Subject: Re: Finished Pi 4 with photos
Posted by Psychoacoustic on Thu, 25 Jun 2009 00:17:24 GMT
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Wayne, appreciate the time for such an informative reply. Have completed a couple of Econowave projects and it was your posts on that thread which brought me to Pi speakers.
Subjective impressions and arbitrary opinions won't help much to make decisions about a speaker's performance- that much I understand. But I know for certain that I was really pleased with all aspects of the this project's 'trial' version, with horn just sitting of top of the cab driven by the Pi 4 crossover. Although I've not spent a great deal of time auditioning the finished project, I don't have that previous confidence about it.
Regarding measurement- I appreciate your advice, and know this is the only reliable method. Purchasing measurement equipment, a laptop computer and learning to use the gear and interpret/apply results is a journey I'm not ready to begin just yet. I was hoping to avoid that by building a tried and proven design. Dammit! Shouldn't have messed with a working formula!
Aside from the cabinet volume (5cu ft) there are two differences between the original Pi 4 and the derivative I posted. They concern, as you described, the spacing of the vertical nulls, i.e. tweeter to woofer distance and distance to listener. Looking at the Pi 4 baffle cutout plans, the distance from top of woofer cutout to bottom of waveguide cutout is approximately 1.5"- is that correct? In the speakers I made that distance is approx 1/2", though comparing photos of Pi 4 from your site and those above, they look quite similar. Can (e.g.) half an inch make an audible difference? The other difference is that the flush-mounted waveguide is 15mm forward (of the woofer). If necessary, it wouldn't be too hard to alter the finished speakers to exactly replicate those distance measurement aspects of the Pi 4 design.
Also, the additional 15mm baffle layer has extended the total port length by 6cm. To return ports to original length (40Hz tuning), would I need to cut 15mm off of the end of each of the four ports or could I cut 60mm from the end of one port? I'm guessing that the additional port length has changed the voicing of the speakers somewhat.
So what I'm thinking of doing is firstly returning the speakers to their previous 'trial' state and reassessing. It's easily done and reversible; waveguide and driver back on top of inverted cabinet and cut a cover plate to seal the waveguide cutout in the baffle.