Subject: New Addition to Family
Posted by GarMan on Mon, 19 Apr 2004 00:31:49 GMT
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Had some time this weekend, so I built myself a pair of One Pi's. I had the parts sitting around for six months now, so it was about time.Instead of using MDF like my Towers, I tried the Russian Birch plywood from HD. A 4x4 sheet was $40 compared to $20 for 3/4" MDF, but since I don't have to veneer, the extra cost was worth it. The material was very nice. 13 plys in 17mm, and much easier to work with than MDF. Non-resonance like MDF too. I had some problems with splintering at first, but quickly got the hang of it.A lot of people on this forum talked about just gluing the panels together without any kind of joinery, but I found it very difficult. Pieces slipping here and there. I actually found it easier (and faster) to use dowel rods to fit the panels together.The build went pretty well except for a couple of problems. I forgot the make the front panels mirror images, but that's minor. The second problem came as a result of my cutting diagram assumed 3/4" panel thickness but the plywood was 17mm. Both the front and back baffle are 1/4" too wide. I have 1/8" of ledge on either side. You can see this in the photo labelled "Corner". I haven't decided to shave this off or to keep it as a design element.The speakers were pretty much to spec, except for a couple of things. The first was I made it one inch deeper to accomodate the bracing. I'll talk about the second later.I became a big fan of these speakers almost immediately. They are very handsome speakers. Well proportioned, with drivers filling out the front baffle nicely. They don't go down as deep as the PI Towers, but deep enough. Everything else is there. I would even say they have better midrange than the Towers. People talk about the PI Towers as an excellent deal, but take the cost and time of cabinet into account, these One PI's beat it hands down.The second change I made was to replace the 0.5mH coil that came with the kit with a 1.0mH coil. This tamed the midrange and made for a very smooth sound. Why 1.0mH? Did it come as a result of intense calculations, modelling and testing? No. It was what I had lying around. With this mod, I found no need to do anything with the piezo. This is a very enjoyable speaker to listen to.Most of the references to One Pi's say they make great surround speakers. I see no reason why these can't be used as main speakers either, or even in an audio/stereo set up.BTW Wayne, not sure how things are done south of the border, but up here in Canada, the copper wire is used for the positive lead while the silver is used for ground.Gar.
Click on One PI

Subject: Re: Carly's Cool!
Posted by BillEpstein on Mon, 19 Apr 2004 01:07:23 GMT
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Insanely jealous that you Northerners get the good ply at your HD, eh, hoser?You might try one of these jointsa to keep things from moving around:1) rabbet joint 2) housing jointFor the rabbet you make a few test cuts in the cheap stuff to find the fence position that gives you an exactly equal rabbet on both workpieces when you run each piece horizontal and then vertical against your fence. Then they fit together w/o slip and you have doubled the gluing area.The housing joint is even better but you need a Dado set for your saw. You cut a groove or dado in one workpiece

exactly half the width of the material in from the edge. You cut a rabbet on the adjoining piece that fits into the dado. This is stronger than the rabbet because the tongue on the rabbet's piece is captured inside the dado.In both cases it's very important to wind up with the edge of one panel slightly proud of the plane of the other. It really is worth the time to make the test cuts to accomplish either of these joints. Make an extra set of pieces to set aside to index the blade for the next time you need to make this joint. Then all you have to do is fine adjustment to that projects thickness of material.One more really neat thing you can do involving 4" wide high quality (3M) masking tape for a box the size of the 1Pi or even bigger.. When you stretch masking tape it resists with about 60 lbs of pull. That happens to be the minimum desired pressure for PVA (carpenters) glue. Cut all four panels of the box sides with 45 degree mitered edges. Cover the edges with plenty of white, not yellow PVA glue(you'll need the extra open time). Now lay them out in order with the glued miter sides down and the edges just touching. Beginning at one end tape one piece to the next pulling and stretching the tape as you do. Use 3 pieces of tape for a box the size of the 1Pi. Tape all four pieces together. Now you and a friend flip them over on the other side. Bring them up into the box shape, make sure the ends are touching without overlap and tape the last sides.You got yourself a box. Wait 24 hours before working on it. The 1 and 2Pi's really are great and moreso at the price. The Alpha 8 and 10 get little respect on the boards but they really do sound good. Way to go.

Subject: Re: New Addition to Family
Posted by Wayne Parham on Mon, 19 Apr 2004 02:35:31 GMT
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That's a good lookin' setup you have there, Gar. Nice system, great work! I couldn't help but wonder what material was playing in the photo with Carly. Something has her attention!About the wire colors, I've seen some connect one way and others connect the other. Doesn't matter to me; It's just a way to keep it straight. About the 1.0mH coil, that's a good choice too. I use a 1.0mH coil when horn-loading the driver. Values between 0.5mH and 1.0mH work just fine to remove a little bit of energy above 2kHz. Naturally, larger values make it a little bit smoother, although the difference is pretty subtle. Just enough is just about right. We're looking to carve out about 3-5dB in the octave above 2kHz.

Subject: Pi tipping
Posted by newsjeff on Mon, 19 Apr 2004 22:35:41 GMT
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Nice job, Gar. Your speakers look wonderful. You have me thinking of new surround sound speakers. Maybe after I build a new B12 subwoofer? I noticed you tip your Pi speakers toward the ceiling. I'm gonna have to try this with my Theater 4s. Might be interesting to point the tweeter upward and see what happens. I have some 3/4" MDF lying around somewhere. Anyone else tip their Pis?Also, I have been researching a new amp for my system. I came across a mod for the

Bottlehead Paramour concerning Pi speakers. The guy who posted the info on this mod - ahem - seemed to be using upgraded iron in his 'Mours. I guess it wouldn't matter which transformer I was using. Here's the mod:Output transformer taps: Primary-.625w tap(blue lead) to terminal 25 and Secondary- 8ohm tap(white lead) to terminal 24. Just wondering. It would be easy an easy fix if I didn't like it, huh.

Subject: Re: Pi tipping
Posted by Wayne Parham on Mon, 19 Apr 2004 22:53:51 GMT
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Probably gonna be a little while on those B12's. Eminence has to do a second prototype with the shorting ring outside the core.

Subject: Re: Pi tipping
Posted by newsjeff on Mon, 19 Apr 2004 23:05:08 GMT
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it's going to be a while before I have the money for a the new sub anyway. Remember how long it took me to buy that second Theater 4 kit? And I still have an amp to buy. I would like to do a few more Foreplay mods. Oh, I need to finish a couple more of Jon Risch interconnects - those Eichmann Bullet plugs are EXPENSIVE. Plus one other expensive project - the new baby. They tell me it's going to be a girl. But that new sub is definitely on my list.

Subject: Re: Pi tipping
Posted by ToFo on Tue, 20 Apr 2004 01:58:30 GMT
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I have tipped my T4's and eventually I decided to make a shim to go between the cabinet and the horn which adds just a few degrees of upward tilt. I like the look of these big monoliths sitting squarely on the floor, but there is a bar that we often sit at just a few feet from the speakers, so we were sitting where the top end coverage starts to fall off. I noticed the mids still souded great at the bar, so I set the horn for my particular coverage needs. I split the difference. The horns now fire a bit above the sofa and a bit below the bar seated ear height. Note that by not tilting back the speaker my cancellation nulls are still where I want them give or take a bit for the thickness of the shim(nowhere your head would likely ever be anyway). With them tilted back sitting/laying on the floor was no go as the mids went to null city. Stereo plus floor seating means multiple people wathcing TV or movies in my house, and that is surely not the time for inaudible midrange(and thus speach). With the closer spacing of the smaller Pi's the null stuff is not nearly so critical,(but

is surely a bummer if your sitting in the null), but put a monster cabinet in a smallish room and coverage/interraction nulls need to be considered because with so little area, people will end up sitting right where it sounds bad if you allow there be such a place. Raising them up can be great if you walk around, dance, cook, or have parties a lot. I set my room up so the areas where I sit are close to the speakers and areas where I am on stools or standing are at the other end of the room so speakers on the floor with a little angle up for the tweeter, or the whole cabinet will give great coverage for every person in the room.Theres my two pennies,Thomas

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Subject: Solid cabs!
Posted by ToFo on Tue, 20 Apr 2004 02:02:55 GMT
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I am a stickler for well done elegant bracing, and I have been wanting to do something in birch ply. This was a nice double tease for me. Thanks for sharing these. I know you love them.great Job,Thomas

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Subject: Congratulations!
Posted by elektratig on Tue, 20 Apr 2004 20:36:15 GMT
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Newsjeff,Congrats on the anticipated baby girl! If you think you've got problems now, wait about 16 years. Remember what 16 yr. old boys were like?
Tempest and Pi Construction Pix

Subject: Re: Pi tipping
Posted by GarMan on Wed, 21 Apr 2004 20:17:37 GMT
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I tipped them up so I can stand in front of them and pretend they're stage monitors. It helps me with my air guitar playing.Actually, they're not permanent stands. I made them out of scrape material I had left over. So, don't think I "designed" them for any special purposes. Although I bet that if I made some stuff up, like they're made from special exotic lumber from a remote Russian region, laminated by hand to provide resonance frequency of Mach1/PI, angles and dimensions calculated through extensive modelling by six CRAY computers in parallel, and hand assembled by a tribe of Amazon drawfs, someone would pay a couple of grand for the stands. "It improves imaging. Can't you hear it?"The stands do help with these little guys if you keep them on the floor. But I think I might be better off rising them off the ground instead.

Subject: Re: Pi tipping
Posted by GarlandGarland on Wed, 21 Apr 2004 22:39:11 GMT
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Oh yeah!, best sound from my Theater 4s from 8 feet away is with the front bases wedged slightly up in front maybe a 1/2" block. Then sitting in my comfy chair sound is just right!Garland