



# RV-HD Portable Compact Video Encoder

## Live streaming

- > AVC, HEVC & V-Nova PERSEUS
- > Economical Dual HD Channel
- > Live events coverage
- > News gathering
- > Deliver over 3G/4G
- > Upload directly to CDN



### Pushing network bandwidth to the **max**

RioVIDEO is focused on delivering flexible cost effective video compression technology, to meet the demands of ultra low bandwidth networks for TV and media applications.

The **RioVIDEO RV-HD** is a 1RU portable compact, High Performance Compute (HPC) platform that is designed to accommodate the rapid developments in next generation compression technology, such as HEVC/H.265 and V-Nova PERSEUS codecs. The platform also supports standard AVC/H.264 of today. With flexible HPC architecture, the **RioVIDEO RV-HD** delivers efficient compression performance with a range of connectivity options.

The **RioVIDEO RV-HD** Encoder is targeted at live streaming for small scale TV channel applications, point to point contribution from "in the field" events and primary distribution:

#### Streaming applications



Live streaming to STB and connected devices over ADSL



Live ABR streaming to mobile devices over 3G/4G

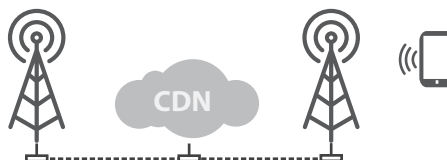
#### Live event applications



Live contribution over 3G/4G or fixed networks

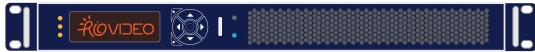


Live CDN streaming over 3G/4G networks



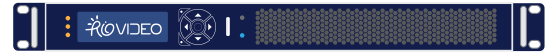
#### KEY FEATURES:

- Portable 1RU chassis
- Front panel control
- Dual HD Channel encoder
- SNMP Monitoring
- Flexible video scaler for HD, SD and mobile video resolution ABR
- 4:2:0 8bit Video Encoding, 150kbit/s-6Mbit/s
- Stereo AAC Audio Encoding, 24kbit/s-192kbit/s
- Output IP/UDP for Unicast/Multicast TS delivery
- Output Apple HLS for CDN delivery
- Optional Mobile Network Modem for 3G/4G connectivity



TS Over IP/UDP

RV-HD Encoder for use in professional low bandwidth contribution applications.



RV-HD Decoder



Connected Device



HLS via CDN

RV-HD Encoder for use in live web streaming to connected device applications



HLS via CDN or TS Over IP/UDP



Consumer STB

RV-HD Encoder for use in live streaming over ADSL for PayTV applications

## Specification

Encode Feature	Description
Video Codec Profiles and Levels	<p><b>HD AVC ITU Rec. H.264 (2xHD):</b> Main and High (8bit) profile 4:2:0</p> <ul style="list-style-type: none"> <li>Max resolution: Level 4.0 1920x1080</li> <li>Min resolution: Level 1.2 180x180</li> </ul> <p><b>Optional HD HEVC ITU-T Rec. H.265 (1xHD):</b> Main (8bit) profile 4:2:0 Main tier:</p> <ul style="list-style-type: none"> <li>Max resolution: Level 4.0 1920x1080</li> <li>Min resolution: Level 1.2 180x180</li> </ul> <p><b>Optional HD V-Nova PERSEUS (2xHD):</b></p> <ul style="list-style-type: none"> <li>Max resolution: 1920x1080</li> <li>Min resolution: 180x180</li> </ul> <p><b>Optional UHD HEVC (1xUHD):</b> Main (8bit) and Main10 (10bit) profile 4:2:0</p> <ul style="list-style-type: none"> <li>Level 5.1 (3840x2160p50/59.94)</li> <li>Level 5.0 (3840x2160p25/29.97)</li> </ul> <p><b>Optional UHD V-Nova PERSEUS (1xUHD):</b></p> <ul style="list-style-type: none"> <li>3840x2160p25/29.97</li> </ul>
Video HD-SDI Input	<p><b>HD-SDI video inputs</b> Supported input formats:</p> <ul style="list-style-type: none"> <li>1.5G 1080i 25Hz,29.97Hz</li> <li>1.5G 1080p 23.98Hz,24Hz,25Hz,29.97Hz</li> <li>1.5G 720p 50Hz,59.94Hz</li> <li>270M 625i50Hz</li> <li>270M 525i59.94Hz</li> </ul> <p><b>Optional UHD:</b></p> <ul style="list-style-type: none"> <li>4x 3G (12G) 3840p 50Hz,59.94Hz</li> <li>4x 1.5G (6G) 3840p 25Hz,29.97Hz</li> </ul> <p><b>Optional SMPTE 2022-6 IP input</b></p>
Video Pre-Processing	<ul style="list-style-type: none"> <li>Interlace or Progressive encoding</li> <li>Video Deinterlacer</li> <li>Flexible Video Scaler</li> <li>ABR Multi Profile generation</li> </ul>
Video Bitrate (HD)	150kbit/s to 6Mbit/s CBR (user selectable)
Video GOP Structure	IP/IBP/IBBBP (Hierarchical). Length 12-240
Audio codecs	2, 4 or 8 channel PCM input via embedded HD-SDI AAC-LC 64-192kbit/s HE-AAC 48-64kbit/s HE-AACv2 24-48kbit/s
Compressed Stream Output	ES encapsulated in an MPEG2 transport stream. TS delivered overover IP/UDP Unicast or Multicast
Compressed Web Output	TS encapsulated in Apple HLS.
3G/4G Communications	Optional 3G/4G mobile module

Physical Feature	Description
Form Factor	1RU rack mount unit with front to back cooling. Depth 280mm Weight 6.3Kg (boxed) CE, RoHS Compliance
Electrical	100 - 240 volts 50/60Hz Autorange
Environmental	Ambient operating temperature range: 0°C - 40°C. Relative humidity 10%-80%
Connectors	1x GbE RJ45 for HTTP remote control. 1x GbE RJ45 for TS streaming 4x HD/SDI video input (2xHD or 4xSD) 1x IEC Power Connector Optional RF Connectors (with 3G/4G module) Optional extra 2x GbE RJ45 ports
Front panel display	LED backlit LCD panel with 7 user buttons for front panel menu navigation and configuration.
Front panel SIM slot	Optional user 3G/4G SIM card slot

Specification subject to change, correct at time of publication



Image shows optional 3G/4G mobile module

Version September 2017