

# Cygnus RX1



## Multi Codec Professional Decoder

The Cygnus RX1 is a multi-codec multi-service professional decoder specifically designed to meet the needs of the contribution market.

As Operators look to move from 4k trials to revenue generating services they are also looking to new IP infrastructure deployments to enable low cost and flexible carriage of the high data rate content, but with the flexibility and fallback of traditional satellite connectivity.

Through a fully flexible Platform, RX1 allows for deployment as appliance, virtualized or into the Cloud. With the addition of the MediaKind accelerator module, users can gain the benefit of additional processing power without increasing CPU loading on the most demanding services delivering high quality, high density and ultra-low latency capability at an affordable cost.

## Product Overview

### Content Processing

The 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.

### 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:

- Satellite\*, ASI\* or IP input
- 4 x 3G / 12G SDI
- 1 x 3G SDI monitor port
- Dual 10Gb IP I/O\*
- Supports HD or UHD video
- HEVC, MPEG-2, MPEG-4 AVC
- BISS v1 and v2, Mode 1, Mode E
- Dual CAM slots\*
- Audio codecs:
  - ◆ LPCM pass through
  - ◆ Dolby E pass through
  - ◆ MPEG-1 Layer II
  - ◆ Dolby Digital
  - ◆ Dolby Digital Plus
  - ◆ MPEG-H
- Transport Stream passthrough (IP output)
- Front panel control with confidence monitor
- Web based user interface
- Dual hot swappable power supplies

\*Optional

### Sample Configuration



## Inputs and Control

<b>ASI Input*</b>	<p>Connector: 4 x BNC (F) 75 Ohm                  Max. input rate: 208 Mbps                  Packet length: 188/204 byte packets                  Standard: EN50083-9</p>
<b>IP Input</b>	<p>Connector: 2 x RJ 45 — Format: 100/1000BaseT                  Connector: 2 x SFP — Format: 100/1000/10000TBaseT*                  Max. input rate: 208Mbps</p>
<b>Satellite Input*</b>	<p>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</p>
<b>External Clock Reference input</b>	<p>Connector: BNC (F) 75 Ohm                  Standard: EN50083-9</p>
<b>Control</b>	<p>Front panel keypad and confidence LCD                  Web browser interface                  REST interface</p>

## Outputs

<b>#SDI Output</b>	<p>Connector: Up to 5 x BNC 75 Ohm (4 x main + 1 x monitor)                  SD-SDI standard: SMPTE ST 259                  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                  *not available on the monitor port</p>
<b>IP Output</b>	<p>Connector: 2 x RJ45 — Format: 100/1000TBaseT                  Connector: 2 x SFP — Format: 100/1000/10000TBaseT*</p>

\*requires additional value pack

## Video and Audio Options

<b>Video Formats</b>	2160p50, 2160p59.94 1080p50, 1080p59.94, 1080i25, 1080i29.97, 720p50, 720p59.97
<b>Video Decoding*</b>	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
<b>HDR -&gt; SDR Conversion</b>	HDR HLG10 or HDR PQ10 to BT.709 conversion** ** available on the monitor port only
<b>Audio Decoding</b>	MPEG-1 Layer-II decode* MPEG-H decode* Dolby®E pass-through Dolby Digital® decode* / pass-through Dolby Digital® Plus decode* / pass-through Linear PCM pass-through Audio sampling rate: 48 kHz

## Content Security

<b>Dual DVB Common Interface</b>	Enables support for all major CAM modules Multi-service decryption Up to 2 CAM modules per option card
<b>BISS Decryption</b>	Decryption of BISS v1 and v2*, Mode 1 and E
<b>Director*</b>	A full Conditional Access system to secure delivery of digital content encrypted using rotating keys that are distributed within the transport stream

\*requires additional value pack

## Physical and Power

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

## Environmental Condition

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

## Compliance

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