I Thought I Saw a Mixer In My Laptop

Written by Steve LaCerra
Feb 2010

We've been seeing tons of hardware audio consoles with sophisticated software. Now here's a twist from RML Labs: a software console that has no hardware. Okay, that's a slight exaggeration, but let's take a look at a cutting edge audio application that is not tied to a specific piece of hardware. The program is called SAC or Software Audio Console, and it has some pretty impressive features.

A Virtual Mixer

SAC is a virtual mixer designed for use on any PC running Windows 2000, XP or Vista. It looks (and functions) like a hardware mixing console, complete with multi-band EQ, polarity reverse, gate, compressor, aux sends and bus output assignment for each channel. There's mute, solo, fader, pan and a meter for every channel (just like on a hardware desk), plus a surround panner. In addition, it has something that no other mixer has: SAC provides digital signal taps from five different locations and provides 24 duplicate monitor mixing consoles. I can just hear a frustrated monitor engineer having a conversation with a band member: "You want more early reflections for the reverb on the triangle? Here's a control surface. YOU mix it!!"

The basic design of the Software Audio Console is a front-of-house mixing desk with all of the features mentioned above plus L/R swap for the stereo channels, key input for the gates, separate sub and center outputs for surround, plus high and low cut filters. You provide the hardware audio I/O. SAC will work with any Windows-compatible multi-channel audio interface (16-bit resolution minimum) and supports up to 36 stereo channels of I/O. Any input channel can simultaneously be routed to any or all of the output channels, and eight master output channels can be routed to independent hardware outputs. Another 16 output channels can be used as subgroup faders, and have the ability to ‘latch' with their respective assigned inputs - meaning that the subgroups can behave like VCA faders. If you'd like, you can relocate the group faders on the screen so that they are next to the input channels they are controlling. Aux sends can be routed internally, or they can be routed out of the hardware interface and into your favorite outboard ‘verb, while Aux return channels bring external effects back into the mixer.

Scenes and Plug-Ins

As you'd expect, SAC can take snapshots of console settings, store them, and recall them for later use. These snapshots are called "scenes," and they can include all mixer settings. You can, however, choose not to recall certain console data, or choose to omit certain channels or complete sections of the mixer when a Scene is recalled. A stored scene contains the assigned plug-ins for each channel as well as the plug-in parameters. Ah yes, the plug-ins. In a manner of speaking, SAC includes plug-ins because there's onboard EQ, compression and digital delay. That just scratches the surface, because the application accommodates Direct-X and VST plug-

ins - which means that you have the option of using thousands of available plug-ins (and don't forget the fact that there are a lot of cool VST plug-ins that are quite affordable).

SACRemote

A powerful feature of Software Audio Console is that it can use TCP/IP via Ethernet to link multiple computers in a large system. One obvious purpose of this would be to run separate front-of-house and monitor consoles simultaneously. One computer is designated as the host/master machine, and additional CPUs may be connected as remote machines using an application called SACRemote. This companion application does not require an audio interface and does not possess an audio engine, so it can be assigned limited "rights" (i.e., you have the ability to lock people out so they can't mess with your front-of-house mix). A not-so-obvious use for SACRemote would be giving each band member their own monitor console so they can mix their own monitors - but whether that's wise or not is another issue. Each user gets a mixer view exclusive of the other users. As you may have started to imagine, a wireless network would give an engineer the ability to move around the room with their laptop while mixing in SAC.

Mouse Alternatives

As we have often lamented in the past, audio mixing software is all well and good - but no one wants to mix on a mouse. For that reason, SAC supports a wide variety of MIDI controllers, including units manufactured by Mackie, Behringer, CMA and Frontier. The software will also accept control data from hardware consoles that feature MIDI control such as the Sony DMX-R100, Yamaha 03D and others. Fader banking allows small surfaces such as the Behringer BCF-2000 or Mackie Control, which provide eight and nine faders, respectively, to control large systems and maintain a small profile in venues where real estate is at a premium.

Since Software Audio Console integrates processing within the application and via plug-ins, there is no need for rack gear outside of the audio interface(s). Turnkey systems based on SAC ranging from 32x32 up to 72x72 are available from Computer Integrated Audio (computerIntegratedaudio.com) and include the CPU, audio I/O, control surface and rack case. RML Labs has a very interesting idea here: provide the audio horsepower, and let users choose the audio I/O and controller that most suits their needs and tastes. SAC is currently available direct for $500. A demo version of the software can be downloaded free of charge at www.softwareaudioconsole.com.

What are your thoughts?

Comment by GUEST on 2010-02-11 19:19:48
Great Article!

One thing that you forgot to mention is SAC's ability to easily 'Link' to it's sister application 'SAW'(Software Audio Workshop). SAW is a state of the art Integer Based DAW. With this combination (SAC & SAW) you can split the input signal from the SAC mixer and record each individual channel with perfect audio quality. Input Levels and Channel Labeling are all taken care of. I'm hired by the 'Producer' to run sound for a show, then I sell the 'Stems' to artist. Works Great!

Comment by GUEST on 2010-02-12 13:49:22
Another great mouse alternative, that's also wirelessly mobile, is SAC Remote on a tablet PC. Faders & fingers, anywhere in the house.

Comment by GUEST on 2010-02-20 15:30:08
36 stereo channels of i/o does mean 72 mono i/o channels available mix & match stereo/mono in and out as needed.
Up to 28 computers can be networked together allowing multiple operators simultaneous use (FOH, MON, press feed tech, recordist, individual musician monitor access, etc) while all the audio actually stays in the host computer.
SAW+SAC not only allows recording, it can do MIDI and SMPTE show control, multitrack audio and video playback, and even band MIA soundchecks or engineer training from prerecorded multitrack material.
A developer who responds extremely quickly to bugfixes, actually cares about your show, and is accessible for troubleshooting.
I've been using it since beta and it is amazing. For a show I need I/O, the host computer, mics, amps, & speakers...no further outboard anything.

Comment by GUEST on 2010-02-20 20:44:02
This software is absolutely stunning! And the developer is on the SAC user forum every day to help answer questions. Simply amazing. The cost/power ratio of this mixing solution is unapproachable by any other method.

Comment by GUEST on 2010-02-24 11:58:32
I've been using SAW for 15 years and am now using SAC to run the sound at my church. It sounds great, much cleaner then the old analog board. You really have to check out the video's of SAC in action at the website! Amazing piece of software!

Comment by GUEST on 2010-03-01 15:30:37
Do you think it matters what it sounds like? Amazing no one mentioned that.....

Comment by GUEST on 2010-03-01 23:47:57
Check out kuiaudio.com for pics of a full scale SAC rig.