T-Ramp™ IP+DVB-S-S2+ASI/ SDI+HDMI+ASI+IP

Real Time, Hardware Based, 1 RU, Local or Remotely Manageable Multi Resolution, SD and HD, 4:2:0, H.264 and MPEG-2 Decoder with IP, DVB-S/S2, or Looped ASI Input. Set Up via LCD Front Panel or via Browser. Output is SDI (SMPTE 259M), HD-SDI (SMPTE 292M), ASI, Component, HDMI, or Composite. Audio Output Includes Embedded AAC, AC-3, or MPEG-1 Layer II on SDI Ports or Balanced Audio with Dual XLR Connectors. Dual CAM Modules. Can Decrypt 8 Services if used with 4 Service CAM Cards.

Front

Rear

Features

- Inputs:
  - IP (100/1000 M), DVB-ASI with loopthrough, or DVB-S or DVB-S2 with loopthrough
- Outputs:
  - IP (UDP, RTP), HD-SDI, SDI, HDMI, Two mirrored DVB-ASI outputs, YPrPb, or Two Composite outputs – one BNC, one RCA
- Audio Outputs: Embedded AAC, MPEG-1 Layer II, YPbPr, Composite, Balanced XLR, Dolby Digital® AC-3 Passthrough
- Optional DS3 in/out interface is compatible with Barco and Huawei protocols
- Built-in re-multiplexer
- BISS 1 or BISS E decryption
- Dynamic PMT detection and automatic update
- VBI teletext, EBU/DVB subtitle support
- WSS support
- Closed Caption support
- Unicast and Multicast support
- Down converts HD input to SD out
- 2 CI slots support 4 service CAM modules each
- Compatible with: Conax, Cryptoworks, Irdeto, NDS, Mediaguard, SECA, Viaccess, and more
- Supports PAL, NTSC, and SECAM
- LCD front panel controls plus web-based management
- Maximum IP output bit rate is 70 Mbps
- Maximum 32 separate Unicast or Multicast IP out streams

Applications

- Off air satellite receiver
- MPEG-2/4/H.264 HD Decoder
- Transport Stream Decoder
- Multichannel satellite decryption
- IP or ASI re-multiplexing
- Signal monitoring
- IP to ASI and ASI to IP converter

Overview

IRD's are devices used by professionals to receive or demodulate RF feeds and to then decode the resultant MPEG encoded stream.

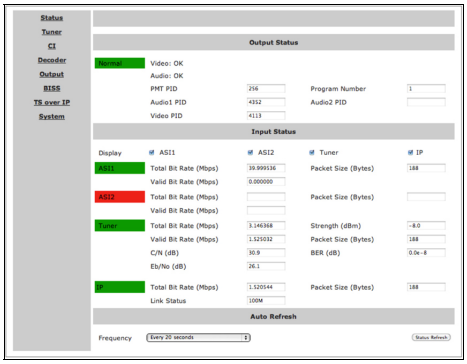
The T-Ramp™ IP+DVB-S-S2+ASI/SDI+HDMI+ASI+IP is an advanced MPEG-2 and H.264 standard definition integrated receiver decoder for both high definition and standard definition video. It receives signals from many different sources, including IP, ASI, DVB-S, and DVB-S2. Its numerous output interfaces include SDI, HD-SDI, HDMI, ASI, YPbPr, CVBS, and XLR audio, to meet many different system requirements. The T-Ramp also has two common interface slots which can decode multiple scrambled channels.

Audio support includes embedded AAC or MPEG-1 Layer II on SDI ports, Dolby Digital® AC-3 passthrough, or analog audio output (L, R) on XLR's.

The T-Ramp also converts transport streams to IP, or decodes IP streams to a wide variety of different outputs, which makes it ideal for IPTV systems and IP-based head-ends.

The system can be operated with front panel controls or web-based management software. With multiple inputs and outputs, the T-Ramp can be used in many different settings – including traditional head-end networks and downlinks.

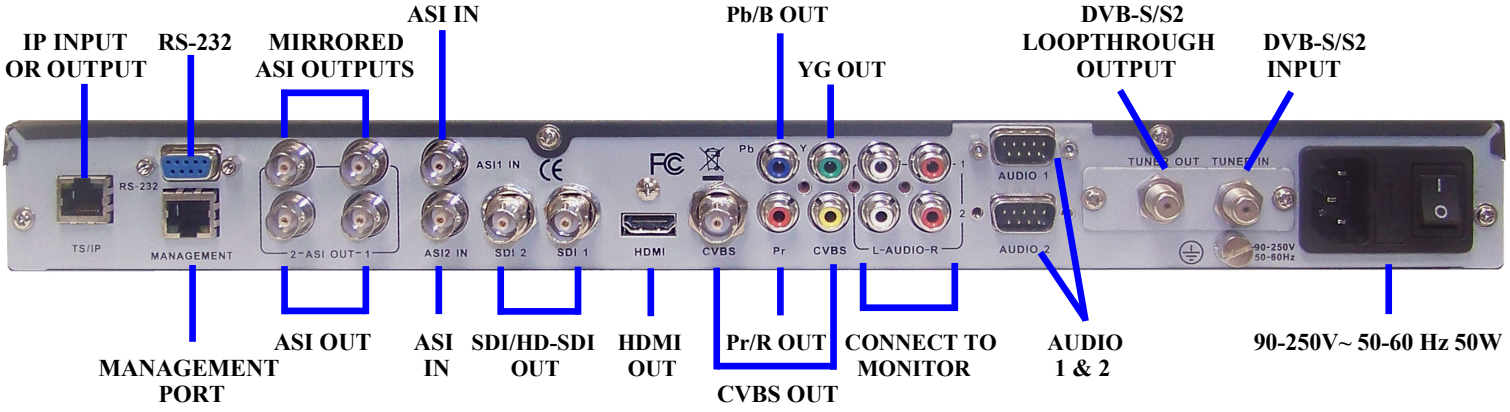
Sample GUI



Input and Output Status

Computer Modules, Inc.
11409 West Bernardo Court
San Diego, CA 92127
Tel: (858) 613-1818 Fax: (858) 613-1815
www.dveo.com

Rear View



Specifications

DVB-S2/S RF Input

Frequency range:	950-2150 MHz
Input Level:	-25～-65dBm
Input Impedance:	75Ω
Connector:	F-type female
Symbol rate:	2～45 MBauds
Roll off factor:	DVB-S QPSK: 0.35 DVB-S2 8PSK: 0.35, 0.25, 0.2
FEC Code Rate:	1/2, 2/3, 3/4, 5/6, 7/8
Punctured rates:	DVB-S QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 8/10 DVB-S2 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10
LNB Level:	0, 13V, 18V adjustable
LNB Band Selection:	0/22 KHz selectable
Satellite Selection Command:	DiSEqC 1.0

DVB-ASI Input

Inputs:	One input, one loopthrough input
Connectors:	Two BNC female, 75 ohm

IP Input

Protocols:	UDP, RTP
Type:	Multicast, Unicast, IGMPv2, ARP
Effective Bit Rates:	10/100 Base-T: 70Mb/s 1000 Base-T: 800Mb/s
Ethernet Connector:	RJ45, 100/1000 M

DVB-ASI Output

Outputs:	One output, one mirrored output
Connectors:	Two BNC female, 75 ohm

Transport Stream Processing

TS Input Management:	Demux and Remux among Tuner / DS3 (optional) / E3 (optional), ASI and TS/IP Inputs
TS Output Management:	Demux and Remux for 2 independent ASI outputs
Service and PID Management:	Remux, filtering and remapping
PSI/SI:	PSI/SI table regeneration, NIT and SDT edition, LCN Edition and Re-generation
Descrambler:	DVB Common Scrambling Algorithm (CSA)
BISS Mode:	BISS-1, BISS-E
Common Interface:	Double PCMCIA slots, compatible with major CA CAMs in the market

DVB-ASI Output

Outputs:	Two outputs
Standard:	DVB-ASI, EN50083-9
Output Bit Rate:	≤ 99Mb/s
TS Processing:	Two Independent TS Re-multiplexed from tuner, TS/IP and 2 ASI inputs
Connectors:	Two BNC female, 75 ohm

HDMI Output

Output:	One HDMI output, HDMI 1.3 interface (up to 1080i)
Video Resolution & Frame Rate:	1080i x 30, 1080i x 29.97, 1080 x 25, 720p x 60, 720p x 59.94, 720p x 50, 480p x 60, 576p x 50, 576i x 25, 480i x 29.97
Audio:	HDMI/AES Embedded – Stereo or compressed data pass through

SDI/HD-SDI Output

Outputs:	Two SD-SDI/HD-SDI outputs – one for backup
SD Standard:	SMPTE 259M, 270 Mb/s (10bit)
HD Standard:	SMPTE 292M, 1.485 Gbit/s (10bit)
Level:	800mV p-p
Connectors:	Two BNC female, 75 ohm
Audio:	Embedded audio

Digital Video Processing

Video Standards:	MPEG-2 (MP@ ML for SD, MP@HL for HD) MPEG 4/H.264 AVC Part 10 (MP@L3 for SD, HP@L4.1 for HD)
SDI Video Resolution:	1080i x 30, 1080i x 29.97, 1080i x 25, 720p x 60 720p x 59.94, 720p x 50, 576i x 25, 480i x 29.97
Video PID Bit Rate:	< 80Mb/s

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Specifications – Continued

Digital Audio Processing

Number of Outputs:	2 audio outputs are decoded or passed through
Audio Sampling Rates:	32, 44.1 and 48 KHz
Audio Bit Rates – MPEG-1 Layer I:	32, 64, 96, 128, 160, 192, 224, 256, 288, 320, 352, 384, 416, and 448 kb/s
Audio Bit Rates – MPEG-1 Layer II:	32, 48, 56, 64, 80, 96, 112, 128, 160, 192, 224, 256, 320, and 384 kb/s
Nominal Output Level:	1V p-p (with standard test stream)
Output Format:	AES/EBU
Load Impedance:	110Ω (with XLR adaptor cables)
Connectors:	2 D-sub 9 male with XLR adaptor cables

Analog Video Output

CVBS Standards:	NTSC, PAL, and SECAM
YPbPr Resolutions:	1080i x 30, 1080i x 29.97, 1080i x 25, 720p x 60, 720p x 59.94, 720p x 50, 480p x 60, 576p x 50, 576i x 25, 480i x 29.97
Nominal Output Level:	1.0 Vp-p±5% (with standard test stream)
Frequency Response:	<±1 dB, at 5.5 MHz for PAL/SECAM, 4.2 MHz for NTSC, and 15 MHz for HD YPbPr
Chroma-Luma Delay:	<±30 ms
Field Time Distortion:	<2%
Line Time Distortion:	<1%
Short Time Distortion:	<2%
Differential Gain:	<3%
Differential Phase:	<2
Signal to Noise Ratio:	>55dB (luminance weighted)
Connectors – YPbPr:	One Component output – RCA female, 75 ohm
Connectors – CVBS:	Two Composite outputs – One BNC female 75 ohm, One RCA female 75Ω

Ships with cables shown below.

Analog Audio Output

Number of Outputs:	Two pairs of stereo audio outputs (2 Audio PIDs or 4 channels are decoded)
Output Impedance:	600 Ω (balanced)
Output Modes:	Stereo, Left, Right, Dual Mono
Cross Talk Among Channels:	>70 dB
THD:	<0.3% @ 400 Hz, 1 KHz test tone
Frequency Response:	±0.5 dB over 20 Hz ~ 18 KHz
Output Level:	0 dBm in 600 Ω (0 dBu), adjustable range ±10 dB
Connectors:	Two D-sub 9 male, with XLR adaptor cable

Ancillary Data Processing

Subtitles:	DVB, EBU
VBI:	Teletext, WSS, VFD, VPS
Closed Captioning:	EIA 608, EIA 708, EIA 608-to-708

Redundancy

Redundancy Port:	Among Tuner, Two ASI inputs and TS/IP
Switching Condition:	TS Sync Loss
Switching Mode:	Main, Spare

Control & Monitoring

Local:	Front panel operation, LCD display
Remote:	SNMP, HTTP (Web Interface), Proprietary HDMS (Headend Device Management System) via RJ45, 10/100 Base-T
Serial Port:	One RS-232 D-sub female, for debug use only
Equipment Upgrade:	Embedded FTP loader and Telnet

Physical and Power

Power Supply:	AC 90V ~ 250V, 50/60 Hz
Power Consumption:	24W (exclusive of LNB power)
Dimensions – HxWxL:	1.7 x 19 x 10 inches (44 x 483 x 255mm)
Weight:	11.9 lbs (5.4 Kg)
Operating Temperature:	32 to 113ºF (0 to 45ºC)
Storage Temperature:	14 to 140 ºF (-10 to 60ºC)
Operating Humidity:	10 ~ 90%, non-condensed

Certifications

EMC:	EN 55024:1998+A1:2001+A2:2003, EN 55022:2006+A1:2007, EN 61000-3-2:2006, EN 61000-3-3:2008
FCC:	Part 15 Class B
LVD:	EN 60950-1:2006 + A11:2009

Ordering Information

T-Ramp IP+DVB-S-S2+ASI/SDI+HDMI+ASI+IP
T-Ramp DS3: Optional DS3 input and output

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