

MK RX1



Multi Codec Professional Decoder

The MK 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

Sample Configuration



Specifications

Inputs and Control

ASI Input*	<p>Connector: 4 x BNC (F) 75 Ohm</p> <p>Max. input rate: 208 Mbps</p> <p>Packet length: 188/204 byte packets</p> <p>Standard: EN50083-9</p>
IP Input	<p>Connector: 2 x RJ 45 — Format: 100/1000BaseT</p> <p>Connector: 2 x SFP — Format: 100/1000/10000TBaseT*</p>
Satellite Input*	<p>4 independent demodulators</p> <p>Frequency range: 950MHz to 2150MHz DVB</p> <p>FEC decode</p> <p>LNB max. 19V</p> <p>Connector: 4 x BNC (F) 75 Ohm</p> <p>Modulation: DVB-S, DVB-S2, DVB-S2X</p> <p>QPSK, 8PSK, 16PSK*, 32PSK*</p> <p>Packet length: 188/204 byte packets</p> <p>Standard: EN50083-9</p>
External Clock Reference input	<p>Connector: BNC (F) 75 Ohm</p>
Control	<p>Front panel keypad and confidence LCD</p> <p>Web browser interface</p> <p>REST interface</p>

Outputs

SDI Output	<p>Connector: Up to 5 x BNC 75 Ohm (4 x main + 1 x monitor)</p> <p>SD-SDI standard: SMPTE ST 259</p> <p>HD-SDI standard: SMPTE ST 292</p> <p>3G-SDI standard: SMPTE ST 424</p> <p>12G-SDI standard: SMPTE ST 2082*</p> <p>Embedded audio: SMPTE ST 299</p> <p>SDR/HDR Signalling: SMPTE ST 425-5</p> <p>*not available on the monitor port</p>
IP Output	<p>Connector: 2 x RJ45 — Format: 100/1000TBaseT</p> <p>Connector: 2 x SFP — Format: 100/1000/10000TBaseT*</p>

*requires additional value pack

Video and Audio Options

Video Formats	2160p50, 2160p59.94 1080p50, 1080p59.94, 1080i25, 1080i29.97, 720p50, 720p59.97
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
HDR -> SDR Conversion	HDR HLG10 or HDR PQ10 to BT.709 conversion** ** available on the monitor port only
Audio Decoding	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

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 v1 and v2*, Mode 1 and E
Director*	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

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