

## LAT Subwoofers by Tymphany / Alpine

We spent Friday morning at the CES car audio show floor, but first we met with speaker design company Tymphany in their Las Vegas Hilton suite. Tymphany's new Linear Array Transducer (LAT) subwoofer utilizes a dual opposed woofer design with stacked passive cones to create monster bass in a much smaller space. Their LAT woofers are featured in a new line of Alpine aftermarket powered subwoofer boxes.

The LAT 500 speakers, consisting of 4 passive cones sandwiched in between dual 5" sub speakers, produce bass equivalent to that of two 10" traditional woofers but require only .8 cubic feet of volume. The larger 700 series use 7" cones and produces bass equal to that of two 12" standard subs.



The sound engineering behind these subwoofers is very clever. Each pair of passive cones is connected to a powered woofer. When the woofer thumps, sound is carried down carbon connecting rods to the passive cones that act as soundboards, amplifying the sound. In this manner Tymphany is able to use small woofers to create heavy bass. In addition to the LAT 500 and 700 series, Tymphany is developing smaller woofer modules for use in home theater, HDTV and PC applications. So you can expect to see this design used in home theater systems, televisions and even iPod speaker docks. Alpine was recognized as a CES '06 Innovations Honoree for their LAT Powered Subwoofer System.



Hearing the LAT system in a hotel suite is one thing, but feeling it bump the glasses off your face while sitting in the driver's seat of a demo car is a completely separate beast. Our next stop was Alpine's showroom where we had the chance to feel the LAT 500s in action. The seats of the Scion xB demo car were vibrating furiously as the 250 Watt built-in amp pushed the little speakers around. This was, by far, better sound than what was available in Tymphany's hotel suite - but it got even better.



The demo xB served a dual purpose in that it showcased the LAT system as well as Alpine's new VPA-B222 Vehicle Hub Pro component add-on system and PXE-H650 OEM Audio Processor. The Vehicle Hub Pro allows users to incorporate aftermarket audio equipment, including iPods, satellite and HD radio, DVD players and navigation systems into their factory OEM stereo head unit. If users want to upgrade their speaker system while retaining the factory head unit, the PXE-H650 OEM Audio Processor can optimize the upgrades for premium sound quality. For instance, if you have a nice new Infiniti G35 Coupe and you don't want a cheesy head unit replacing the nice stock one, this is great news for you. This unit flattens all factory equalization and retunes it based on audio inputs received from a proprietary diagnostic microphone placed in various locations inside the vehicle. Optimization takes about 20 minutes and will be performed by authorized Alpine dealers. In our demonstration, the difference between the upgraded sound system and the optimized upgraded sound system was night and day. The PXE-H650 processed sound quality was crisper, 'bassier' and had more depth than the non-optimized

upgraded system.



Of course Alpine had a couple other tricked out rides including a thumping Honda Ridgeline loaded with speakers and subwoofers and a heavily modded BMW 645i that looked more like an H.R. Giger creation than a slick German roadster.

