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. 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 slot
- 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

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
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</table>
| **ASI Transport Stream Input** | Connector: 4 x BNC (F) 75 Ohm  
Max. input rate: 208 Mbps  
Packet length: 188/204 byte packets  
Standard: EN50083-9 |
| **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

<table>
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</table>
| **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

<table>
<thead>
<tr>
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<th>Description</th>
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</table>
| **#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

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<thead>
<tr>
<th>Security Feature</th>
<th>Description</th>
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| **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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td><strong>Dimensions (W x D x H)</strong></td>
<td>440 x 560 x 44mm (17.2 x 22 x 1.75” approx.)</td>
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<tr>
<td><strong>Input Voltage</strong></td>
<td>110 VAC / 240 VAC</td>
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<tr>
<td><strong>Power Consumption</strong></td>
<td>550 Watt max. 175 Watt nominal.</td>
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<td><strong>Cooling</strong></td>
<td>Integrated fans</td>
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## Environmental Condition

<table>
<thead>
<tr>
<th>Condition</th>
<th>Specification</th>
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<tbody>
<tr>
<td><strong>Operating Temperature</strong></td>
<td>0°C to 50°C (32° to 122°F)</td>
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<tr>
<td><strong>Storage Temperature</strong></td>
<td>-20°C to 65°C (4° to 150°F)</td>
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<tr>
<td><strong>Relative Humidity</strong></td>
<td>5% to 95% (Non-condensing)</td>
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## Compliance

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<th>Compliance Type</th>
<th>Description</th>
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<tr>
<td>Compliance</td>
<td>CE Marked in accordance with all applicable EU Directives</td>
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<tr>
<td>EMC Compliance</td>
<td>EN55032, EN55024 and FCC CFR47 Part 158 Class A</td>
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<tr>
<td>Safety Compliance</td>
<td>EN60950-1 and IEC60950-1</td>
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