Subject: Corner pi speakers
Posted by Waxahachie on Wed, 13 Oct 2004 22:40:04 GMT
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A friend has a pair of your pi corner speakers and I am surprised at the simplicity. I thought they had a long passage between the woofer and the exit slots on the side but I looked around back and could see the woofer. Can you explain the way this works, and compare it with other designs? Thanks in advance, Wax

Subject: Re: Corner pi speakers
Posted by Tightwad on Wed, 13 Oct 2004 23:32:28 GMT
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Wayne has a post where he explains it all, but I can't find it.Basically, his design uses the corner of the room as a conical horn. Other corner horn designs (Klipschorn, Jensen Imperial, etc) use more complicated horn expansions, but still use the corner of the room as the final expansion.The last couple pages in Wayne's Pi-Align white paper show the design. Quite simple, just a ported enclosure, but rear firing, as you saw at your buddy's house.I see the design as a hybrid between bass reflex and horn loading. Basically, an intelligent use of room geometry, provided you have the right kind of space. Because of the corner placement, you get full coverage of the entire room, and the first reflections are the opposite walls and/or ceiling.
http://www.pispeakers.com/PiAlign.doc

Subject: Re: Corner pi speakers
Posted by Wayne Parham on Thu, 14 Oct 2004 01:06:28 GMT
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That's a good question, thanks for asking. And Tightwad is right that it has been discussed here a lot. It has been discussed enough that search results for "cornerhorn" bring back a pretty long list of posts. So it isn't surprising that Tightwad couldn't find the exact discussion he was thinking about. But here are a few of my favorites:
Cornerhorns!
Room corner characteristics
K-Horn/ Pi-Horn DifferencesTo summarize, I'd pretty much agree with Tightwad's description of

a conical horn with the same area expansion rate as a 70° rectangular horn up until the ceiling junction, where the expansion becomes parabolic. The motor chamber is vented, so you could say that it is a large conical horn with a vented rear-chamber.

I think the advantages are pretty obvious. The cabinet is much easier to build and service, and

resonances caused by the wood and chambers formed by it are avoided. The lower vocal

since the midrange and tweeter horns have 90° horizontal dispersion, there is no midrange wall slap because the pattern is contained within. Horizontal dispersion of all sound sources matches, so sound distribution through the entire listening area is uniform.
