

Third Party Testing

Independent loudspeaker verification

By Pat Brown

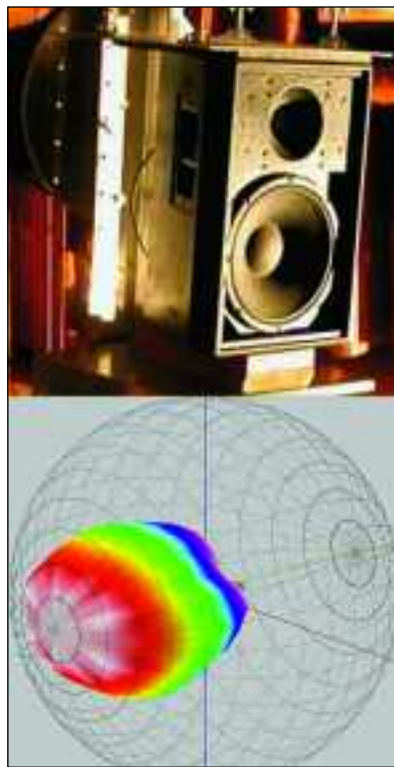
The audio industry has witnessed the development and evolution of many amazing tools over the last quarter century. We can measure sound to a far higher resolution than humans can hear. Some of the greatest strides have been in predicting sound behavior – using computer simulation to allow sound systems to be evaluated at the drawing board stage of a project.

But the prediction programs can be no better than the data that we feed them. The room models themselves must be accurate with regard to the main acoustical parameters of the room. This includes room geometry as well as the absorption and scattering properties of room surfaces. Both are big variables in the prediction process.

Another large variable is the loudspeaker data used in the model. It's not sufficient to have a simple on-axis frequency response, or even full horizontal and vertical polar data. The response at all angles from the loudspeaker must be known, and this requires some sophisticated equipment and routines to acquire.

It's also not a trivial task to manipulate a large, heavy loudspeaker in three-dimensional space to make anechoic (echo-free) measurements at high angular resolutions. While not impossible to do, the development of such a measurement system is not economically feasible for smaller loudspeaker manufacturers, who may only have a dozen or so models that must be measured.

Another problem is that there is currently no way to assure that the data gathered by one measurer is equivalent



to that gathered by another. In fact, due to the many variables involved it is highly unlikely that balloon data sets gathered in different places at different times by different people could be meaningfully compared.

Independent testing labs exist for almost every branch of technology. We rely on them for everything from safety tests for automobiles to performance tests for power tools.

It's logical then, that testing of loudspeakers should be performed by a third party with no vested interest in the commercial success in the device being tested. A service like this has

existed in Europe for some time, but not in the United States.

For this reason, we've formed Electro-acoustical Testing Company (ETC, Inc.). ETC provides a complete loudspeaker testing service that includes full data balloon measurements as well as other relevant tests such as power rating verification.

The service is available to both small and large manufacturers alike. The smaller ones are freed from the expenditures for facilities and personnel to perform in-house testing. Even manufacturers that can measure in-house have chosen to utilize third-party testing as a way to bolster consumer confidence in the measured data.

In addition to providing a well-documented measurement process, ETC spends considerable time and expense on finding new and meaningful ways to characterize loudspeakers in ways that are meaningful to sound system designers.

We provide loudspeaker data in two formats – a proprietary format used by the EASE room modeling program, and a more universal Common Loudspeaker Format that can be used by a number of modeling programs (i.e. CATT-A, Ulysses, Odeon, LARA). CLF data can also be used independently as an electronic specification sheet (www.clfgroup.org).

For more information, visit us at www.etcinc.us. And coming soon in *Live Sound*, we'll take a more in-depth look at the measurement process. ■

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