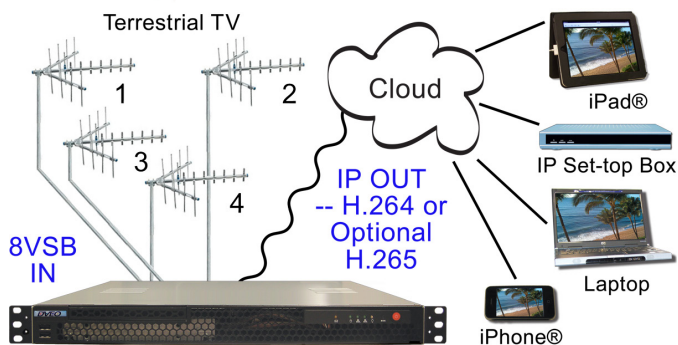


# MultiStreamer 8VSB 1-4 Tuners/IP: Professional



- Real Time, Professional Grade, 1 RU, Quick Starting, Standards Compliant, Embedded Linux® Based, Remotely Manageable, 8VSB to IP Gateway and Live Multi-Streamer with Concurrent Multi Stream, Multi Resolution, Multi-protocol IP Output.
- Transcodes Incoming MPEG-2 Digital Video and Audio into H.264 or Optional H.265 Compressed IP Transport Streams with Various “Wrappers”.
- Audio Support for AAC, MPEG-1 Layer II, Optional MP3, and/or Optional “SurCode for Dolby

Digital” AC-3. Encodes at .1 to 30 Mbps. Ideal RF Gateway for Streaming Video to Remote Sites,- Content Delivery Networks (CDNs), or IPTV Compatible Appliances or Players.

- Supports Stream Scheduling and Archiving Option.
- Supports 50 Simultaneous HLS Users. Ideal Remote Monitoring Tool. With Optional Atlas™ Add-on, Supports 1,000 RTMP, DASH, and/or HLS Users Natively.

## Overview

The MultiStreamer™ is a family member of our flagship cost effective origin encoders. This family has been in production for seven years and we have shipped over 3,000 units. It is designed as a general purpose workhorse, able to stream several simultaneous streams at different resolutions with any streaming protocols.

The MultiStreamer 8VSB 1-4 Tuners/IP: Professional is a highly affordable Intel® Xeon® based multi channel RF to IP gateway and H.264 encoder and transcoder designed for capturing 8VSB content and streaming this content to iPads, iPhones, content delivery networks, and remote video capture devices.

The system is designed to be an affordable platform to ingest video from terrestrial broadcast stations, transcode the MPEG-2 to the H.264 standard, and provide for choices for resolutions, protocols, wrappers, and containers. This is easy

to do since we are using Linux® and these outputs are well supported by the Linux® environment.

Inexpensive high volume hardware platforms combined with highly enhanced open source Linux® based software offer great value to all willing to embrace the future. We offer high performance streaming solutions that are based on open source libraries. We enhance the libraries by rewriting critical sections to obtain outstanding reliability and throughput.

This unit is designed to be affordable, scalable, and extendable. Modifications to video formats are easily created.



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## Inputs and Outputs



**LAN**      **WAN**  
(Either can be used for  
IP Input or Output)

**4 8VSB tuners -  
4 per port**

## Features

- Thousands in use worldwide
- Inputs: Four 8VSB inputs (terrestrial digital), one GigE IP input
- Supports 10 HD transcodes- this could be 4ed HD, 4ea 720p, and 8ea SD
- Certified by Akamai®
- Supports HLS (adaptive) for output to mobile devices and MPEG-DASH
- Supports logo insertion, text overlay, and SCTE 35 compliant cue tone insertion (“ad markers”) on outputs
- Web GUI is manageable from anywhere – includes some scheduling
- Able to up-convert incoming SD streams to HD, and scale down
- Tested with leading CDNs (Verizon®, Akamai®, Tulix™, Ustream®, etc.)
- Supports H.264 High Profile @ Level 4.0 (HP@L4)
- Supports 1080i, 1080p, 720p, 576i, 480i, 480p, CIF, QCIF, qHD, H.264up and custom resolutions
- Supports 50 HLS users natively. Optional built-in server supports 1,000+ simultaneous HLS, DASH, and/or RTMP users.
- Audio Output: AAC, MPEG-1 Layer II, optional MP3, and/or optional “SurCode for Dolby Digital” AC-3
- Support for Variable Bit Rate (VBR) encoding maximizes adaptive streaming video quality and bandwidth efficiency
- Tested to work with Atlas™, Wowza®, and Adobe® Flash® media servers
- Tested compatible with major brands of IP devices including Amino™, Roku®, Android™, and Apple iPad® and iPhone®
- Tested compatible with major brands of professional H.265, H.264, and MPEG-2 decoders and video servers
- SOAP support for remote management and monitoring
- Relies on Intel® Xeon® 20 core processor
- Optional local storage



# Specifications

## Administration

Access:	Web interface, SSH (Secure command line interface)
Scheduling:	On, Off support for time-slots
SDAP:	Remote Control

## CPU and Operating System

CPU:	Intel® Xeon® processor
OS:	DVEO embedded Linux® on SSD
Hard Drive:	1 TB (Option)

## Physical & Power

Size:	19 x 14.96 x 1.7 inches (483 x 380 x 43.4 mm)
Voltage:	100-240V, 4-2A, 60-50 Hz, 220 watts
Operating Temperature:	10°C to 35°C
Non-Operating Humidity:	20% to 90% non-condensing
Weight:	15 lbs. (6.8 kg)
Conformities:	UL, BSMI, CSA, FCC, CE, RoHS

## Supported Resolutions

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

Also supports any custom resolution not listed here. Note: Supports closed captions.  
Note: Supports PAL TO NTSC conversion but not NTSC to PAL.  
H.265 output resolutions supported are 1080, 720, 576, 480.  
H.265 576/480 resolutions only have 4:3 aspect ratio.

## ATSC Input

Modulation:	4 8VSB inputs – terrestrial digital (one RF in)
Inputs:	RF from antenna
Frequency range:	54 to 860 MHz
Maximum raw throughput:	200 mbps (per tuner)

## Ad Insertion

SCTE Ad Marker insertion via RS232, USB, IP, Contact closures

## Security

Up to user since this is Linux®

## IP Input and Output

### IP Input

IP Input protocols, “wrappers”:

UDP, RTP, RTSP, HTTP, HTTP Live (HLS), RTMP (pushed from Flash server). Supports NewTek™ NDI® input.

### IP Output

Outputs:

10 1080i/p streams, or any mix up to 10 IT streams

Audio Output:

AAC, MPEG-1 Layer II, optional MP3, MPEG-1 Layer II, and/or optional “SurCode for Dolby Digital” AC-3

Output “Wrappers”:

UDP, RTP, HTTP, HTTP Live (HLS), RTMP (Open Flash)

Type:

IP-multicast, IP-unicast with “wrappers”

Bit Rates:

Multiple H.264 video streams at different bit rates (.1 to 30 mbps), resolutions, and protocols, wrappers, and containers. Optional H.265: H.265 average bit rate supported. No constant or variable.

Quality:

8 bit encoding with 4:2:0 color sampling

Video:

NTSC or PAL

Encoding Latency:

.5 seconds (fixed)

## Options

- Optional transcoding to H.265
- Archiving option: One terabyte of local storage (1 TB)
- Optional built-in “Mini Atlas” server supports 1,000+ simultaneous HLS, DASH, and/or RTMP users

• Optional DOZER™ Automated UDP Packet Recovery protocol, enabling error-free video delivery over UDP. DOZER ensures smooth MPEG-2, H.264, and optional H.265 delivery through DVEO patented algorithms for automated packet recovery and re-ordering of out-of-sequence packets.

## Ordering Information

- MultiStreamer 8VSB 1-4 Tuners/IP: Professional in 1 RU system
- Archiving Option: One terabyte of local storage (1 TB)



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