PRO AUDIO REVIEW

SECTION
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AudioControl Industrial
SA-3052 Real Time Analyzer

Audio analyzers are extremely useful tools for the audio professional; they have been around for quite a while. The original AudioControl analyzer was introduced in 1986. Good calibrated test instruments were expensive in the past and the cost was prohibitive for audio engineers. With the advent of PC-based analyzers using software, a wider range of options are available for the audio professional.

A self-contained unit that offers remote battery capabilities, a pink noise generator and accurate 1/3-octave spectrum analysis with SPL meter has obvious advantages in the field. The AudioControl Industrial SA-3052 is a standalone unit that is very accurate, affordable ($1,350 list), easy-to-use, and well-suited for many applications that require audio signal analysis.

Features

The SA-3052 I reviewed came housed in a soft carrying case. Inside the case was the analyzer, described in the manual as being "smaller than a breadbox." At 4.1"x10"x12.75" and weighing 11.5 lb, it is a reasonably compact package. The SA-3052 analyzer comes complete with a laboratory-grade calibrated measurement microphone with cable and AC cord, ready for quick and easy use.

The front panel of the analyzer is black and contains an LED display with thirty 1/3-octave bandwidth columns from 25 Hz to 20 kHz. Each column within the display represents one 1/3-octave band. The right-hand side of the display indicates the settings of the dB switch and the amount of change in the input signal that each LED on the left-hand side of the display represents.

On the far right, the display indicates the sound pressure level, relative to the setting of the dB switch and control. The power switch is on the front panel with an LED adjacent that shines steady green during normal operation. When operating the unit on internal rechargeable batteries (optional), the LED flashes green when the batteries need recharging. The LED shines red while the batteries are charging, but the batteries will only charge when the unit is switched off.

Additionally, on the front of the SA-3052, located under the power switch, is a series of push-button switches and adjacent LEDs for various applications. The SPL switch is used to activate the full-screen digital SPL display and can also be used to show the bar graph that displays scaling of the SPL in 4 dB steps. The display speed switch indicates the response time of the main display. Pressing the button changes the decay time of the display. Pressing and holding the SPL button replaces frequency response with numerical SPL.

Fast setting for transients, medium for constant program monitoring, slow averages 20 samples over a 1/2-second period, which is ideal for pink noise. A fourth display is for a 20-second time average and is indicated by the slow LED flashing.

The memory switch stores up to six different frequency response curves as well as the SPL display. Any combination of these memories can also be averaged, providing very good flexibility. A store/freeze button, for taking a snapshot of the display, lets one store the display and a recall/RTA button, which initiates the display to monitor real time or display a memory, completes the front of the SA-3052 analyzer.

The balance of the front section consists of three input connectors, one output connector and four rotary knobs (dBm/SPL-input sensitivity per step-signal level of pink noise). Input 1 is a balanced +12 V, phantom-powered, XLR microphone input. Input 2 is astandard (RCA) connector, and input 3 is a 1/4" tip-ring-sleeve (TRS)phone jack.

This covers a good number of ways to get into the unit without using adapters. The scal-

At A Glance

Applications:
Audio signal analysis

Key Features:
30 1/3-octave bandwidth columns from 25 hz to 20 kHz; sound pressure level display; balanced 12V phantom powered XLR mic input; standard connector; 1/4' TRS phone jack; 1 to 4 dB scaling

Price:
$1,350

Contact: AudioControl Industrial at 425-775-8461

ing of the dBm/SPL is accomplished with a six-position rotary covering a range in 10 dB increments from 70 through 120 dB. The dB per step rotary is four position for 1, 2, 3, 4 dB step changes to represent the value of each LED in the display. The output jack is 1/4" TRS unbalanced.

The rear panel consists of an AC mains power receptacle and fuse socket. The SA-3052 also includes a printer interface that is a 25-pin (DB-25F) female connector for use with an external PC-type printer. Adjacent to this is a momentary contact print switch to print the contents of the display.

In use

I first took the pink noise output of the analyzer, and connected it to input 3 on the front panel, to measure the pink-noise generator. I then compared this to my General Radio 1382 random-noise generator, which produced the same results showing a good stable pink noise source.

An analyzer is a great tool that I use religiously to balance a system. As pink noise is induced into the system, I set the levels between the high-, mid-, low- and sub-components initially with the analyzer. It is valuable to not only determine the energy between these components, but also to determine where the crossover points are and how they interact with the system. This analyzer showed accuracy in all levels, even when compared to one I own that costs considerably more.

A unique benefit the SA-3052 provides is a scale from 1 to 4 dB. It is customary to compare sound on a ±3 dB scale similar to what speaker manufacturers provide. I used the 4 dB scale initially on balancing amplifiers and then scaled down to 1 to 2 dB scales upon equalization - I found this was a very useful tool. It is also useful that when equalizing a sensitive knob one can set the levels of the analyzer to respond to the information provided. One change in the product I would like to see, however, is for the batteries to charge while the unit is operational. This would make it a bit more functional.

Product Points

AudioControl Industrial SA-3052 Analyzer

Plus

- Complete with lab-grade calibrated measurement mic, cable and AC cord
- 1 to 4 dB scale
- Accurate
- Very rugged

Minus

- Batteries cannot recharged when unit is on

The Score

An accurate and affordable analyzer, highly recommended for the audio professional

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Summary

An analyzer is a powerful tool that provides information quickly and reliably. Speakers are usually measured and rated in an anechoic chamber, which provides accurate measurements of a product in a sterile environment. An analyzer measures the information based on real-world situations of reflected surfaces. It provides valuable information based on the size of the sound system and how the various boxes interact, which is not always provided from the speaker manufacturer.

Sound systems and rooms are rarely perfect. An analyzer, therefore, is a helpful tool for every sound engineer. While the ear is the final judge, this tool is a welcome addition to the ultimate solution. The SA-3052 (and SA-3051) are accurate and affordable pieces, highly recommended for the audio professional.