Subject: pi corner horn
Posted by David Morrison on Tue, 13 Jan 2004 12:55:23 GMT
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could some one explain the general idea of this box.And what kind is it port,horn, or a hybrid.I am just trying to understand how they workor if possible could a get some kind of a horn design for either a single 8,10,12. For learning purposesdkmst23@yahoo.comThank you David Morrison

Subject: Re: pi corner horn
Posted by Wayne Parham on Tue, 13 Jan 2004 15:33:51 GMT
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expansion is purely conical for the first eight feet, and the expansion then becomes parabolic. The transition from conical to parabolic happens when the ceiling is taken into consideration, so this eight foot figure is taken from ceiling height. There is a little more on this in the post called "Room corner characteristics."Other cornerhorn designs have folds that make a narrow throat

is very simple. The horn is deleoped solely from the room corner, and there are no folds within the cabinet. This provides a conical horn and provides directional eighth-space advantage. It is a simple design that works very well.

Subject: Re: pi corner horn
Posted by Dean Kukral on Tue, 13 Jan 2004 17:03:00 GMT
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If I get this correct, then:This design permits you to use a higher crossover than with a Klipsch-type folded corner horn, doesn't it? Thus, you are able to use a two-way system with full compression horn loading above the woofer? (Avoiding the need of the "Holy Grail" midrange.)

Subject: Re: pi corner horn
Posted by David Morrison on Tue, 13 Jan 2004 17:14:03 GMT
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when i used the formula on the pi align paper it told me to use a box of .36 cu ft the sub i have right now is in 4.5 cu ft vented with 67.5 sqaure inches of port. Can the corner horn be applied to any box volume for a sub. Becuase i doubt the cone will even move in that small of an enclosure.

Subject: Re: pi corner horn
Posted by Wayne Parham on Tue, 13 Jan 2004 21:43:04 GMT
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What woofer are you planning to use? What are its T/S specs?

Subject: Re: pi corner horn
Posted by Wayne Parham on Tue, 13 Jan 2004 21:48:01 GMT
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The design does allow higher crossovers than folded horns, and the speaker sounds very good in a two-way configuration. Original plans were for a three-way design, and those are still pretty commonly built. But you would be surprised how good the two-way configuration works, and the WAF is great with a nice wood horn up top. A two-way version of the loudspeaker is very attractive having no exposed drivers, and it sounds nice too.

Subject: Re: pi corner horn
Posted by David Morrison on Thu, 15 Jan 2004 22:55:39 GMT
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Model 9512e Woofer Diameter 12" Voice Coil Diameter 3" Voice Coil Type 4 layer DVC Magnet Weight 300 oz Cone Type Synthetic Fiber Blend Power Handling RMS 1200 Power Handling Music 2500 Suspension 75 mm X-max 29 mmNominal Impedance Dual 2,Ohm DC Resistance 1.9 Ohm Free Air Resonance 34 Hz Qts 0.31 Qes 0.33 Qms 4.15 Vas 35 L Le mH .9 Sensitivity 89 dB Mounting Depth 7.25" Cut Out Diameter 11 1/16" Speaker Weight 44

Subject: Re: pi corner horn
Posted by Wayne Parham on Thu, 15 Jan 2004 23:49:32 GMT
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PiAlign suggests a 0.38ft3 cabinet tuned to 41Hz. That is a very small cabinet, and it is sometimes difficult to pack everything inside a motor chamber that's this tight. Especially in this case, with the motor extending almost 8" inside the cabinet.Performance from this cabinet is excellent, with a nice flat response curve. Really, you can use any box size between 0.4ft3and 0.8ft3 tuned to 40Hz, and response remains nice and flat. If you get much above 0.8ft3, the system becomes underdamped and peaky. But you can employ an EBS alignment using cabinets

between 1.0ft3 and 1.5ft3 tuned to 30Hz. This gives extended, deep response with a fairly shallow shelf of only 3dB reduction. That's a pretty good solution.If your cabinet is much larger than that, it really should be sealed. There are many that prefer a sealed box, and if that is what you like, then a large box is acceptable. But f3 is way up there at around 100Hz, so I don't really like this approach. Then again, rolloff is slow and gradual, so it isn't like you are absent of bass or anything like that. Still, I'd run this speaker in a ported box between 0.4ft3 and 1.5ft3, tuned in one of the ways described above.At any rate, once you've chosen a motor chamber size, then you can

that are critically damped to slightly overdamped for this configuration. EBS alignments are acceptable, as are other slightly peaked (underdamped) alignments, but as you might expect, they'll increase punch at the peaked frequency. This is sometimes pleasant, sometimes not. But

system is well formed and sounds good, then your cornerhorn will sound good too.

Subject: Re: pi corner horn
Posted by David Morrison on Fri, 16 Jan 2004 15:32:04 GMT
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The box it is in now sound good with good spl too. However i do have another sub sitting a closet at home would this work better for the first try (rec box 1.0-1.75 cu ft) it t-s parameter are below. Diameter 10 in Mag Weight 102 oz Freq Range 30-200Hz Nom Imp 2 x 4ohm RE 2 x 2.10 ohm Fs 30 Hz Qts 0.41 Qes 0.44 Qms 6.32 SD 54 In^2 Vas .99ft^3 28 L Cms 1.60E-04 m/N Mms 6.09 0z VC Diameter 3 In VC 5 Mil Aluminum VC Ind 2.10 mH BL 12.6 Tm Xmax 14 mm SPL 85 dB Power 500 W RMS/1000W Peak

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Subject: Re: pi corner horn
Posted by Wayne Parham on Fri, 16 Jan 2004 16:20:48 GMT
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Your second subwoofer would work in a chamber between 0.4ft3 and 1.0ft3 tuned to 30Hz. For larger cabinets, up to 2.0ft3, tune the chamber to 25Hz for best results.

Subject: Re: pi corner horn
Posted by David Morrison on Fri, 16 Jan 2004 17:51:10 GMT
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maybe i will try that one first. can a slot port be used in this box i love using them. i can adjust tuning for them freely to get the sound i want. also is port sound a big problem. what would

happen if i used the first sub with the box i am currently using which was the recommended box by the manufactor. Would it just lack in low's or be really boomy. Just curious.I hope i am not a pain these just interest me.

Subject: Re: pi corner horn
Posted by Wayne Parham on Fri, 16 Jan 2004 18:57:19 GMT
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Several models use a rectangular port; Some cylinder diameters are hard to obtain so I use a box-shaped port instead. And as long as the port isn't too small and power very high, port sound isn't a problem. But if the port is too small and airspeed becomes too high, you'll hear 'em chuff.

Subject: Re: pi corner horn
Posted by David Morrison on Tue, 20 Jan 2004 19:18:55 GMT
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what would hapen if i put the recomended horn on a larger volume box would this keep the responce better.

Subject: Re: pi corner horn
Posted by Wayne Parham on Tue, 20 Jan 2004 19:42:24 GMT
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You'd have to model or measure its response and see. From the simulations I ran of the woofer you've mentioned on this thread, performance suffers when using a significantly larger box.
