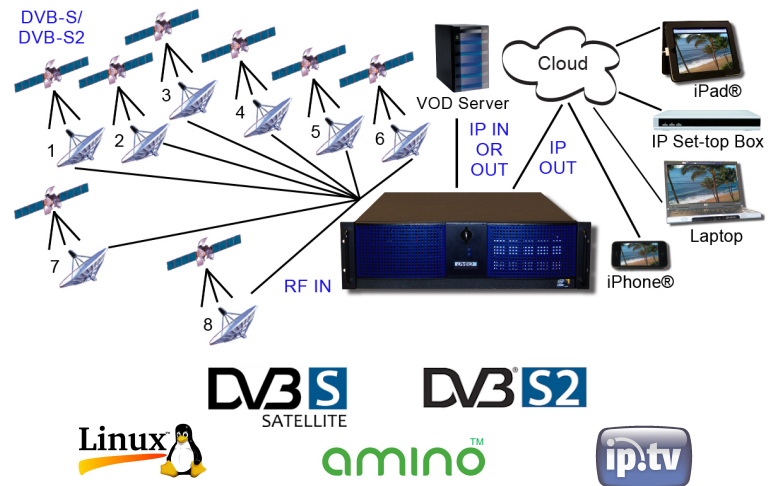


MPEG GEARBOX™ Sat/IP/8ch

Broadcast Quality, Up to 8 Channels, Real Time, Standard or High Definition (up to 1080p), Integrated RF Receiver, and MPEG-2 to H.264 or H.264 to MPEG-2 Transcoder, Scaler, and Streamer. Based on Embedded Linux®, it Boots Quickly from Flash Drive and Remembers all Settings. Easy to Use GUI Allows Full Config of Each Stream and via SNMP can Report its Status to Remote Network Operations. Will Transcode and Process Multiple Streams up to CPU Limitations. Typical Dedicated Transcodes are up to 15 SD Streams, 3 1080i/p Streams, and 4 to 6 720p Streams. Supports RTMP, HTTP, Smooth, Live, and Dynamic Streaming and Works with Wowza®, Adobe® Flash® and RealNetworks® Servers.



Features

- Input or output format can be MPEG-2 or H.264
- Supports HTTP adaptive Smooth, Live, and Dynamic Flash streaming protocol for output to mobile devices
- Capable of near real time FTP output of segmented TS streams with I-Frame boundaries
- Input: DVB-S or DVB-S2 – Simultaneously receives transport streams from up to eight satellite transponders
- IP input (H.264, MPEG-2, or VC-1): UDP, RTP, RTSP, HTTP, HTTP Live, FTP, RTMP (Open Flash), WMV9 with HTTP/ASF
- Output: IP – UDP, RTP, RTSP, HTTP, HTTP Live, HTTP Smooth, HTTP Dynamic, FTP, RTMP (Open Flash), WMV9 with HTTP/ASF
- Supports M3u8 playlist files (standalone and through HTTP live)
- Transcoding bit rates: .1 Kbps to 15 Mbps
- Creates simultaneous High, Medium, and Low bitrate streams
- Resolutions: qHD, H.264up, SQVGA, QCIF, QVGA, SIF, VGA, or any custom size up to 1080p
- Simultaneous demodulation, transcoding, encapsulation, and optional time delay
- Transcodes 4 to 6 720p HD streams, up to 3 1080i or 1080p HD streams, or 15 SD streams from MPEG-2 to H.264 (CPU dependent) or vice-versa
- SNMP support
- Tested to work with Wowza®, Adobe® Flash®, and RealNetworks® Helix® servers
- Tested compatible with major brands of IP devices including Amino™, Roku®, Atlanta DTH, and Apple iPad® and iPhone®
- Tested compatible with major brands of H.264 decoders
- Audio support: AAC, Embedded pass-through, Ogg Vorbis, optional MP3, or optional “SurCode for Dolby Digital” AC-3
- Settings are remembered when power cycled
- Based on embedded Linux® (via flashdisk)

Note: This system is typically deployed in “closed” systems where bandwidth is dedicated and is used for this purpose only. It is not guaranteed to work over the public internet. Performance depends on available bandwidth.

Applications

- IPTV Unicasting, Multicasting, Streaming
- Telco TV
- Hotels, Cruise Lines, Universities, Resorts
- Streaming to designated VideoLAN VLC, Mplayer, or Windows Media Player clients, or to Amino™ or other set-top boxes

Overview

MPEG Gearbox™ Sat/IP/8ch is a real time multichannel integrated RF receiver and designed to receive up to eight simultaneous satellite signals and transform them into streams that are best suited for customers. It is designed to be scalable, easily adaptable, customizable, and field upgradeable to meet the needs of broadband network operators who are now more than comfortable with embedded Linux® based appliances. It relies on an Intel 6 Core CPU as an accelerator. We have also optimized the transcode engine to get reliable operation.

MPEG Gearbox Sat/IP/8ch is an MPEG-2 to H.264, or H.264 to MPEG-2 transcoder or transcaler. It receives multiple satellite services, transcodes them to MPEG-2 or H.264, and outputs them to an IP network. Resulting streams can be viewed with standard IP capable set-top boxes, streaming video, smart phones, or software clients such as VLC or MPlayer. The MPEG Gearbox Sat/IP/8ch receives transport streams, demultiplexes the requested channels and streams these channels using UDP, RTP, RTSP, RTMP, Adaptive, or HTTP via IP networks as either IP multicast or IP unicast streams. The system transcodes individual streams into H.264 format up to a maximum individual bitrate of 15 Mbps, and MPEG-2 streams up to a maximum of 15 Mbps.

A new variant supports optional time delay for up to 40+ streams. Each stream can be received, transcoded, time delayed, and forwarded at the requested time.

Depending on the configuration, it forwards selected programs via IP datacasting; PAT, PMT, video PID, audio PID(s) and PCR information are transmitted. MPEG Gearbox Sat/IP/8ch selects all required PIDs and multiplexes the demultiplexed transport stream packets into IP packets.

The unit provides PID filtering of all unwanted traffic, increasing system performance and the number of channels which can be transmitted per unit.

Programs typically are forwarded (pushed) as transport stream packets via UDP or as RTP (real time protocol) payload (RFC 2250). Pushing can be either unicast or multicast. In addition to push, programs can be forwarded on request (pulled) using RTSP, HTTP, HTTP Live, HTTP Smooth, RTMP, or HTTP Dynamic.



Computer Modules, Inc.

11409 West Bernardo Court

San Diego, CA 92127

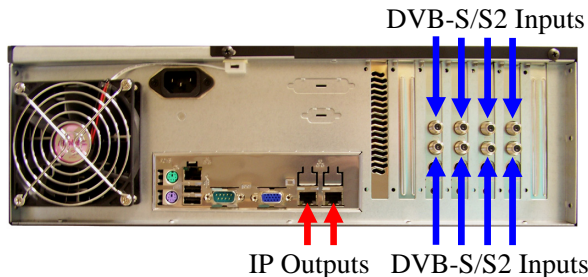
Tel: 858-613-1818 Fax: 858-613-1815

www.dveo.com

IP Output

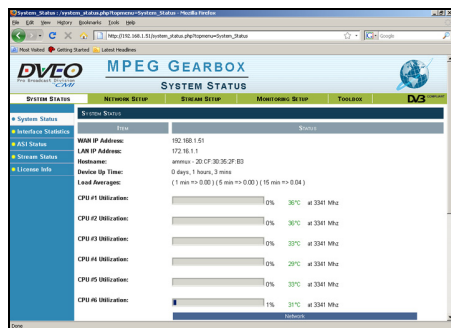
Ethernet: Up to 2 x 1 Gige
Protocols: UDP, RTP, RTSP, HTTP, HTTP Live, HTTP Smooth, HTTP Dynamic, FTP, RTMP (Open Flash), Windows® Media Video 9 with HTTP/ASF
Type: IP-multicast, IP-unicast, IGMP

Input/Outputs

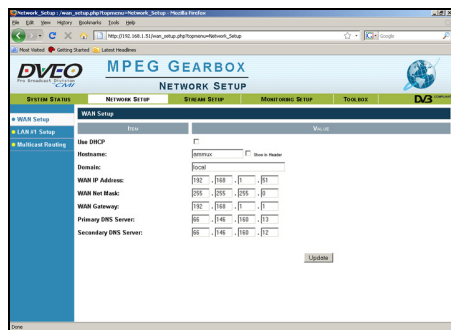


Transcodes up to 15 SD streams, four to six 720p streams, or three 1080i or 1080p HD streams from MPEG-2 to H.264 (CPU dependent) or vice-versa.

GUI's



Status Screen



Network Setup

Ordering Information

MPEG Gearbox Sat/IP/8ch
 MPEG Gearbox Sat/IP/8ch – with real time store and forward (time delay) option
 MPEG Gearbox Sat/IP/8ch – with encrypted streams option
 Other versions available: MF (Multifunction), IP/ASI, IP/IP, ASI/IP, ASI/ASI, SMPTE310M/IP, QAM, DVB-T/IP

Specifications

Supported Resolutions – Input and Output

| | | | |
|-------------|-----------|-----------|----------------|
| 1920 x 1080 | 720 x 480 | 480 x 480 | qHD H.264up |
| 1280 x 720 | 704 x 480 | 480 x 320 | |
| 720 x 576 | 640 x 480 | 320 x 240 | |

Also supports any custom resolution not listed here.
 Note: Lower resolution results in higher transcodes.
 Note: Supports closed captions.

DVB-S/S2 Input

| | |
|-------------------------|--|
| Modulation: | QPSK (DVB-S), 8PSK (DVB-S2), 16APSK (DVB-S2) |
| Inputs: | 8 Inputs – L-Band, K-Band, Ku Band, etc. |
| Symbol rate: | 1 to 45 MS/s |
| Frequency range: | 950 to 2150 MHz, 70 to 1002 MHz |
| LNB control: | 22 kHz, power H/V |
| Spectral inversion: | ON/OFF/AUTO |
| Maximum raw throughput: | 200 mbps |

Note: Performance depends on RF and TS quality. We do not work with all streams.

IP Input

| | |
|---------------------------------|---|
| IP Input protocols, “wrappers”: | UDP, RTP, RTSP, HTTP, HTTP Live (HLS), FTP, RTMP (Open Flash), Windows® Media Video 9 with HTTP/ASF |
|---------------------------------|---|

IP Output

| | |
|--------------------|--|
| Audio Output: | AAC, Embedded pass-through, Ogg Vorbis, optional MP3, or optional “SurCode for Dolby Digital” AC-3 |
| Output “wrappers”: | UDP, RTP, RTSP, HTTP, HTTP Live (HLS), HTTP Smooth, HTTP Dynamic, FTP, RTMP (Open Flash), Windows® Media Video 9 with HTTP/ASF |
| Type: | IP-multicast, IP-unicast, IGMP |
| Bit Rates: | Multiple H.264 and/or MPEG-2 video streams at different bit rates (.1 to 15 mbps) |

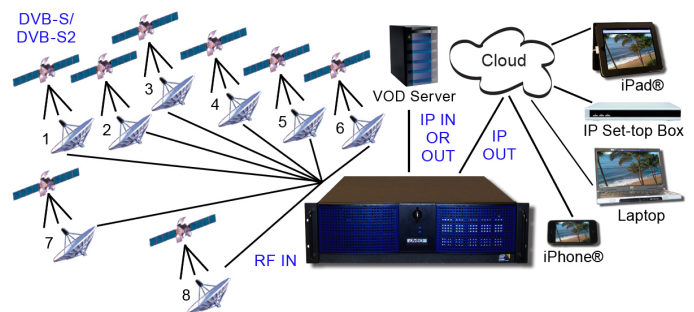
Administration

| | |
|---------|------------------------------|
| Access: | Web interface, ssh interface |
| SNMP: | Monitoring and alerts |

Physical & Power

| | |
|---------------|------------------------------|
| Size: | 19” rack mounted, 3 RU high |
| Voltage: | 85-265 VAC/50-60Hz, 50 watts |
| Temperature: | 0°C to 50°C |
| Humidity: | 5% to 95% non-condensing |
| Conformities: | UL, CSA, CE, RoHS |
| Weight: | 30 lbs. (13.6 kg) |

Block Diagram



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