Subject: Re: Horns vs Arrays
Posted by Marlboro on Thu, 06 Dec 2007 16:02:03 GMT
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Other than high sensitivity, a three way horn system is pretty much the same as a point source with cones. The problem is that high quality sound with horns is very difficult to design properly, and often results in a horn sound which is great if you only listen to wood-winds or brass, but can be difficult with other types of music. And quality horns are not only very very expensive, they are difficult to find. Additionally they are not known for their flat frequency responses.A cone line array isn't plagued by the concerns above, and in addition:The major benefits are as follows:1. Frequency response dips and bumps tend to smooth out. And because there are some many of the speakers, each speaker may have limited output in the upper treble or the lower bass, but all speakers put out something in those areas. If you put enough of them together you can actually get some decent response in the areas even if the individual speakers don't have much to give.2. All arrays whether with really cheap speakers(49 cent for example) or expensive($49 for example) have decreased distortion. Decreased distortion increases airiness, openness etc. Power handling goes up dramatically. 32 dome tweeters might give you a 450 rms watt per channel protection. With each speaker handling only 3% of the total speaker load, its very difficult to overload them and cause distortion.3. All arrays have vastly increased dynamic range and increase sensitivity. 4. Size: One of the benefits of an array is the coupling of the speaker to the ceiling and floor. 5. They may not need a sub woofer, or even a woofer to play deep. A combination of 12 – 7 inch mid woofs have a huge amount of bass, with very low distortion.6. Sound dispersion and sound stage. Arrays produce a level of sound stage and sound dispersion that just has to be heard to appreciated. Array sound presents in the near field.7. Because array sound represents in the nearfield(as opposed to the far field for all point source speakers), the concept of reflections from walls and floor is almost non-existent8. Baffle compensation distortion is reduced to less than 1 db when the numbers of speakers in a line exceed 15.Disadvantages.1. They can be expensive. Even an inexpensive array is going to cost around $500 - 700 for the speakers, plus the building. An expensive one might cost as much as $2000 just for the multiple speakers, and the whole system a lot more when you add the amplification2. They often require extra amplification and electronic crossovers since its hard enough to build a quality passive cross for a point source. Its harder for a passive design.3. The cabinetry is long and can often be a nightmare with the number of enclosures and holes that have to be cut.Marlboro