

## Tymphony Design Packs In The Bass

By Joseph Palenchar -- *TWICE*, 1/5/2006

**Las Vegas**— Tymphony is launching its first two OEM subwoofers based on proprietary Linear Array Transducer (LAT) technology, which stacks multiple small drivers face-up inside a cylinder to deliver bass in the third of the space required by traditional cone drivers.

LAT technology could be incorporated in everything from architectural speakers to plasma TVs and PC speakers, but an after-market car subwoofer will be among the first LAT-equipped products available to consumers. The car subwoofer will be displayed at International CES by Alpine.

The technology allows 10 3.5-inch discs to achieve a slightly greater radiating area than an 11-inch cone, a whitepaper said. The first two subwoofers available from Tymphony on an OEM basis are the LAT 500 and LAT 700, said to deliver the bass output of two 10-inch drivers and two 12-inch drivers, respectively, in enclosures that are only 5 inches and 7 inches in diameter, respectively.



The frequency response for the Tymphony LAT 700 is 40-500Hz, and LAT 500's response is 30-500Hz. The 500Hz number shows where the usable frequency range is on these particular models, but customers will choose their own crossover points, the company said. Future versions will extend into higher-frequency ranges, but

they will be paired with more traditional tweeters or midrange drivers in two- and three-way designs.

Every other driver in each LAT woofer is connected by three lightweight piston rods to a motor on top of the cylinder, and the alternate stack is connected to a motor at the bottom. Each diaphragm is always moving toward or away from the diaphragm next to it, pumping air into or out of a vent between the diaphragms along the side of the speaker housing.

The configuration lowers harmonic distortion, reduces mechanical vibration and reduces cone breakup.

The opposing motors also cancel mechanical vibration that would otherwise color the sound and shake up the electronics of products in which they're incorporated.

The Cupertino, Calif.-based company was formed in 2005 through a merger of LAT-developer Tymphany and Danish Sound Technology, parent of transducer makers Peerless, Scan-Speak and Vifa. The privately held corporation is venture financed by VantagePoint Venture Partners.