MIGHTY MUX™ IP+ASI/IP + ASI

Transport stream playout manager with IP or ASI out, built-in storage, live IP inputs, and built-in standards compliant re-multiplexing. Digital video multiplexer and IP gateway that modifies services from local HD, ASI, or Gigabit Ethernet into a new transport stream. Supports both SI and PSIP metadata. You can select services from any input to customize each output with flexibility to build your unique on air service lineup. Designed for Telco Industry.

Features

- Scalable, high bitrate, multi-input, multi-output TS multiplexer
  - Demultiplexer/Remultiplexer with SI and PSIP tables
  - Program filter and mapping ("cherry picker")
  - PID filter and mapping
  - PID remapping
  - PSI (PAT/PMT) signaling
  - PCR dejittering and restamping
  - PCR reclocking
  - Service ID remapping
  - ServiceName renaming
  - Scheduled content playback from hard drive
  - Time stamping
  - TS CBR and VBR
  - Optional QAM, DVB-T, ISDB-T signaling including user definable channel labeling descriptors
  - Optional PSI, ATSC, DVB-T, ISDB-T signal merging
- Inputs: ASI or IP (UDP/RTP) or TS files
- Outputs: ASI, IP (UDP/RTP), and optional RF
- Transport Stream (TS) grooming and remultiplexing of multiple streams received over ASI or Gigabit Ethernet at up to 500 mbps aggregate bit rate
- Create a new ASI compatible QAM stream to feed modulators with ASI inputs
- DVB to PSIP table conversion
- Configurable Forward Error Correction (FEC) support for SMPTE 2022-1/2
- Network jitter correction
- Full motion video front panel displays any input for preview purposes
- Rackmountable 1 RU design
- Made in USA

Applications

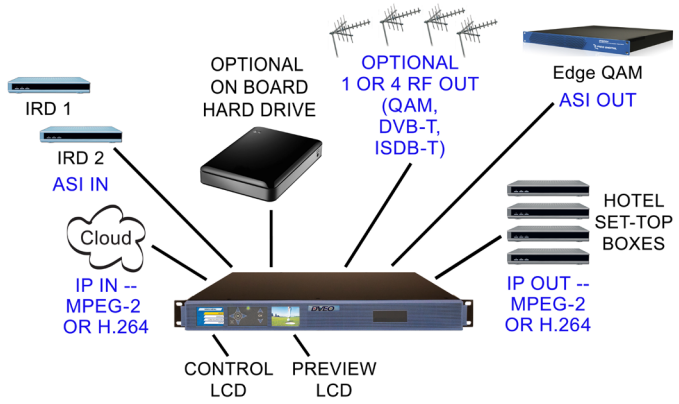
- Distribution: Multiplex services from many sources and local programming with service processing and preparation for transmission over satellite uplinks, terrestrial broadcast, cable and IPTV
- Regionalization: Regionalize multiplexes at head-ends and transmitter sites with service add/drop
- Repackage channels via table processing

Overview

The Mighty MUX™ IP+ASI/IP is the newest member of DVEO's cable industry oriented product line. This sophisticated live and stored media server and multiplexer is designed to ingest 50+ live compressed video streams and create modified "packages" with varying numbers of streams for distribution over IP or QAM.

In addition to creating services, the Mighty MUX also includes a schedulable player that will mix locally stored content into the muxed packages. During certain times live feeds are preferred, but at other times stored content will be preferred. This device allows you to repackage a mix of live and locally stored content into multiple offerings according to the subscriber's budget

Block Diagram – Hotel Application



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Key Benefits

- **Optimize Transport Bandwidth:** Get the most out of your transport by creating up to 8 independent Multiple Program Transport Streams (MPTS) from all of the inputs. Support bandwidth constraints by removing unwanted streams like secondary audio, or even drop complete programs.
- **Reliable IP Transmission:** Insert Forward Error Correction (FEC) to ensure reliable delivery. Network jitter and errors in the transmission path are corrected in the receiving system to recreate the original transport stream.

Capabilities

- **Analytics**
  - Presented via Web UI
  - Dynamic input/output stream stats
  - Signaling verification
  - TS Error checking
- **Video streaming from file playlists**
  - Multichannel video streamer
  - Playlist and scheduler driven
  - >30 GBytes on board storage
  - Web-based GUI with file upload and progress bar
- **Transport Streams**
  - Maximum bitrate input/output: ~500Mb/s – Constrained by input device, output device, and CPU usage
  - Maximum number of MPTS outputs: Not limited – Constrained by CPU usage or output devices
  - Maximum video elementary streams per program: Not limited
  - Maximum number of audio elementary streams per program: Not limited
  - Maximum number of data streams per program: Not limited
  - UDP unicast and multicast UDP input/output TS support
  - Also supports UDP/RTP for all inputs (auto detect) and outputs
  - SMPTE 2022 FEC Pro-MPEG
  - UDP/RTP input support (converted to TS)
  - Transport packet size: 188/204 bytes
- **Network**
  - 4 independently configured GigE ports
  - UDP/RTP input auto detect
  - IPTV simulcast output

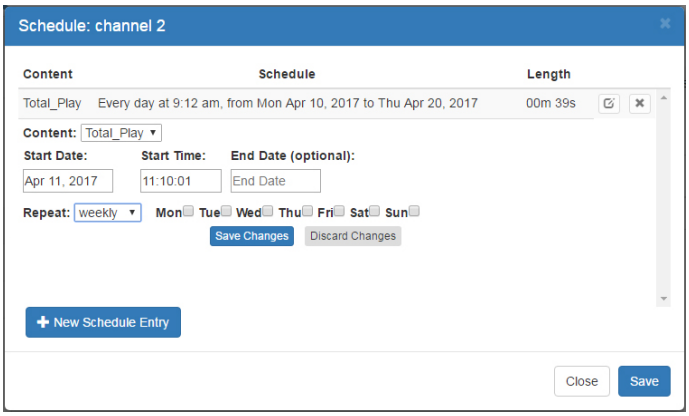
Rear Panel

Example Configuration - Device Can Be Customized

Options

- Additional ASI input/option combinations available

Scheduler GUI



Scheduler Screen

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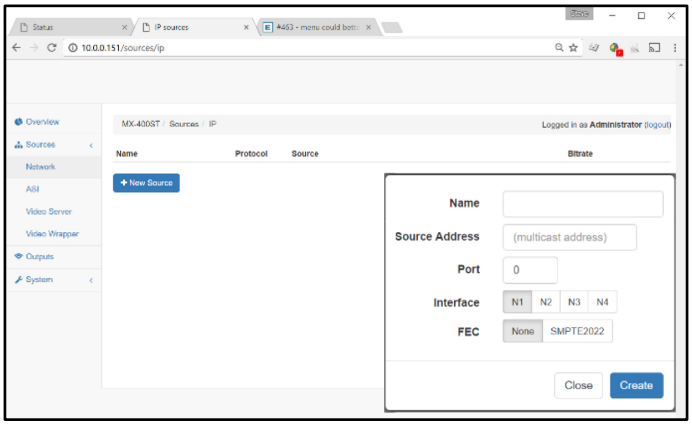
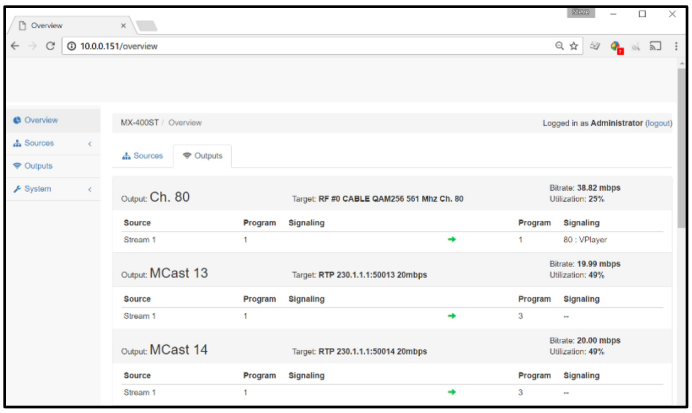
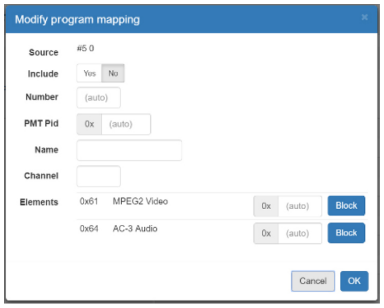
Sample of GUIs



Configure Inputs



Multiplexer Outputs



Modify Program Mapping

Options

Muxing MUX IP+ASI/IP+ASI

- Single IP In and Out
- Single ASI In/IP Out
- Single ASI Out
- Single ASI In/Single ASI Out
- Dual ASI In/ASI Out
- mSATA up to 1 TB, 32 GB standard

Specifications

ASI Inputs

Up to four ASI female inputs, 75Ω (limited by maximum aggregate bitrate)
213 Mbps per input
Receive MPTS and SPTS with service filtering

ASI Outputs

Up to four ASI outputs. Option for 2 ASI outputs (limited by maximum aggregate bitrate).
Output up to 213 Mbps constant bit rate
Programmable unique MPTS or SPTS
PCR regeneration
Supports both SI and PSIP tables

Gigabit Ethernet

Four independent Gigabit Ethernet (GigE) ports, RJ45
10/100/1000 Base-T auto-sensing
Half and full duplex

Interoperability

Video Formats:	Transport stream MPEG-2 SD/HD and MPEG-4 (AVC) SD/HD
Audio Formats:	MPEG-1 Layer II and Dolby AC-3 service type control

Multiplexing

Service and component PID tracking, filtering and remapping (route any input to any output port)
Input and output unique SPTS and MPTS
Each output (ASI, GigE) is programmed uniquely
PCR re-stamping
PAT/PMT computation band insertion
Synchronization of data and video
Configurable packet format of 188 or 204 bytes per packet (FEC)

Payload Processing

Forward Error Correction (FEC):	Compliant with SMPTE 2022-1/2
Maximum Aggregate Data Rate:	500 Mbps with unlimited services
Multicast:	IGMP v1, IGMP v2, IP/UDP and IP/UDP/RTP multicast or unicast

PSIP Processing

Pass-through and dynamic regeneration of certain PSIP tables noted below	
ATSC/PSIP Tables:	MGT, VCT, STT, RTT, EIT, ETT
ATSC/PSIP Tables:	NIT, SDT, TDT, EIT

Table Processing

Measurements:	Advanced component/service/TS analysis and bit rate measurements
MPEG/PSI Tables:	PAT, PMT, CAT

Administration

Access:	Web UI, password protected, configuration from anywhere USB Configuration for bulk processing
Front Panel Configuration:	Management LAN network connection
Front Panel Management:	Graphical configuration and status; Video of all mux inputs
Front Panel Video:	Front panel controls with video monitor, Web interface QVGA, H.264, and MPEG-2 decode and scaling

Physical & Power

Size – 1 RU (WxDxH):	17.41 x 12.92 x 1.72 inches (442.2 x 328.2 x 44 mm)
Input Voltage:	100- 240 VAC, 50-60 Hz
Power:	Less than 80 watts – Configuration dependent
Weight:	Less than 6 lbs. (2.72 kg)
Shipping Weight:	Configuration dependent
Operating Temperature:	0° - 45°C (32°-113°F)
Non-operating Humidity:	10 - 95% RH, non-condensing
Cooling:	Fan cooled. Positive pressure, ~20 cfm air flow front to back
Rack mounting:	Mounting ears provided
Cabling:	Power cord included
Conformities:	FCC class A/CE (TBD)

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