Subject: Re: 7pi plans
Posted by Wayne Parham on Fri, 25 Nov 2011 17:16:41 GMT
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It's totally room dependant. The room sets the response below about 200Hz. And since they are designed to be used in corners, there is really no way to decouple the room response from the speaker response.

If you wanted to know how they would sound in an anechoic environment, you can look at the four

difference in the way a speaker acts in free space compared to the way it acys in eighth space. It is different in SPL, response and directivity.

To get a feel for the difference, listen to a portable radio set out in the open. Hold it in your hand and stand in the middle of the room. Listen to the tonal balance and the volume level. Now, walk over to the wall and set it on a countertop, table or shelf where the radio is sitting in a tridedral corner. You will notice an immediate and obvious increase in volume level, and the bass and midbass is made fuller. This is how corner loading affects the cornerhorn too.

None of that was as specific as I think you would like. The problem is I can't really be more specific than that. The response down low is too room dependent. I can only say that the bass is made fuller and the corner sets the directivity to a constant 90° above the Schroder frequency. It actually starts getting that pattern above about 100Hz, and is very well defined above 200Hz.

I think what might be more important to you is whether or not to use subs. I would suggest using them, yes. Even though the constant directivity cornerhorn increases bass output, it could still use some extra extension at the lowest bass frequencies. These are high-efficiency speakers, after all. And also, while directivity is constant above the Schroeder frequency, room modes influence bass coverage below that. A couple dedicated subs placed in opposite corners or at the center of the side walls will give increased bass extension and smooth the lower frequency room modes.

The constant directivity cornerhorn is really great down to about 100Hz or so, because the upper frequency room modes (100-200Hz) are mitigated by blending between the woofer and midhorn. The woofer is snuggled tightly into the corner, so there is no self-interefence notch from either adjacent wall or the floor. These two things really help maintain smooth response in the 100-200Hz range, which is such a problem for other loudspeaker configurations. But below 100Hz, the axial room modes dominate. So subs placed as mentioned above are ideal, providing increased extension and modal smoothing.