

RD6000

CONTRIBUTION RECEIVER DECODER



ENSURING HIGH QUALITY VIDEO DECODING, THE RD6000 CONTRIBUTION RECEIVER DECODER IS PERFECTLY DESIGNED FOR ALL SATELLITE AND TELECOM CONTRIBUTION NETWORKS REQUIRING UP TO 4:2:2 10-BIT.

The RD6000 is the latest generation of Integrated Receiver Decoder solution to join Thomson Video Networks' RD series portfolio.

Positioned for MPEG contribution market, the RD6000 is suitable for:

- Carriers providing circuit between regional studios and central playout facility
- Contribution (backhaul) circuits from occasional venues such as sports areas
- Links from playout centers to broadcasting affiliates
- Distribution from playout centers to broadcasting headend

The RD6000 is a natural companion to the Thomson ViBE CP6000 encoder for satellite contribution systems. It can also be deployed for telecom contribution applications, especially when single channel decoding is required.

Naturally, the RD6000 is also suitable for decoding applications where the encoding is performed by another encoder vendor.

DESIGNED FOR CONTRIBUTION

Thanks to its small depth, the RD6000 fits any system where space is a major constraint.

With a rich set of inputs, the RD6000 copes with a wide range of transmission media. This includes:

- DVB-S/S2 satellite input
- Dual IP gigabit Ethernet
- ASI input

The RD6000 supports automatic input redundancy to enhance system robustness. In the event of input signal failure, the decoder automatically switches to a designated backup feed.

A genlock input is natively provided to help the operator to synchronize the video decoding among a pool of RD6000 platforms.

For protected contents over satellite, the RD6000 manages BISS mode-1/E descrambling as software option.

MULTI-FORMAT DECODER

With automatic format detection, the RD6000 decodes all major video formats, including:

- MPEG-2 and H.264
- SD and HD
- 4:2:0 and 4:2:2
- 8-bit and 10-bit

All these features are natively available in the unit without additional hardware. By default, the RD6000 supports SD 4:2:0/4:2:2 formats.

Thanks to software licenses, the unit can be upgraded in the field to manage HD 4:2:0/4:2:2 8 and 10-bit, enabling future-proof deployments and thereby reducing operator CAPEX.

The decoded video is delivered on dual SD/HD/3G SDI outputs as well as composite and HDMI outputs to simplify confidence monitoring.

The RD6000 decodes up to eight stereo audio channels in all major audio formats, including MPEG Audio, Dolby® Digital, Dolby® Digital Plus, Dolby E and AAC.

The decoded audio are delivered on AES/EBU interfaces, analog outputs or directly embedded in the SDI stream. For 5.1 channels, down-mixing to stereo or pass-through is proposed.

EASY TO OPERATE

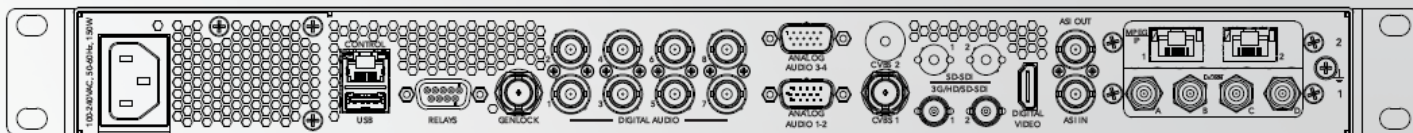
The RD6000 offers a Web interface supported by all major browsers and a front panel for local and remote control/supervision.

The RD6000 also embeds an SNMP agent for centralized management system integration.

KEY FEATURES

- › Support of any video feeds
 - MPEG-2/H.264 SD 4:2:0 and 4:2:2
 - MPEG-2/H.264 HD 4:2:0
 - MPEG-2/H.264 HD 4:2:2 (8/10-bit)
- › Genlock input
- › Dual SD/HD/3G-SDI output
- › Up to 8 audio services decoding
- › AES/EBU and analog audio output
- › Ancillary data support
- › Single/Multi service descrambling
 - BISS mode 1 and E
 - 2 x DVB-CI slots (for CAM)
- › SCTE-35 to SCTE-104 conversion
- › PID/Service filtering
- › Input redundancy
- › ASI input/output
- › Dual IP input/output:
 - SMPTE 2022 FEC correction on input
 - SMPTE 2022 FEC generation on output
- › Quad DVB-S/S2 input:
 - Up to 32APSK, Multi-TS (ISI)

RD6000 BACK PANEL



RD6000 SINGLE AC PSU

SPECIFICATIONS

Video Decoding

- By default:**
- MPEG-2/H.264 SD 4:2:0/4:2:2**
 - › MPEG-2 MP@ML, 422P@ML
 - › H.264 MP@L3, up to Hi422P@L3.2
- Software option:**
- MPEG-2/H.264 HD 4:2:0**
 - › MPEG-2 422P@HL
 - › H.264 up to HP@L4.2
- Software option:**
- MPEG-2/H.264 HD 4:2:2 8/10-bit**
 - › MPEG-2 422P@HL
 - › H.264 up to Hi422P@L4.2
- Output Formats**
 - › 1080p@23.97, 24, 25, 29.97 and 30 Hz
 - › 1080i@25, 29.97 and 30 Hz
 - › 720p@50, 59.94 and 60 Hz
 - › 576i@25 Hz
 - › 480i@29.97 Hz

Audio Decoding

- › 4 stereo services (by default)
- › 8 stereo services (as option)

Input Formats

- › Dolby® AC-3 (2.0 and 5.1)
- › Dolby® EAC-3 (2.0 and 5.1)
- › MPEG1/2 layer II
- › AAC (LC, He, Hev2)
- › Dolby® E pass-through
- › Linear PCM pass-through

Output Formats

- › Digital pass-through
- › PCM (downmixing for 5.1)
- › Analog (downmixing for 5.1)

Ancillary Data

- SDI VANC**
 - › AFD (SMPTE 2016)
 - › TXT/WSS/VPS (SMPTE 2031)
 - › Closed Captions (CEA-708)
 - › OP-47 (SMPTE-RDD08)
 - › Time Code (SMPTE 12M-2)
 - › SMPTE-RDD11, SMPTE 2038
 - › TVG2X
 - › AMOL-48/96 (SCTE-127)
 - › SCTE-104 cue (SMPTE 2010)
 - › Video Index Info (SMPTE RP186)

SDI HANC

- › Time Code (SMPTE 12M-2)
- VBI Waveform (in SDI/CVBS)**
 - › TXT/WSS/VPS
 - › Time code (SMPTE 12M-2)
 - › Line 21 Captions (CEA-608)
 - › TVG2X
 - › AMOL-48/96 (SCTE-127)
- Video Overlay**
 - › DVB subtitles
 - › CEA-608, CEA-708 CC

Audio/Video Interfaces

- Video Output**
 - › SD/HD/3G-SDI: 2 x 75Ω BNC
 - › Digital: 1 x HDMI
 - › Composite: 1 x 75Ω BNC (NTSC, PAL-B/G/I/D/M/N)

Audio Output

- › Embedded in SDI
- › AES/EBU: 8 x 75Ω BNC
- › Analog: 2 x subd15 (4 Stereo) XLR breakout cable on demand

Genlock Input

- › 1 x 75Ω BNC

TS Input Interfaces

- ASI Input**
 - › 1 x 75Ω BNC
 - › Max rate: 200 Mbps
- IP Input**
 - › 2 x RJ45 (shared with IP out)
 - › 10/100/1000 auto-negotiate
 - › UDP or RTP
 - › Multicast or Unicast
 - › CBR or null-stripped
 - › Max rate: 200 Mbps
 - › SMPTE 2022 FEC correction
 - › IGMP v1/v2/v3
- DVB-S/S2 Input**
 - › 4 x 75Ω F-type (one active)
 - › Frequency: 950 – 2150 MHz
 - › Symbol rate: 1 – 60 MSps
 - › DVB-S QPSK (all FEC rates)
 - › DVB-S2 QPSK, 8PSK, 16APSK and 32APSK (all FEC rates)
 - › CCM and VCM
 - › Multi-stream (single ISI)
 - › LNB control (VDC/22 kHz)

TS Output Interfaces

- ASI Output**
 - › 1 x 75Ω BNC
 - › Max rate: 200 Mbps
- IP Output**
 - › 2 x RJ45 (shared with IP in)
 - › 10/100/1000 auto-negotiate
 - › UDP or RTP
 - › Multicast or Unicast
 - › Max rate: 200 Mbps
 - › SMPTE 2022 FEC generation

Descrambling

- BISS**
 - › BISS-1/-E (injected ID)
 - › Up to 12 separate keys
- DVB-CI**
 - › 2 x DVB-CI slots
 - › Single/Multi-service

Processing

- PID/Service filtering**
 - › Up to 10 SPTS/MPTS generation
 - › Automatic table update

Control and Supervision

- › Web GUI for remote control
- › SNMP agent
- › 3 x relays

Power Supply

- › Single AC PSU
- › Dual AC PSU with two plugs
- › 100 – 240 VAC, 50 – 60 Hz
- › 70 Watt max. (typ. 60 Watt)

Physical Characteristics

- › 1RU x 19", H x W x D = 44 x 437 x 370 mm (1.72 x 17.2 x 14.6 inches)
- › 2.9 – 3.3 Kg (6.5 – 7.25 lbs)

Environmental Conditions

- › Operating temperature: 0° to 50°C (32° to 122°F)
- › Relative operating humidity: 5% to 95% (non condensing)
- › Storage temperature: -40° to 65°C (-40° to 149°F)
- › Relative storage humidity: 5% to 95% (non condensing)

ORDERING INFORMATION

Base Units

- RD6000-1U-1AC-AES-G (Single AC PSU)**
- RD6000-1U-2AC-AES-G (Dual AC PSU)**
 - › RD6000 base unit (1U)
 - MPEG-2/H.264 SD 4:2:0/4:2:2
 - 4 x audio decoder
 - SD/HD/3G-SDI output
 - CVBS, HDMI output
 - Analog/AES output
 - ASI input/output
 - Genlock input

Hardware Options

- RD6000-HW-GIGE-2**
 - › MPEG over IP input/output
 - 2 x GigE ports
- RD6000-HW-DVBS2-4**
 - › DVB-S/S2 input
 - 4 x RF inputs - one active,
 - QPSK, 8PSK, CCM
 - LNB power supply
- RD6000-HW-DVBCI-2**
 - › Dual DVB-CI slots
 - Single service descrambling

Software Options

- RD6000-LIC-DEC-420**
 - › 4:2:0 HD license
 - MPEG-2/H.264 HD 4:2:0
- RD6000-LIC-DEC-HD-422**
 - › 4:2:0 and 4:2:2 HD license
 - MPEG-2 HD 4:2:0/4:2:2
 - H.264 HD 4:2:0/4:2:2 8/10-bit
- RD6000-LIC-UPG-AUD-8**
 - › Additional 4 audio decoding license (For a total of 8 Audio decoding)
- RD6000-LIC-FEC**
 - › SMPTE 2022 FEC generation license
- RD6000-LIC-SCTE104**
 - › SCTE-35 to SCTE-104 messages conversion license

RD6000-LIC-DSC-BISS

- › BISS-1/E descrambling license
- Single/Multi-service descrambling
- Up to 12 keys

RD6000-LIC-DSC-MULTI

- › DVB-CI multi-service descrambling license

RD6000-LIC-DVBS2-ADV

- › DVB-S2 Advanced mode
- 16APSK/32APSK
- Multi-service (ISI selection)
- VCM

RD6000-LIC-FILTER

- › PID/Service filtering license
- Up to 10 MPTS/SPTS

PROFESSIONAL SERVICES

Our professional service offerings ensure optimal system performance and maximize uptime. These services include call centers staffed around the clock; system planning, design, and commissioning; professional training courses; and technical maintenance programs and service agreements.