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### Tymphany's new compact woofer technology

In *Home Entertainment*, we've commented a few times about the lousy speakers built into flat-panel TVs, but we haven't made a big stink about it. Why? Because we didn't have any better ideas. After all, how do you get full sound from a chassis that's only a few inches deep, and almost completely filled with video electronics?

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The Tymphany LAT 250 woofer incorporates 10 miniature cones and two motor assemblies. Because it's only about 2.5 inches in diameter and 9 inches long, it can be squeezed into a flat-panel TV chassis. *(Click image to enlarge)*

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Finally, one company is offering a new speaker technology that could bring quality sound to flat-panel TVs—and to boom boxes, iPod speaker systems, computer speakers, and any other place where quality sound is desired but space is at a premium. The [Tymphany LAT](#) (for Linear Array Transducer) packs multiple small woofer cones into a cylindrical enclosure. On each end, there's a motor assembly—i.e., a magnet and a voice coil, just as with a normal woofer. But the voice coils drive long rods in the center of the LAT cylinder; the rods pass through all the cones, but are connected only to every other cone. Thus, each cone moves in the opposite direction of its adjacent cone. Each pair of opposing cones vents through a ring of slots in the side of the LAT. The LAT 250 is the smallest in the line; the cylinder holding its 10 separate cones measures about 9 inches long and 2.5 inches in diameter. (It's about 10 inches long and 3.5 inches wide if you include the mounting flange.)

How much bass can such a compact creation deliver? According to David Prince, Tymphany senior director for corporate application engineering, "The LAT 250 gives you about the same bass extension as a typical 8-inch woofer"—which would be a dramatic improvement over the measly 2-inch and 3-inch drivers found in most flat-panel TVs. The company rates the LAT 250's useful frequency response at 50 to 300 hertz, which is about as low as an 8-inch driver can go, but nowhere near as high. Thus, the LAT 250 would have to be combined with midrange/tweeter cones in a two-way configuration, or separate midrange and tweeter drivers for a three-way configuration—you couldn't just tack on a tweeter as you can with an 8-inch woofer. Power handling of the LAT 250 is rated at 100 watts continuous, about 10 times the power that any flat-panel TV's audio amplifier can produce. Cost? "About the same as a *good* 8-inch woofer," Prince said.

The new technology comes with an outstanding pedigree: Tymphany is part of the same corporate group that builds Peerless, Vifa, and ScanSpeak drivers, all of which are commonly used in countless high-end speaker designs. And among the company's officers is [Ken Kantor](#), the engineer who cofounded [NHT](#) and is responsible for some of the best speakers of the 1990s; he enjoys something of a legendary status among audio geeks.

The only demo we heard at Tymphany's Consumer Electronics Show suite in the

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Las Vegas Hilton was of an iPod sound system, and the tiny, LAT 250-equipped device did indeed put out an astounding amount of bass—about the same as you'd expect from a large bookshelf speaker.

At CES, Tymphany vice president of marketing Jennifer Stagnaro was coy about which manufacturers had signed on as customers, or what products they planned to use the new technology in, but she hinted that we might see a flat-panel TV incorporating a Tymphany woofer as soon as this summer.