Cygnus RX1 Receiver

Multi Codec Professional Decoder

The Cygnus RX1 is a multi-codec multi-service professional decoder specifically designed to receive UHD, and HD from Premier League Productions.

When not receiving Premier League Productions content, it can be used as a powerful professional decoder for other events and services.

As operators look to move to 4k from HD, the RX1 provides an easy transition path, and is a flexible platform for the modern distribution network.

Capable of supporting a wide variety of use-cases, the Cygnus RX1 is a next generation professional decoder.

Product Overview

Content Processing

The Cygnus RX1 can decode UHD (4k) HEVC, HD HEVC, MPEG-2, and MPEG-4 AVC compressed streams, whether 4:2:0 or 4:2:2, 8 bit or 10 bit, and produce uncompressed outputs via a range of outputs. Different combinations of codec can be utilized simultaneously to maintain flexibility for onward processing.

High Bit-rate / High Quality

For the very highest quality contribution links, even with the use of HEVC encoding, bit-rates greater than 60 Mbit/s may be required. The RX1 can decode multiple compressed video components of up to 150 Mbit/s.

Ultra Low latency

Having low end-to-end latency is often an important requirement for live contribution links. So the introduction of latency has been minimized in the design of the RX1.

Cygnus Director

The Cygnus RX1 supports MediaKind Cygnus Director, providing security and management for Premier League Productions distribution, and will support Cygnus Director 128 in the future.

HDR and WCG

UHD (4k) services are expected to rapidly evolve to include High Dynamic Range (HDR) and Wider Color Gamut (WCG). RX1 supports the relevant HDR and WCG standards as they are formalized.

Unit Features

The following features are available:

- 4x satellite, 4x ASI, and IP input
- 4 xSDI outputs, configurable up to 12G-SDI
- Supports HD or UHD video
- HEVC, MPEG-2, MPEG-4 AVC
- BISS Mode 1, Mode E
- Dual CAM slots
- Audio codecs:
    - Dolby E pass through
    - MPEG-1 Layer II
- Front panel control with confidence monitor
- Web based user interface
- Dual hot swappable power supplies

Orderable options:

- RX1/BAS/PREM/D5/UHD
    - 1 x UHD HEVC 4:2:2 10-bit or 4 x MPEG-4/MPEG-2 HD decode
    - 4 x 2.0 MP1L2 decode
    - Dolby E pass-through
- RX1/BAS/PREM/D5/4HD
    - 4 x MPEG-4/MPEG-2 HD decode
    - 8 x 2.0 MP1L2 decode
    - Dolby E pass-through
- RX1/BAS/PREM/D5/3HD
    - 3 x MPEG-4/MPEG-2 HD decode
    - 6 x 2.0 MP1L2 decode
    - Dolby E pass-through
- RX1/BAS/PREM/D5/2HD
    - 2 x MPEG-4/MPEG-2 HD decode
    - 4 x 2.0 MP1L2 decode
    - Dolby E pass-through
- RX1/BAS/PREM/D5/1HD
    - 1 x MPEG-4/MPEG-2 HD decode
    - 2 x 2.0 MP1L2 decode
    - Dolby E pass-through

- HEVC decode option also available

Specifications

Input Interfaces

ASI Transport Stream Input	Connector: 4 x BNC (F) 75 Ohm Max. input rate: 208 Mbps Packet length: 188/204 byte packets
Satellite Input	4 independent demodulators Frequency range: 950MHz to 2150MHz DVB FEC decode LNB max. 19V Connector: 4 x BNC (F) 75 Ohm Modulation: DVB-S, DVB-S2, DVB-S2X QPSK, 8PSK, 16PSK, 32PSK Packet length: 188/204 byte packets Standard: EN50083-9
External Clock Reference input	Connector: BNC (F) 75 Ohm Standard: EN50083-9
Control	Front panel keypad and confidence LCD Web browser interface

Video and Audio Options

Video Formats	2160p50*, 2160p59.94* 1080p50, 1080p59.94, 1080i25, 1080i29.97, 720p50, 720p59.97 *UHD version required
Video Decoding	1 x UHD (4k) HEVC Main/Main 10/Main 4:2:2 10 Profiles @ Level 5.1, up to 150 Mbps 4 x HD HEVC Main/Main 10/Main 4:2:2 10 Profiles @ Level 5.1** 4 x HD MPEG-4 AVC Main/High Profiles @ Level 4*, High 4:2:2 Profile (includes 10-bit) @ Level 4.2* 4 x HD MPEG-2 Main Profile @ High Level*, 4:2:2 Profile (includes 10-bit) @ High Level* Up to 150 Mbps aggregate * some bitrate limitations apply. Number of decodes depends on options purchased ** HEVC decode is an additional option available to purchase
Audio Decoding	Up to 12 x 2.0 MPEG-1 Layer-II decode Up to 4 x Dolby®E pass-through Audio sampling rate: 48 kHz

Outputs

#SDI Output	Connector: Up to 4 x BNC 75 Ohm HD-SDI standard: SMPTE ST 292 3G-SDI standard: SMPTE ST 424* 12G-SDI standard: SMPTE ST 2082* Embedded audio: SMPTE ST 299 SDR/HDR Signalling: SMPTE ST 425-5 *option
IP Output	Connector: 2xRJ45 Format: 100/1000TBaseT

Content Security

Dual DVB Common Interface	Enables support for all major CAM modules Multi-service decryption Up to 2 CAM modules per option card
BISS Decryption	Decryption of BISS Mode 1 and E

Physical and Power

Dimensions (W x D x H)	440 x 560 x 44mm (17.2 x 22 x 1.75" approx.)
Input Voltage	110 VAC / 240 VAC
Power Consumption	550 Watt max. 175 Watt nominal.
Cooling	Integrated fans

Environmental Condition

Operating Temperature	0°C to 50°C (32° to 122°F)
Storage Temperature	-20°C to 65°C (4° to 150°F)
Relative Humidity	5% to 95% (Non-condensing)

Compliance

Compliance	CE Marked in accordance with all applicable EU Directives
EMC Compliance	EN55032, EN55024 and FCC CFR47 Part 15B Class A
Safety Compliance	EN60950-1 and IEC60950-1