Subject: 7 Pi without mid-horn?
Posted by JCDC on Tue, 21 Dec 2010 18:35:08 GMT
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Happy Holidays!

I have an Alpha 10 and PSD2002 and a 15 in a cab and was thinking about the 7 Pi ... hmmmm ...

The mid-horn is a bit beyond my meager skills and tools but I might give it a shot in a month or two. Don't have the bucks for a flat pack, so how would the 7 Pi work without the mid-horn?

I recall that the horn rolls off the low end and interference creates a notch at around 2k. So if I use the Alpha with no horn I could add a 1st order high pass at 200Hz and 1st order low pass at 1.6k. Maybe add a low value inductor to roll off the rising response of the Alpha.

Any ideas? Values for components?

Thanks,
Jeff

Subject: Re: 7 Pi without mid-horn?
Posted by Wayne Parham on Tue, 21 Dec 2010 19:44:46 GMT
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direct radiating midrange drivers and even built them as two-way setups. The main goal of this approach is to use the room's corner as a directional device, forcing the radiation pattern to be constant at 90°.

The wavelengths coming from the tweeter are small, making it acoustically distant from the corner and not particularly useful, so the tweeter horn has to set the pattern at HF. The woofer is what is most affected by the corner loading. The corner sets the LF pattern from the Schroeder frequency up to the crossover point. The midrange is sort of a transition region for this configuration, because there comes a point where the corner no longer acts like a waveguide and becomes a reflector instead. This is determined by the distance from the midrange driver to the walls.

That's why I tend to like the midhorn approach best. It sets the pattern up high, confining the radiation pattern to the desired 90° angle, limiting lateral reflections of higher frequencies that are acoustically distant from the walls in terms of wavelength. As frequency drops, where the midhorn is acoustically near the walls, they begin to guide the pattern acting as a sort of a flare extension.