

RD9000

UHD HEVC PROFESSIONAL DECODER



The Harmonic RD9000 Ultra HD professional decoder enables rapid, reliable deployment of eye-catching UHD content for contribution and primary distribution applications.

With a significant increase in UHD TV sets hitting the market, content providers and broadcasters are looking for a solution to address the needs of early adopters. Compact and reliable, the RD9000 real-time professional decoder is the answer. Designed to ensure high performance, the RD9000 delivers pristine UHD for an immersive, high-resolution experience.

Innovative Technology

RD9000 is software-based UHD HEVC (H.265) professional decoder that is perfect for contribution and primary distribution applications. The platform's software architecture provides content providers and broadcasters with maximum flexibility, which is paramount in today's market.

Contribution encoding is the critical step to achieve a superior end-user experience. With its wide range of encoding tools, HEVC offers incredible compression efficiency, making live UHD delivery achievable for satellite, cable, terrestrial and fiber networks.

Single-slice UHD HEVC technology is a cornerstone of the RD9000, eliminating border compression artifacts and maximizing compression efficiency. This technology is essential to achieving superior video quality in premium contribution applications. In addition, the RD9000 is ready for HDR (High Dynamic Range) along with WCG (Wide Color Gamut) to ensure drastic contrast and color rendering for "wow" video experience.

Combined with Harmonic's CP9000 UHD HEVC encoder, the RD9000 UHD HEVC decoder offers users a single-slice UHD contribution solution.

Versatile and Future-Proof

UHD contribution and primary distribution use cases are supported by the RD9000. The decoder supports 4:2:2 and offers significant HEVC bitrate savings, giving broadcasters a true edge over the competition.

Supporting HDR and WCG via a flexible, software-based design, the RD9000 is future-proof.

Additionally, the RD9000 decoder supports DVB/SMPTE standards and is interoperable with professional encoders.

World-Class Service and Support

Harmonic stands behind the RD9000 UHD decoder with comprehensive service and support programs, including system design, service deployment, technical support and network maintenance. World-class service plans and a global network of flexible and responsive support professionals help ensure our customers can deliver outstanding "anytime, anywhere, any-device" video experiences.

HIGHLIGHTS

- Superior real-time ultra HD HEVC decoding
- Single/multi slice UHD decoder
- HEVC Main 10 and Main 422 10-bit decoding at 50/59.94 fps
- Two versions up to 40Mbps or up to 160Mbps
- Compact and low-power appliance
- HDR-ready
- HDMI or quad 3G-SDI outputs
- Decode and down-mix of up to 8 audio services
- Down-conversion for monitoring
- Dual AC PSU



RD9000 rear panel – HDMI & 12G SDI output



RD9000 rear panel – 4 x 3G or 12G-SDI output

SPECIFICATIONS

INPUT/OUTPUT

| | |
|--------------------|---|
| MPEG over IP input | RJ-45 10/100/1000 UDP or RTP CBR or Null-stripped TS RTP & SMPTE-2022/Cop3 FEC Unicast / Multicast IGMP V1/V2/V3 |
| Outputs | HDMI 2.0 + 1x12G-SDI Optional 4x3G-SDI or 1x12G-SDI output (Replace HDMI + 1x12G-SDI) |

VIDEO PROCESSING

| | |
|--------------------|---|
| Performances | Two models: RD9050: UHD up to 40Mbps RD9080: UHD up to 160Mbps |
| CODEC | HEVC / H.265 MPEG-4 / AVC / H.264 MPEG-2 |
| Decoding Profiles | HEVC: Main10 422 Level 5.1 AVC/H.264: Up to Hi422@L4.2 MPEG-2: up to 422@HL |
| Chroma sampling | 4:2:0, 4:2:2 |
| Bit Depth | 8, 10-bit |
| Resolution | 3840x2160p (UHD) 1920x1080p 1920x1080i 1280x720p |
| Frame Rates | 60, 59.94, 50, 30, 29.97, 25, 24, 23.97 |
| Down-up conversion | Any format / frame rate above |
| HDR1 | PQ10, HLG |

PHYSICAL

| | |
|------------------------|--|
| Dimensions (H x W x D) | 1.7 x 17.2 x 16.9 in (1 RU) 4.3 x 43.7 x 42.9 cm (1 RU) |
| Weight | 26.7 lbs / 12kg |
| Power Consumption | 190 W |
| Input Voltage | 100-240 VAC |
| Cooling | Front to rear airflow |
| Features | Dual AC PSU |

ENVIRONMENTAL

| | |
|----------------------------|--|
| Operating Temperature | 41° to 104° F 5° to 40° C |
| Storage Temperature | 23° to 113° F -10° to 70° C |
| Maximum Humidity | 90% |
| Electromagnetic Compliance | CE marked in accordance with the 93/68/EEC (22/07/93) directive EN 55022 EN 55024 EN 61000-3-2 |
| Safety | IEC 60950 and EN 60950 UL 60950 |

AUDIO PROCESSING

| | |
|-------------------------------|--|
| Performances | Up to 8 audio services |
| Audio codecs | MPEG ¹ Layer2 AAC-LC, HE-AAC V1, HE-AAC V2 Dolby [®] Digital (AC-3, E-AC-3) |
| Decoding Formats and bitrates | MPEG-1 Layer II 2.0 64-256 kbps AC-3 2.0 128-448 kbps AC-3 5.1 384-640 kbps DD+ (E-AC-3) 5.1 192-448 kbps AAC-LC/HE-AAC 2.0 32-160 kbps AAC-LC/HE-AAC 5.1 96-448 kbps |
| Output format | Linear PCM Pass-through ¹ |
| Embedded audio | Up to 8 audio |

CONTROL AND MONITORING

| |
|--|
| WEB-browser User interface |
| SNMP alarms for NMS integration ¹ |
| Firmware update via WEB User Interface |
| RJ-45 Ethernet 10/100/1000 |

Note 1: check for availability

ORDERING INFORMATION

HARDWARE ELEMENTS

| Part Number | Description |
|-----------------|--|
| RD9050-IU-2AC | Decoder UHD HEVC 4:2:0/4:2:2, up to 40Mbps, 1 x 12G SDI, 1 x HDMI 2.0 |
| RD9080-IU-2AC | Decoder UHD HEVC 4:2:0/4:2:2, up to 160Mbps, 1 x 12G SDI, 1 x HDMI 2.0 |
| RD9X00-HW-3GSDI | Optional: Quad 3G-SDI Output (Replace 1x12G SDI + HDMI) |