Features

- Supports both HD and SD H.264/MPEG-4 AVC encoding with “virtual” stream replication
- Inputs: Up to two 8VSB (terrestrial digital) or clear QAM inputs, one GigE IP input
- Supports NewTek™ NDI® input
- Outputs: Multiple simultaneous IP streams through GigE port (RJ45)
- IP output protocols: UDP, RTP, HTTP, HTTP Live (HLS), RTMP (Open Flash)
- 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 upconvert incoming SD streams to HD, and scale down
- Tested with leading CDNs (Verizon®, Akamai®, Tulix™, Ustream®, etc.)
- Supports Octoshape™ and Verizon® upLynk natively
- Supports H.264 High Profile @ Level 4.0 (HP@L4)
- Supports 1080i, 1080p, 720p, 480i, 480p, CIF, QCIF, qHD, H.264up and many others, and custom resolutions
- Supports 50 HLS users natively. Optional built-in server supports 1,000+ simultaneous HLS users. With Optional Atlas™ Add-on, supports 1,000 RTMP, DASH, and/or HLS Users Natively.
- Audio Output: AAC, MPEG-1 Layer II, optional MP3, MPEG-1 Layer II, 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
- Teste d 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
- SNMP, REST, SOAP support for remote management and monitoring
- Low power consumption

Overview

Inexpensive high volume hardware platforms combined with highly enhanced open source Linux® based software offer great value to all willing to embrace the future. Furthermore, Intel’s architecture is highly tuned to encoding and transcoding tasks. 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.

The LynnBox 8VSB/IP is a highly affordable dual core 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 LynnBox 8VSB/IP is designed to be an affordable platform to ingest video from terrestrial broadcast stations, transcode the MPEG-2 to the H.264 standard (or optional H.265), 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.

This unit is designed to be affordable, scalable, and extendable. Modifications to video formats are easily created. Remote management and multi level security is built in.

Applications

- Backhaul/Monitoring for Broadcasters
Specifications

Supported Resolutions – Input and Output

<table>
<thead>
<tr>
<th>Resolution</th>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920 x 1080</td>
<td>720 x 480</td>
<td>480 x 480</td>
</tr>
<tr>
<td>1280 x 720</td>
<td>704 x 480</td>
<td>480 x 320</td>
</tr>
<tr>
<td>720 x 576</td>
<td>640 x 480</td>
<td>320 x 240</td>
</tr>
</tbody>
</table>

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 1080i, 720p, 576p, 480. H.265 576/480 resolutions only have 4:3 aspect ratio.

ATSC Input

- Modulation: Up to two 8VSB terrestrial digital or clear QAM inputs
- Inputs: RF from antenna
- Frequency range: 54 to 860 MHz
- Maximum raw throughput: 200 mbps

IP Input


IP Output

- Outputs: One 1080i/p stream at 6 Mbps; or one 720p/60 HD stream at 4 Mbps; or 3 480 streams at 2 Mbps, or one HD and one SD stream at 6 Mbps
- Audio: 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 15 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: About 1.2 seconds (fixed)

Administration

- Access: Web interface, SSH (Secure command line interface)
- SNMP: Monitoring and alerts
- Scheduling: On, Off support for timeslots

CPU and Operating System

- CPU: Intel® Core i3
- OS: DVEO embedded Linux® on SSD
- Hard Drive: 8 GB RAM
- Memory: 120 GB SSD Intel

Physical & Power

- Size (W x D x H): 7.5 x 6.5 x 1.7 inches (190 x 165 x 43 mm)
- Weight: 3 lbs. (1.36 kg)
- Shipping Weight: 5 lbs. (2.27 kg)
- Power: External 90W fanless power adapter
- Input: 100–240V AC, 50/60 Hz; Output: 19V DC, 4.74A
- Power Consumption: Maximum 90 watts
- Operating Temperature: 0°C to 50°C
- Processor Cooling: Heat pipe processor cooling with two 60 mm fans on the upper side of the chassis
- Relative Humidity: 10% to 90% non-condensing
- Conformities: UL, BSMI, FCC, CE, RoHS, C-Tick, CB, ETL

Security

- Ports security scanned to MIL requirements prior to shipment

Ad Insertion

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

CDNs Tested With:

1. Akamai*
2. Limelight
3. Tata
4. Octoshape
5. CDNetworks
6. Internap
7. Highwinds
8. Verizon*
9. Ustream*
10. More to come!

Ordering Information

LynnBox 8VSB/IP: Ships with only one tuner
Tuner-L: Additional Tuner

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