding</i>	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

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
Analogue	1 pair, Line Level (+18/+24 dBu)

DVB ASI

	Transport stream to 100Mb/s
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IP Streaming

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

Genlock

	Tri Level / Black Burst
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Control

Local	Touch Screen
Remote	IP web browser Control

Dimensions

Size (WxDxH)	19" 1RU
Weight	4Kg
Cooling	Front to rear forced air

Power

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

Part Numbers

RXD5-2	Sapphire RXD5 H.264 HD decoder, 2 way diversity
RXD5-4	Sapphire RXD5 H.264 HD decoder, 4 way diversity
RXD5-6	Sapphire RXD5 H.264 HD decoder, 6 way diversity
RXD5-8	Sapphire RXD5 H.264 HD decoder, 8 way diversity

Sapphire RXD5 Includes:

H.264 HD Decode, DVB-T, UMLV, Dual pedestal, 2 Way diversity

Options

LIC-RXD5-HEVC	Add HD HEVC Decoding
LIC-RXD5-4K	Add 4K Decoding to RXD5
LIC-RXD5-ST2022-7	ST2022-7 Redundant streaming
LIC-RXD5-BISS2	BISS 2 Encryption / Decryption for Streaming / Decoding
LIC-RDX5-PACDIV	Add ASI packet diversity
LIC-RXD5-4WAY-DIV	2 Way to 4 Way RF Diversity
LIC-RXD5-6WAY-DIV	4 Way to 6 Way RF Diversity
LIC-RXD5-8WAY-DIV	6 Way to 8 Way RF Diversity
RXD5-16-UP	Sapphire RXD5 upgrade from 8 Way to 16 Way diversity (hardware)
LIC-RXD5-DEMOM2	Add demodulator 2
LIC-RXD5-DEMOM3	Add demodulator 3
LIC-RXD5-DEMOM4	Add demodulator 4
CA4097	Bi-Directional Camera control return cable Single channel
CA4098	Bi-Directional Camera control return cable Four channel
POA	On board stream recording

