



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

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

DVB-T Modulation

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|------------------|-----------------------------------|
| 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.265 and Optional H.264 |
| 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

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|-----|---|
| 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 |
|------------|---|

Audio

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|----------|--|
| 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 |
|---------------------|---------|

IP Streaming

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

Genlock

| | |
|-------------------------|--|
| Tri Level / Black Burst | |
|-------------------------|--|

Control

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|--------|------------------------|
| Local | Touch Screen |
| Remote | IP web browser Control |

Dimensions

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

Power

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|-----------|--|
| 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-DEM0D2 | Add demodulator 2 |
| LIC-RXD5-DEM0D3 | Add demodulator 3 |
| LIC-RXD5-DEM0D4 | 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 |

