

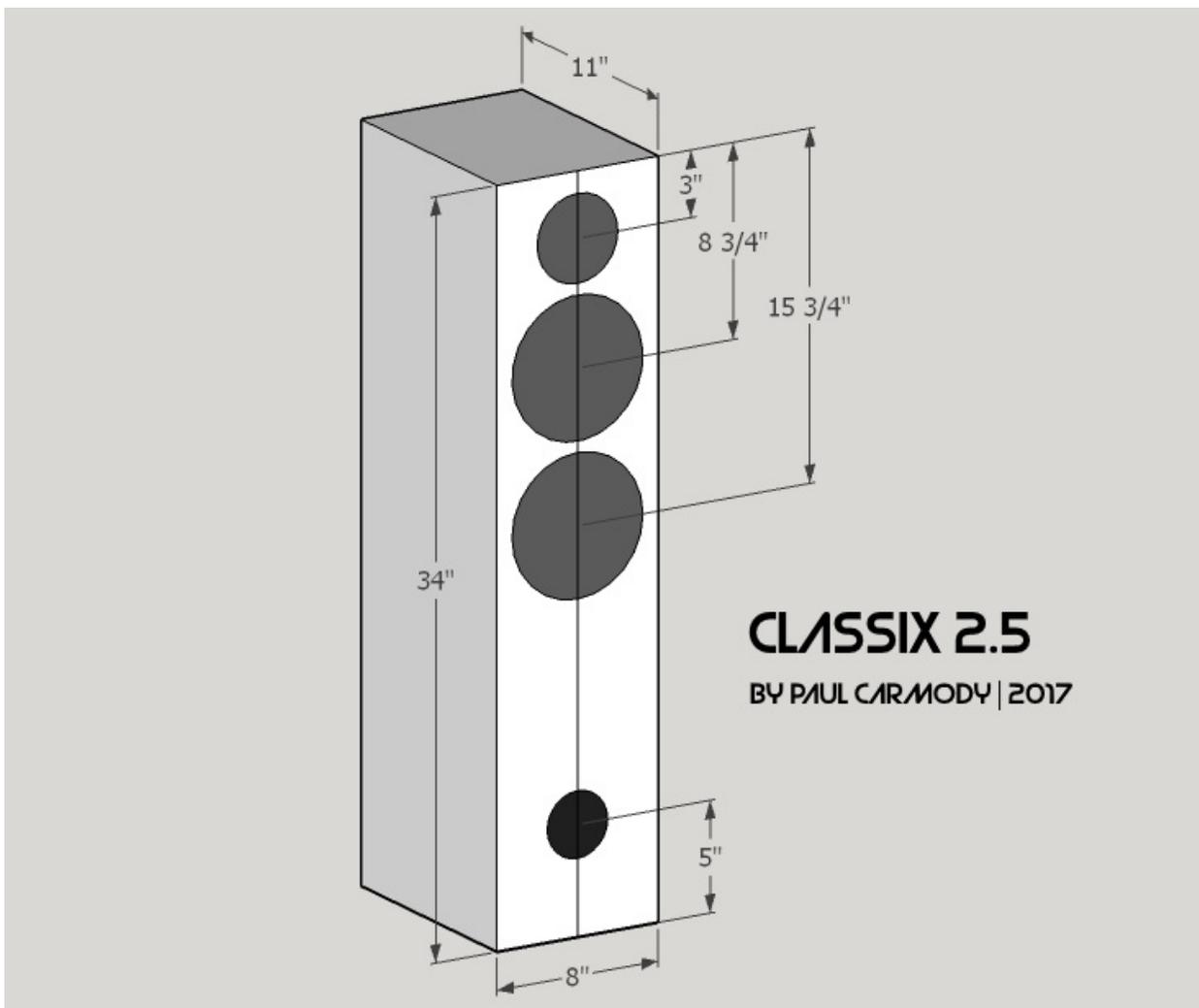
Classix 2.5 (TMM)

The first time I fired up my first (successful) DIY project, the Dayton III by Wayne Jaeschke, it was a life-changing moment for me. What I had just made over the course of a few weekends, using only my own elbow grease and a pile of MDF and drivers, was so much better-sounding than anything I had ever owned before. And the money I'd spent on it all was a fraction of what I would have spent on something from the boutique HiFi stores. It was a true moment of bliss. Unfortunately, that bliss was short-lived as I came to the realization that simply plopping giant bookshelf speakers on top of chairs or old monkey-coffin speakers wasn't going to cut it in the Spouse Approval Factor department. And so I spent the following several weekends doing the (unexpected) project of making speaker stands.

Over the years, it has always eaten away at me: what would it be like if you could take a project like the Dayton III, with that beautiful deep bass from a pair of Dayton DC160, but make it into a small floorstander. Doesn't that just make more sense?

The time has finally come to find out. What we have here is the Classix II design adapted into a 2.5-way floorstander. It builds on the benefits of the Classix II--big sound, deep bass, smallish cabinet--but benefits from more SPL output, and a 1-piece floorstanding cabinet that one can finish to suit his own decor.

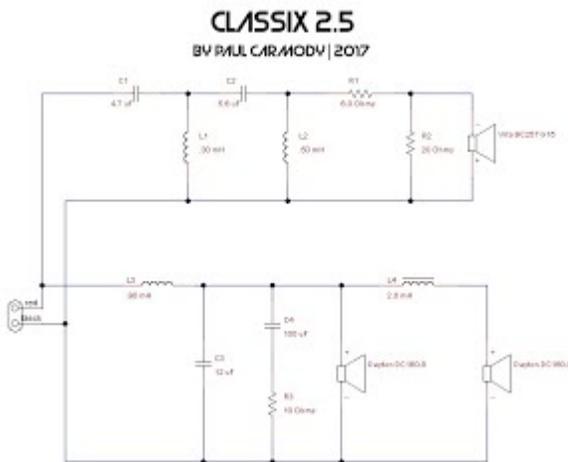
Enclosure Design



The enclosure for the Classix 2.5 uses the basic shape of the Amiga cabinets. It's 30 Liters internally, which is all the pair of DC160 really need to sing in all their basso glory. I used a 3" diameter vent that is 8.5" long. This tunes the enclosure to approximately 40 Hz, and will get an F3 around 35 Hz. I ported mine on the front, but you could just as well put the port on the back if you prefer that look instead.

The model calls for .75" thick MDF or plywood. There are a few braces tying the walls together inside; I recommend about 3 or 4. They can simply be 3" wide pieces of scrap, glued tightly between parallel walls, or you can get fancy with "windowpane"-style braces. The back, sides, and top of the enclosure are lined with eggcrate foam. A few very light handfuls of polyfil stuffing placed behind the woofers should be all that's needed for any additional damping.

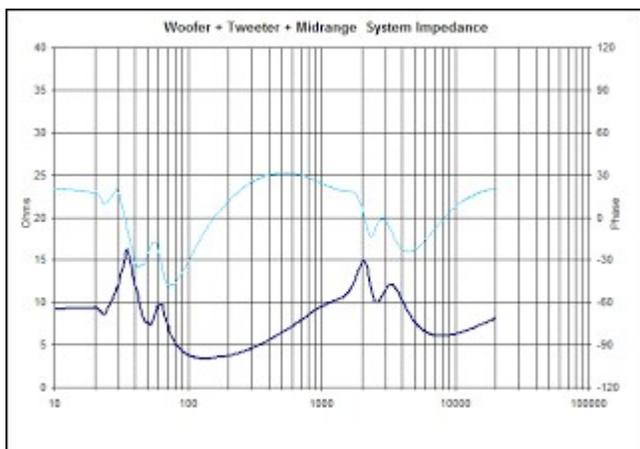
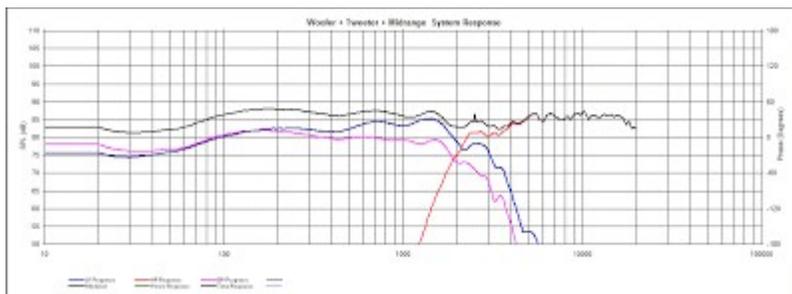
Crossover Design



The crossover topology of the Classix 2.5 very closely follows that of the original Classix II. We still have a 4th order electrical filter with an L-pad on the tweeter, and a 2nd order with a Zobel-looking filter on the woofer. There is also the additional inductor after the first woofer which gives us the .5 factor, meaning that the second woofer will roll off sooner, and won't interfere with what's coming out the tweeter (you can see its response in Pink in the Frequency Response below).

While I wish I could have accomplished this crossover with fewer components, it just wasn't happening. The problem is that the DC160, when left to its own devices, doesn't like playing midrange very much--it sort of wants to take a nosedive there. So this crossover hammers the woofer's response into submission, and also brings the tweeter into tight phase alignment with it, thus giving nice seamless transition--and a much better midrange than you'd normally hear from the DC160.

In case it isn't obvious, since the Classix 2.5 uses a pair of 8 Ohm woofers wired in parallel, the impedance is going to dip rather low. In this case, the minima is between 100-200 Hz, where it reaches about 4 Ohms. This shouldn't be a problem for most any mid-fi amplifier rated for 6 Ohms or less.



Listening Impressions

As I said about the Classix II, if you are the type to hold your nose up to Pop, Rock, Rap, or R&B recordings, you're not the right audience for these speakers. The Classix admits up-front that most modern recordings are flawed, but instead of showing you every flaw and wart of a recording, they emphasize what's great about them. Deep, authoritative bass: check. Big soundstage: check. Surprisingly accurate imaging: check. Will they play "girl and a guitar" or a symphony? Sure, but what they really want to do is make you want to listen and re-listen to your favorite studio-produced CDs, and crank it! They'll be detailed enough that you'll find yourself hearing bits in the recording you've never noticed before, but not so much that it becomes fatiguing.

The overall sound is very similar to the Classix II, as it should be. However, a pair of woofers means you're going to get more SPL. I'd estimate the sensitivity of these to be around 87 dB @ 1 watt.

Conclusions

I think the Classix 2.5 shines as a great beginner project; something that won't break the bank, and has a relatively small footprint that should blend into most homes. If you're feeling handy, the cabinets are fairly simple to build, or you can use the "Amiga"-shaped flat packs from Parts Express. Plus, as I mentioned earlier, you're not responsible for buying or building any speaker stands.

It's been 10 years since I was first bit by the DIY speaker bug--the Dayton III being my first success. So this project sort of brings things back full circle for me, or at least lets me pay tribute. Like I was saying earlier, the feeling of having built something with my own two hands come out sounding so good was a life-changing experience for me. I've been hooked ever since. And I hope that maybe I've helped provide that same blissful, satisfying experience for a few other people over the years--and will continue to do so in the future.