

MultiStreamer™ DIG/IP: Professional



Features

- Thousands in use worldwide
- Inputs: One SDI or HD-SDI input, and GigE IP port
- Able to send output to multiple CDN's simultaneously
- Optional single HDMI input instead of SDI/HD-SDI input
- Optional stream archiving
- Outputs: Multiple simultaneous IP streams through GigE port (RJ45), SDI or HD-SDI video loop through
- 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 H.264 High Profile @ Level 4.0 (HP@L4)
- Supports 1080i, 1080p, 720p, 576i, 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, 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
- SNMP, REST, SOAP support for remote management and monitoring
- Relies on Intel® Xeon® processor

Real time, highly reliable, 1 RU, quick starting, standards compliant, standard Linux® based, remotely manageable, single channel SD or HD (SDI), H.264/AVC or optional H.265 TS Encoder. A professional encoder manageable from anywhere via web GUI. Able to stream simultaneously to multiple CDN's.

Supports most industry standard "protocols" like UDP or RTP with unicast or multicast, and "Wrappers" such as HLS, RTMP, etc. Audio output is in the formats of either AAC or MPEG-1 Layer II. Supports closed captioning and teletext with overlay.

Encodes streams with multiple resolutions at .1 to 30 Mbps at popular GOP sizes, frame rates, refresh rates, or aspect ratios. Simultaneously creates high, medium, and low bitrate ABR streams to hand off to your content delivery networks (CDNs) with required authentication, for "One to Many" distribution. Software is scanned for vulnerabilities and open ports. Supports 50 simultaneous HLS users. With optional Atlas™ add-on, supports 1,000 RTMP, DASH, and/or HLS users natively.

Streaming professionals need quality, ease of use, and support.

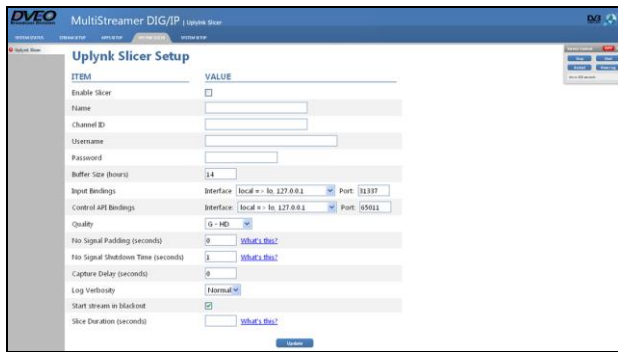
Applications

- 24x7 Unattended Streaming to CDN's and Media Servers
- Streaming video to CDNs and web sites like Ustream®, Akamai®, Verizon®, etc.
- Backhaul/Monitoring for Broadcasters
- Military, Corporate Video, Religious Services, Special Events
- Origin Encoder for Grooming Servers
- Event streaming via ISPs or CDNs

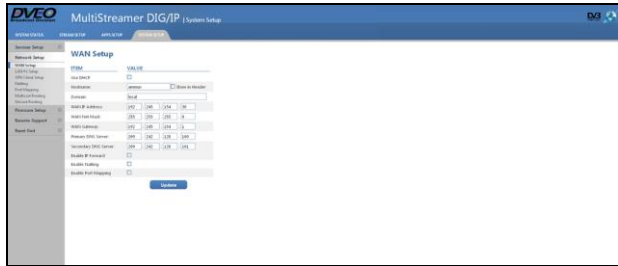


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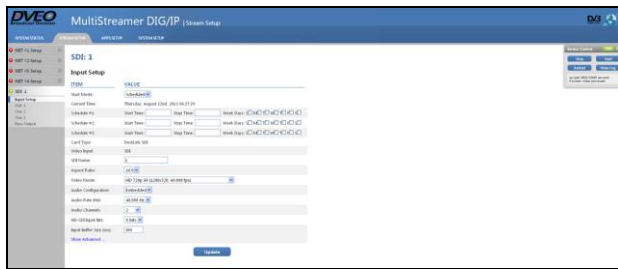
Sample of GUIs



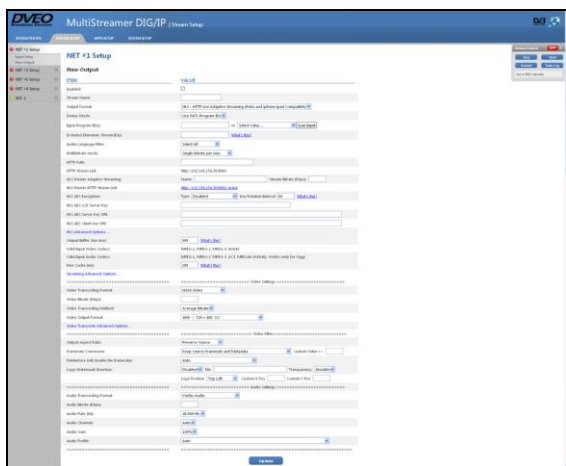
Verizon® upLynk Setup



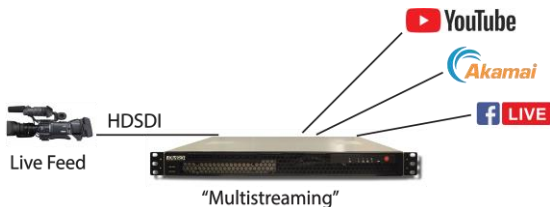
Network Setup



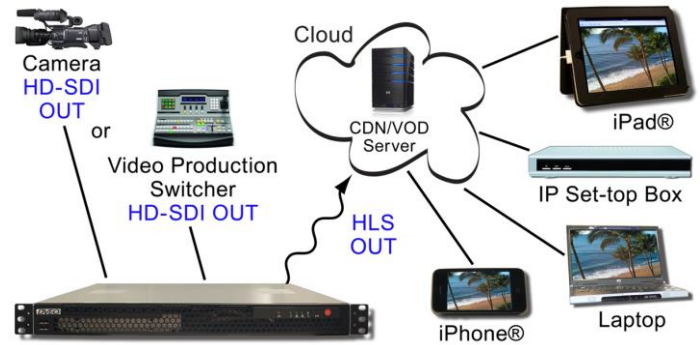
Scheduled SDI Input Setup



IP Output Setup



Application Example



Overview

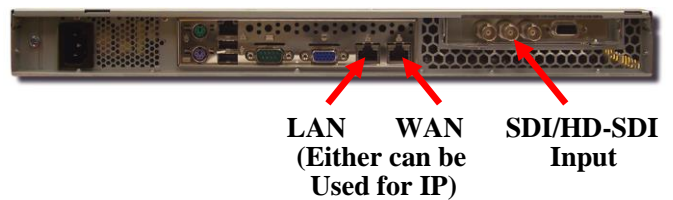
The MultiStreamer™ is a family member of our flagship cost effective origin encoders. This family has been in production for seven years and we have shipped over 3,000 units. It is designed as a general purpose workhorse, able to stream several simultaneous streams at different resolutions with any streaming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

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.

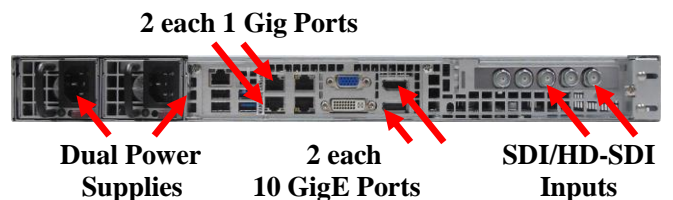
This unit is designed to be affordable, scalable, and extendable. Modifications to video formats are easily created. Remote management and multi level security is built in.

Inputs and Outputs

Standard Version



Telco Version



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Ports Utilized

| Protocol | TCP Ports | UDP Ports |
|-------------------|-------------------------------------|------------------------|
| HTTP | 80, 8000, 8001, 8080, 1-65535 (out) | |
| HTTPS | 443 | |
| RTSP (Input only) | 554, 7070 | 6970-7170, 5005 |
| RTMP | | 1935 |
| RTP | | 6970-6999, 16384-32767 |

Supported Resolutions

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: Does not support 608 closed captioning for SDI input. Only 708 is supported.

Note: Does not support closed captioning for HDMI inputs.

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.

CDNs Tested With:

- | | | |
|--------------|---------------|-------------------|
| 1. Akamai* | 5. CDNetworks | 9. Ustream* |
| 2. Limelight | 6. Internap | 10. Tulix* |
| 3. Tata | 7. Highwinds | 11. More to come! |
| 4. Fastly | 8. Verizon* | |

*Certified

Options

- Optional transcoding to H.265
- HDMI input: Available as an option instead of SDI/HD-SDI input (HDMI)
- 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.
- TELCO: Redundant power supply and ports

Ordering Information

MultiStreamer DIG/IP: Professional
 MultiStreamer HDMI/IP: Professional – HDMI In
 MultiStreamer DIG/IP: TELCO – Dual power supply,
 4 Gig/E ports, dual inputs for redundancy

Specifications

Inputs

| | |
|---------------------|---|
| Video – SDI/HD-SDI: | One SDI or HD-SDI input Optional single HDMI input instead of SDI/HD-SDI |
| Video – IP: | H.264, MPEG-2, VC-1, or optional H.265. |
| IP Input protocols: | UDP, RTP, RTSP, HTTP, HTTP Live (HLS), RTMP (pushed from Flash server) |
| Audio: | SDI Embedded |

SDI or HD-SDI Output

| | |
|---------------|---|
| Video Output: | SDI or HD-SDI loop through for input monitoring |
|---------------|---|

IP Output

| | |
|--------------------|---|
| Outputs: | One 1080i/p stream at 6 Mbps; or one 720p60 HD stream at 4 Mbps; or 3 480 streams at 2 Mbps, or one HD and one SD stream at 6 Mbps |
| Audio Output: | AAC, MPEG-1 Layer II, optional MP3, 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: | HD-SDI or SDI input: 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® Xeon® processor |
| OS: | DVEO embedded Linux® on FLASH USB (inside) |
| Hard Drive: | 1 TB (Option) |

Physical & Power

| | |
|-------------------------|---|
| Size – 1 RU high: | 19 x 14.96 x 1.7 inches (W x D x H) 483 x 380 x 43.4 mm (W x D x H) |
| Voltage: | 100-240V, 4-2A, 60-50 Hz, 220 watts |
| Operating Temp.: | 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  |

Security

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|--|
| Ports security scanned to MIL requirements prior to shipment |
|--|

Ad Insertion

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



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