DenzCoder SDI/RTC

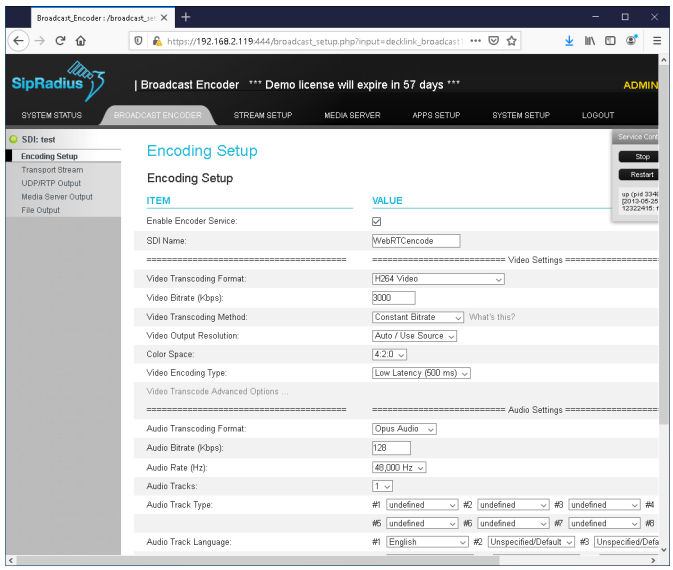
3G-SDI to WebRTC Server Appliance

Fanless, Sturdy mini-PC For SDI Acquisition and WebRTC Server

When your application depends on remotely viewing SDI over a web connection with absolutely minimal (less than 1000 ms) latency, SDI to WebRTC is the only option. The DenzCoder SDI/RTC will acquire your 3G SDI input, encode to h.246/Opus (the WebRTC video/audio standards) at 3Gbps constant bitrate plus audio (or a lesser rate if you choose), pump it to our media server, and on the other side, standard browsers will open an AES encrypted, bi-directional data channel and play the video.

The unique application features very compact hadware, yet it is powerful enough that it may surprise you. The 3G-SDI to WebRTC server appliance is just 7.3 by 5 by 2.6 inches, yet it packs a brand name M.2 PCI Express gen 3 card for SDI capture, an Intel i5 processor, plus wired and wireless Ethernet (and optionally, 4G cellular). It will serve as many simultaneous WebRTC viewers as your bandwidth will support. (Note that you even can bond the two GBE Ethernet adapters, or serve both on the simultaneously with two separate IP addresses).

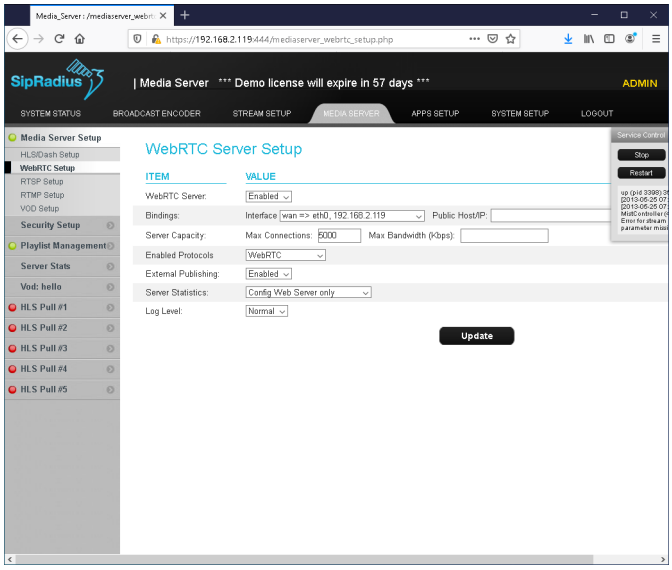
The fanless, noiseless mini PC runs our Coral OS, a customized flavor of linux designed for real-time processing and an appliance-like operation. The capture hardware will support up to 1080P/60FPS/3Gbps. The screen below shows the encoding setup:



In that screen, we see low latency (ca. 500 ms, not including transit time to the end user) h.264 encoding of a 3Gbps video stream plus a 128bit opus encoded audio stream.

The Coral OS provides a wide range of control over encoder outputs' characteristics, subject, of course, to processor/heat limitations. Note that the unit exposes the h.264/opus output as a multicast stream internally. If, for example, you need to additionally encode audio to other codecs for non-WebRTC uses, you can therefore process it as a separate stream without adding latency to your WebRTC. This means you can do anything you need with it, such as simultaneously outputting multiple streams of different formats, such as rtmp, too. As a device targetted at remote locations, it provides a wealth of new options that professionals can

In the screen below we see part of the media server setup:



As a full featured media server, the 3G-SDI to WebRTC Server provides control over which ports to serve the output, limit the bandwidth, monitoring and statistics and so forth. There are options so that should the appliance be in a NATted private network, you can set up port

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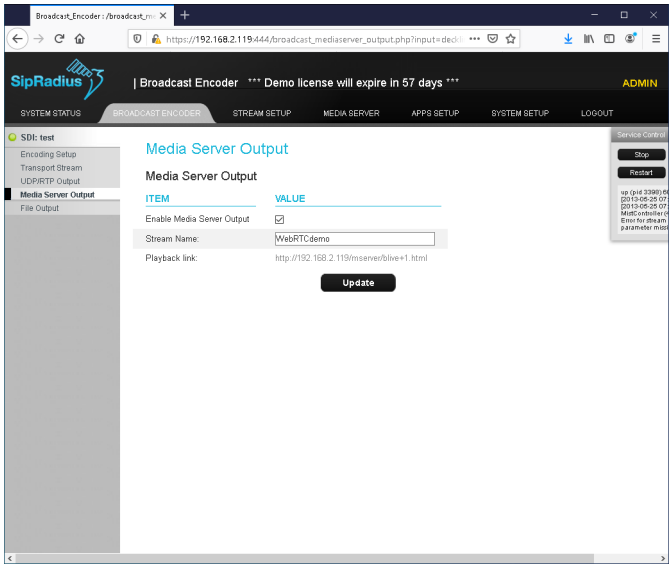
forwarding on the gateway, and the media server will route the WebRTC data channel between server and client(s) as needed.

The screen below shows the on/off stream control and an informational link to the media server output of the SDI capture. You can use the device solely as a normal HLS/fMP4 media server without outputting WebRTC if so desired. As a full fledged media server, it supports everything our Denz-Edge media servers support including VOD, optional mounting of network storage and other server formats, subject to hardware limitations, of course.



In common with our other Denz Minis, the 3G-SDI to WebRTC Server Appliance is geared for acquiring, processing and moving your streams from remote to whereever they need to be, and in this case, with a speed no other vendor can match.

SDI/HDMI Capture

- SDI Video Inputs: 2 x 12Gb/s SD/HD/2K/4K. Supports single/dual link 4:2:2/4:4:4. 2D/3D switchable. Multiply by two for 2u form factor.
- HDMI Video Inputs: HDMI type A connector with support for 2160p60. Multiply by two for 2u form factor.
- SDI Audio Inputs: 16 Channels embedded in SD/HD/2K/4K.
- HDMI Audio Inputs: 8 Channels embedded in SD/HD/4K
- Sync Input: Tri-Sync or Black Burst.

WebRTC/IPTV Encoding

- WebRTC: very low latency h.264/opus transcoding, AES encrypted with web server and statistics/reporting.

Other IPTV encoding:

- h.264/h.265. Please recall that additional transcoding and/or serving tasks placed on the hardware may affect your ability to serve a very high rate/low latency SDI to WebRTC stream. Should your needs be very demanding, note that we can provide similar options in an i7 minu, or in a 1RU or 2RU rackmount unit.
- 4:2:2 or 4:2:0 output.
- Latency 100ms (real time); 500ms (low); 2000ms (best quality)
- Advanced video transcoding options for GOP size, b-frames, x264/x265 profile/compression levels, slices/frame, canvas aspect ratio, macroblock, quantizer, CEA-608/708 captions, VITC/RP188 timecodes,
- Extensibilty options; for example, support for GPI triggers for SCTE35 markers, providing ability to add signaling such as “on air,” “off air.”
- AAC, MPEG2 and AC3 audio transcoding
- Audio transcoding up to 8 tracks with audio track mapping control
- Audio profile controls (low complexity, w/spectral band, w/parametric
- adtm/latm audio formats
- Many additional encoding options configurable by outputting internally (to the local adapter) and processing output as a udp/rtp input stream, then configuring one or more custom outputs.

- Input formats include HLS, udp, rtp, MP4 file and many others.

Hardware

- Case: Black, Aluminum Alloy
- Intel 8th Gen Core i5 8250U (Quad core 1.6GHz) or 8th Gen Core i7.
- Integrated Intel HD Graphics 620; DisplayPort, HDMI outputs
- Memory: 16GB DDR4 RAM
- Expansion: 4x USB 3.0, 2x USB 2.0, 2x Intel i211-AT 1000M LAN, Audio/Mic combined jack

\• Power Supply: DC 12V Input

- 0C° - +40C° Surface air flow; Humidity 5% - 95% non-condensing

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