
Subject: Back loaded corner horn
Posted by [xsheaffer](#) on Sun, 14 Dec 2008 21:57:00 GMT
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Hello Wayne/All,I would like to adapt Pi corner horn design to back load a full range driver. However, I don't quite understand the criteria used to calculate the geometry/spacing of the speaker cab to the wall.Wayne, could you please help me with the math behind this?Thanks!

Subject: Re: Back loaded corner horn
Posted by [Matts](#) on Mon, 15 Dec 2008 06:27:11 GMT
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what driver are you using? does it have low enough frequencies to benefit from the corner horn concept?

Subject: Re: Back loaded corner horn
Posted by [Wayne Parham](#) on Mon, 15 Dec 2008 17:28:20 GMT
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Corner loading is pretty simple really. A corner confines the radiation pattern to eighth-space and in so doing provides 9dB DI. There are other issues to consider, such as crossover points and the woofer and midrange are designed to overlap which reduces the floor bounce notch that would result from midhorn height. This makes the position of each important, as well as the crossover frequencies. But in the generic case of a horn placed in a trihedral corner, you can model this with Hornresp. Corner placement smooths the response and provides additional on axis output. Again, this is highly modified by room modes, but those are room specific and so are probably a separate discussion. I suggest multiple subs for dealing with room modes, again, a different subject.

Subject: Re: Back loaded corner horn
Posted by [Matts](#) on Mon, 15 Dec 2008 19:12:24 GMT
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Wayne, maybe you should design a smaller cornerhorn using one of those little Fostex speakers or another full-range driver for those w/ WAF or xover-phobia....

Subject: Re: Back loaded corner horn
Posted by [xsheaffer](#) on Mon, 15 Dec 2008 20:04:04 GMT
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The driver I am playing with is the Fostex FE103, which, obviously, is not a powerhouse. The idea here is to try to address the sloppy bass that is so common to BLH designs. I have heard Wayne's cornerhorns and he is certainly onto something. I want to extrapolate this concept to back loading because it seems like it may have the advantage of better time coherence with bass.

Subject: Re: Back loaded corner horn
Posted by [xsheaffer](#) on Mon, 15 Dec 2008 21:01:54 GMT
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Wayne, I remember in one of your tutorial papers (which I cannot seem to locate...GRRRRR), there was a factor used to calculate the spacing from the wall that I don't understand. IIRC it used a quantity "V" times sqrt 3, but I don't recall. Old age I guess...The back loaded 1 driver approach is a little different than your Pi implementation, but I want to employ the same approach using a coupling chamber for the backwave of the one driver. The trouble is I don't have a very good understanding of the design parameters of the Pi corner horn! I am just getting started. Wayne, could you steer me toward more info? Much appreciated any help you could provide! Thanks!

Subject: Re: Back loaded corner horn
Posted by [Wayne Parham](#) on Mon, 15 Dec 2008 22:36:10 GMT
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You're talking about the old original PiAilgn.doc paper from the 1970's. It described some of my basic philosophies early on, and it also shows the formula that is used to calculate box sizes, both standard reflex boxes and cornerhorns. This document doesn't address some of the more recent features, like uniform directivity, CD compensation for compression drivers and a handful of other core-value philosophies that I still hold today, and it also shows the basic layout of the documents about "cornerhorns".

Subject: JBL 2115 / Fostex F200
Posted by [Wayne Parham](#) on Mon, 15 Dec 2008 23:50:07 GMT
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The Fostex F200 looks very similar to the old JBL 2115, which was an excellent little 8" full range in max SPL. They would do about 93dB/W/M, as I recall, and didn't like much more than about 50 watts. But for a small room, that's plenty.

Subject: Re: JBL 2115 / Fostex F200
Posted by [Chris R.](#) on Tue, 16 Dec 2008 02:41:24 GMT
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Here's a link to maybe what you are talking about. These are 6.5" drivers in a corner box with the port in the back. I hooked them up to the mains once and they needed the bass boost switch to fill the room. I have the TQWP's made with 8" fostex drivers that I like well enough.<http://cerchaos.homeip.net:1280/woodworking6.html>Chris

Subject: Re: Back loaded corner horn
Posted by [xsheaffer](#) on Tue, 16 Dec 2008 08:51:50 GMT
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Wayne, Thanks a million! I will study these references and advise of the progress.
