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Sound Sanctuary

Small Rack, BIG SOUND

by Richard Rutherford

I love gadgets, buttons, knobs, faders, attenuators, meters and especially anything with blue LEDs on the front panel. What I never did enjoy was looking at a gaggle of wires behind the rack or actually ever having to move a rack full of stuff.

I understand the "need" for the confident and knowledgeable FOH person to have as much outboard gear as possible. All praise the elevated audio budget! But at some point, a 6-foot rack of processing for the fixed part of a fixed house system (or small portable system) just doesn't make sense anymore.

While most of my staff and I have sat through numerous certification training sessions on brutally intensive DSP system management units, I will suggest that many average FOH tech types would do themselves a great service to borrow a laptop. Downloading some software and installing it is not all that difficult.

In Fig. 1, you will see that we have a really simple three-way bi-amped main system and four channels of stage monitors. Basic. You will also see I could easily run out of room drawing in all the processing possibilities! Even in this rudimentary system, we have a minimal nine pieces of equipment that really never need to be adjusted once the room is "tuned". Averaging out typical sizes for this gear comes down to about 18 to 20 spaces.

In Fig. 2, we have eliminated about 40 pounds of equipment, about 20 balanced cables (i.e. ,120 points of connection) and saved 10 to 12 rack spaces!

Some people call them system controllers, some call them loudspeaker management and some of the install pieces do so much that it is hard to know exactly what to call them. Regardless, it's not just about the rack space. In reality, we have also provided a piece of gear typically capable of changing all the attributes of the system with just one button!

Imagine if you needed the same system to do distributed sound and needed a delay for the four speakers now being used as stage monitors. What if you needed all those speakers to get a mono signal? What if you wanted to send four mixes to a postproduction point (or points) and didn't need the stage wedges?

Not all DSP controllers are created equal, of course, and the most complex units can cost thousands of dollars. However, you really can replace a dozen pieces of equipment for a few hundred dollars if you do a little research.

I always recommend getting a unit with at least two more outputs than you think you need. You will use them! Another suggestion is to make sure you can gain access to system presets

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either through a simple selector switch or at least via an RS-232 port on your laptop. I know some units tell you how easy they are to navigate with the knobs, but a couple hundred dollars for these kinds of options will develop your faith in digital processing. Designing a whole new system setup in just a few minutes and clicking a mouse is way better than repatching cables. (Do they still do that?)

It's not unusual to "program" a system before it's ever in place, and with a couple minutes of tweaking, you're done minutes after the speakers are in place. You can even make specific adjustments for elevation, humidity and ambient temperatures. Try that on your graphic equalizer!

There are also many units available with digital I/Os, so you can grab a CAT5 cable and go direct to any number of postproduction possibilities.

One of the best features common to most DSP control devices is the security code user lock-out functions. Even the well-meaning volunteers slinking around the rack with a Phillips-head screwdriver looking to thwart security covers on crossovers will be repelled by the wonderful world of digital! A world without need for security covers on audio equipment...pinch me, I must be in heaven!

The point is that there are too many reasons not to step into the present decade, donate some of that old gear and try something well worth the time, effort and money. If you're still confused, send me an e-mail (rrutherford@fohonline.com) and I'll help get you on the digital path.

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