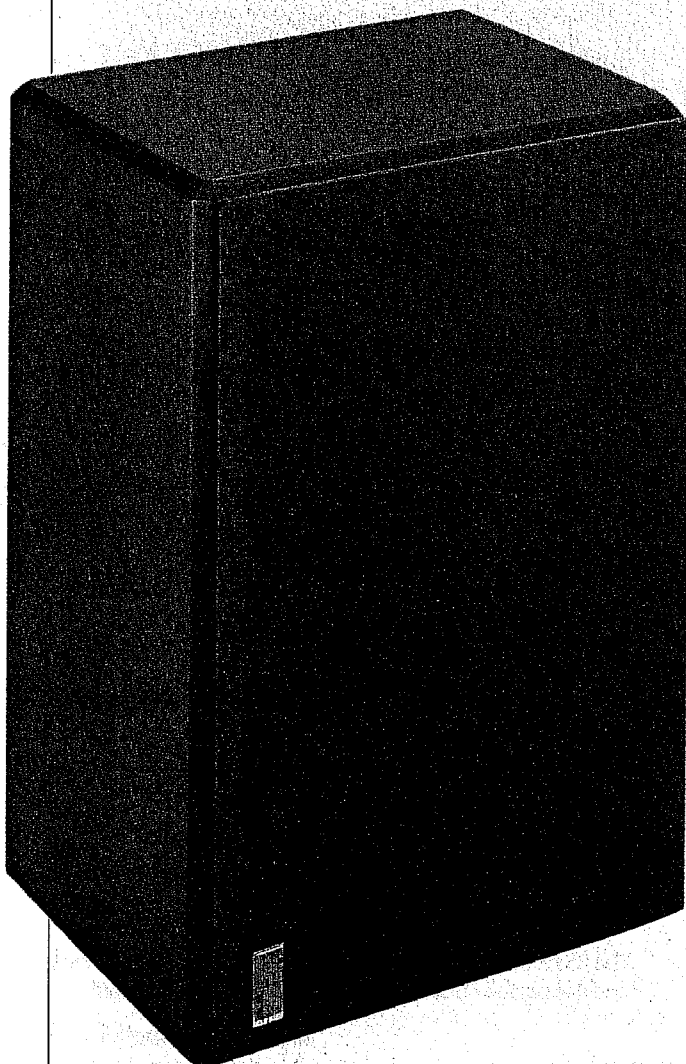


## Bag End E-Trap

Bag-End's tunable electronic bass trap offers a unique and significant acoustic treatment solution for control rooms and performance spaces alike.

While the general wave interaction principles employed in the Bag End E-Trap are as old as the oceans themselves, the incorporation of efficient and precise modal dampening into a compact, commercially available tool is both new and welcome.



### Features

The Bag End E-Trap (\$1,598) measures a scant 18 x 13 x 10 inches and more closely resembles a consumer subwoofer product than a capable low-frequency acoustic absorber. Unlike a subwoofer — whether used to augment the low-end output of main speakers or employed as a corrective tool to cancel a certain range of low-frequency energy — the E-Trap is a standalone product that does not interface directly with electronic source signals (e.g., your mix) in any way.

Essentially a closed loudspeaker system, the E-Trap is comprised of two sensing microphones (front and back of cabinet, user-selectable), processing circuitry, amplification and a speaker. The processing circuitry allows the targeting of up to two discrete center frequencies in the 20 to 65 Hz range for its electronic dampening. Controls are provided for coarse and fine-tuning, feedback amount and contour (interdependent Q + feedback) for each of the two channels.

The only external connections on the E-Trap are A/C power (via a standard Neutrik PowerCon locking connector) and a mini (1/8-inch) jack, which is provided to monitor/analyze the output of the currently selected sensing mic. The E-Trap literature and website state that a free Windows PC utility will eventually be provided to aid in testing/setup of the unit, but to the best of my determination, this was never released. [Bag End's Jim Wischmeyer comments, "We decided not to release the measurement software because there are so many very good and free or low-cost packages already available that work well." — Ed.]

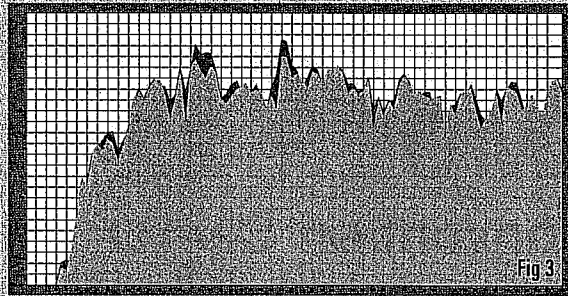
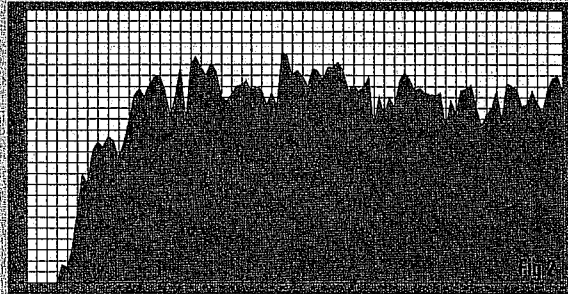
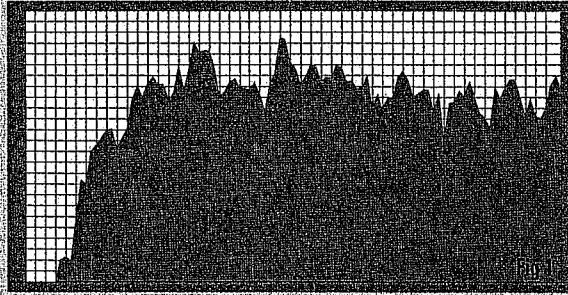
### In Use

The least destructive and most effective means to arrive at an acoustically reasonable space is via professional design, construction, and integrated treatment. The most destructive and least effective means is to simply EQ the signal to compensate for the room's behavior — while EQ in +/- 1 or 2 dB steps can be acceptable to rein in last-remaining trouble spots, I don't believe it should never be a first- or even second-line tool.) In between these extremes are a number of treatments and techniques that can be applied — typically best in combination — to bring an existing space under reasonable control.

►► **The Sound Waves**

I've always preached the gospel of bass trapping to clients. It's a fairly simple concept: the more bass trapping the better, for the only bass you want to hear should be coming from your speakers, not that which is bouncing around the room and "collecting" at the boundaries. Additionally, reducing the amount of rogue bass energy bouncing around significantly cleans up the rest of the spectrum and allows a simpler, more focused approach to addressing the remaining problem areas.

Even with a good design and the effective application of bass trapping, problem spots in the low end can, and usually do, remain. The worst are usually centered at or near the room's primary dimensional modes, and are most notable at the room's physical boundaries. In the case of my own post-production mix room, I have worked hard to perfect a wide



sweet spot spanning my engineering position. But the "producer couch" against the wall in the rear of the studio? Not so much. This made it the perfect area for deployment of the Bag End E-Trap.

In Figure 1, measured at "head-height" in the center the producer's couch, two peak areas are clearly exhibited, centered at around 33 and 50 Hz. Using Bag End's suggested starting points for the feedback and contour controls, I engaged the first of the two E-Trap channels and set to work on the 33 Hz peak. I'll pause here to say that, while the E-Trap is clearly not intended as a novice/consumer-friendly device, I found the setup instructions and the control labeling on the unit extremely Spartan, putting it politely. Yes, I freely admit I'm not a professional acoustician, but I do have a degree in physics, have designed and built several professional studio spaces and consulted on the correction of many others. Suffice it to say that the

company could afford to be a little more forthcoming with its body of knowledge regarding the placement and use of the E-Trap.

Gleaning some decent insight from a case study on the Walters-Storyk Design Group website [an insightful read involving E-Trap, available here: <http://www.wsdg.com/portfolio.asp?id=OVASEN—Ed.>], I placed the E-Trap along the front boundary, essentially opposite of the target area. With the assistance of fellow tech John Penovich and using a real-time FFT, I was able to hone in on the 33 Hz trouble spot and experiment with the feedback and contour until I realized some positive change [well, negative, actually] in the graph. I found that by playing with positioning of the E-Trap along the vertical plane, I was able to achieve an even greater reduction of the range at the tar-

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## Fast Facts

### Applications

Studio and Control Rooms, performance spaces

### Key Features

Two independently tunable dampening channels; 20-65 Hz target range; coarse and fine frequency controls; plus feedback and contour control. 18 x 13 x 10 inches.

### Price

\$1,598

### Contact

Bag End | 847-382-4550 | [www.bagend.com](http://www.bagend.com)

get position. I then engaged the second channel and set to work on 50 Hz.

As shown in Figure 2, healthy 4 dB and 4.75 dB reductions were realized at the 33 Hz and 50 Hz peaks, respectively. While these may not look like much on paper, the effect at the listening position was dramatic: The low end was more comfortable in general, and mixes matched my mix position much more closely than with the E-Trap switched out. Figure 3 combines the two graphs, with the effect of the E-Trap engaged displayed in light blue. Note that, due to the randomness of pink noise, there are numerous small differences in the plots unrelated to the E-Trap.

Re-measuring my mix position, I noticed some minor changes in the same two frequency areas, but not enough to fret over. This suggests that, to a certain extent, I was counting on those resonances when fine-tuning the acoustic treatment for my main listening position.

### Summary

While not exactly cheap, dollar-for-dollar the Bag End E-Trap is quite cost-effective considering the amount of materials and physical space required to otherwise see the targeted results realized in the test case above. The E-Trap proved quite effective in improving the comfort and sound quality in the control room, but it could be equally effective in controlling modal ringing in recording rooms and performance spaces — locations that likely have no amplified speaker systems, in other words. As one who routinely specifies and employs a variety of acoustic treatments, the Bag End E-Trap is a most welcome addition to

## Product Points



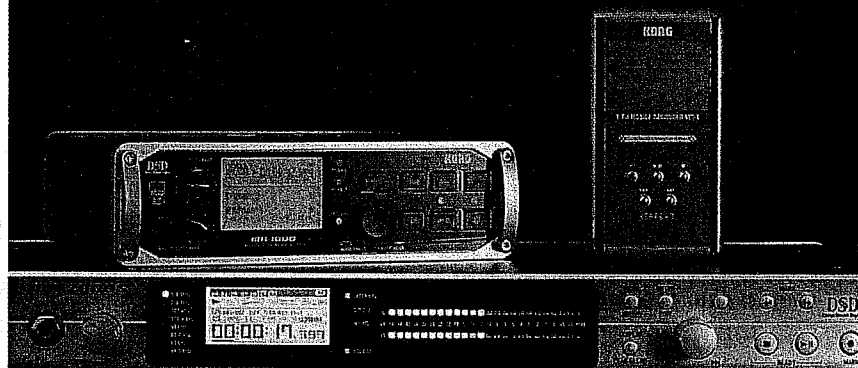
- ▶ Cost- and space-effective targeted bass trapping
- ▶ Dual target frequencies
- ▶ Appropriate for all types of acoustic spaces



- ▶ Insufficient setup/usage documentation
- ▶ Recommend that specification and installation be by professionals only

**The Score:** E-Trap is quite adept at improving audio in control rooms and equally effective in controlling modal ringing in recording rooms and performance spaces.

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