

Overnight Sensation TMM Tower



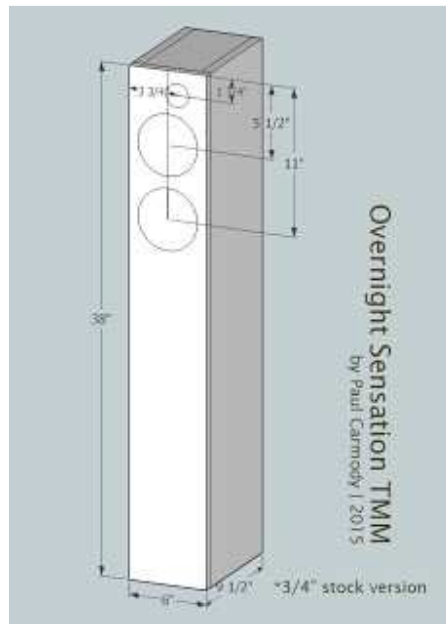
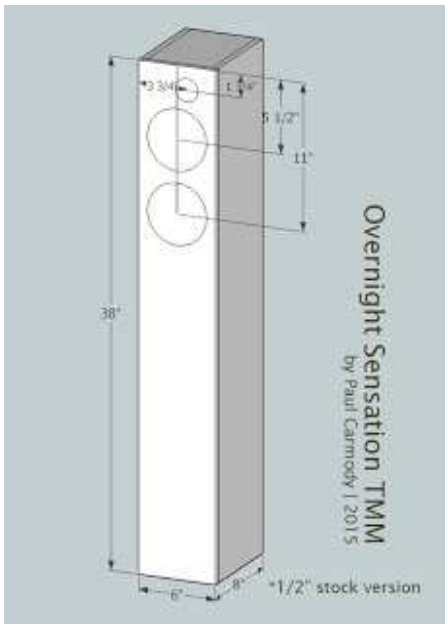
What? You mean I'm not done with the Overnight Sensations?

OK, so here's the story. Back when I designed the Overnight Sensation MTM, I knew some folks were going to want to make towers out of them--and there are plenty of excellent examples out there. However, my mind would always play around with the cabinet shape, wondering what else was possible. For some reason TMM towers are almost always more pleasing to my eyes than MTM towers; maybe they create less visual impact in the room, maybe they look less like they might tip over, maybe I can just sense the Spouse Approval Factor.

TMM are certainly no panacea though, and in my opinion are much harder to get right in the crossover. However, I don't mind the challenge once in a while, and I have always been curious what kind of deep bass I could get out of the B4N if they had a lot more cabinet volume to play into. So I decided that the only way I could sleep at night is if I finally just tried this design for myself. And I'm so glad I did. What a fun way to round up this series!

I wanted to keep the same general layout and dimensions as the original Overnight Sensations and OSMTM so that a family resemblance would be instantly apparent if these were placed in the same room as the originals. The Width is still 6", and the depth still relatively shallow. The nice, tall height gives us something we've never gotten to play with on the B4N: internal volume. *Note: this is not a Transmission Line; it's just a simple, vented enclosure. I just drew up a shape I liked and designed around that. If someone wants to design a TL enclosure for this, be my guest*

The internal volume is approximately 21 Liters, and there are 2-3 "windowpane" braces here and there. The vent is 2" diameter, and 3" long. This tunes the speaker to 50 Hz, and should give an F3 around 39 Hz. The vent is about 5" up from the bottom of the cabinet, and can be placed on the front or the back, depending on which you like the look of. The cabinet can be built with either .5" or .75" stock. I used a medium-light fill of polyfil in the top 2/3 of the cabinet.

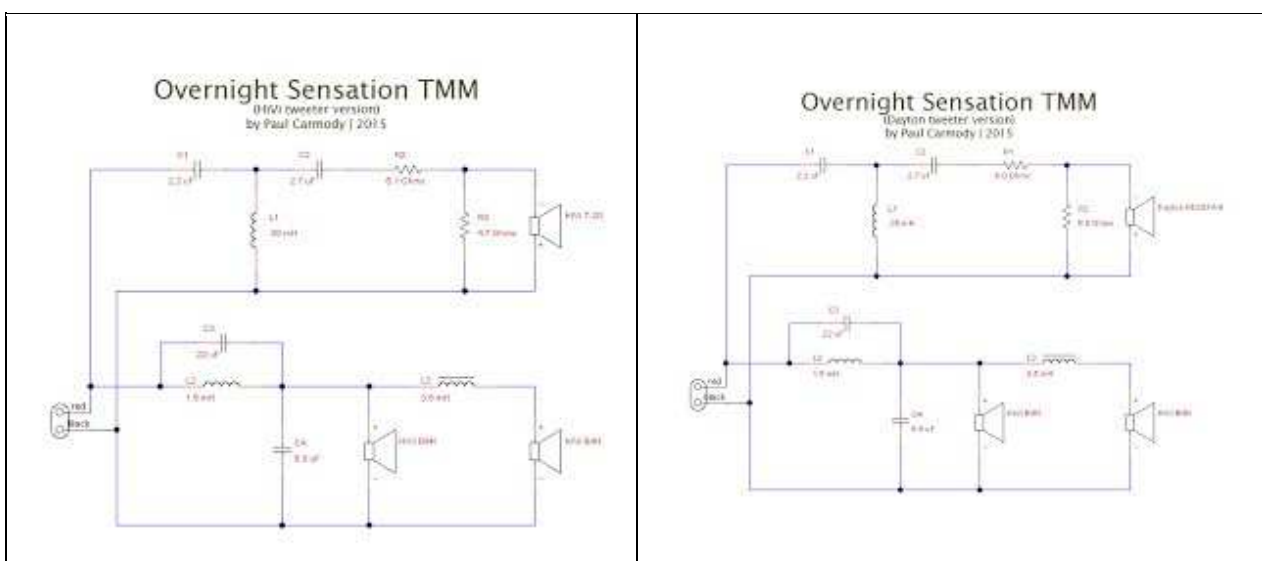


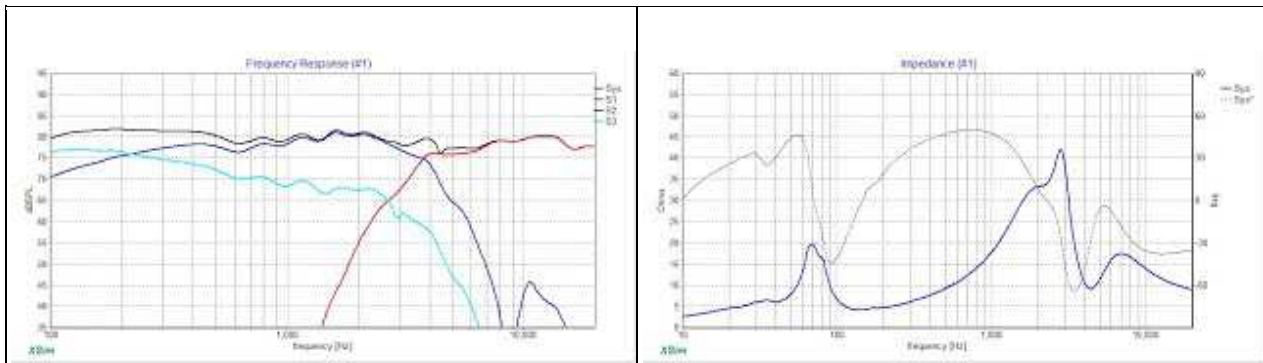
Crossover Design

As might be expected, the crossover to the Overnight Sensation TMM is a 2.5-way, which means that it's basically a 2-way, but with an extra large inductor before the 2nd woofer to push its FR lower so it doesn't interfere with the tweeter. (eg: it just plays the low notes)

The actual topology of this design actually closely mimics that of the original Overnight Sensations. It still uses a 2nd order with a "tank/elliptic" filter on the woofer, and a 3rd order with an L-pad on the tweeter.

Please note that there are two versions of the crossover. One uses the HiVi T20 tweeter, and the other uses the Dayton ND20FA-6. The sonic difference between the two is negligible; I offer both tweeter choices because I know that certain tweeters are only available in certain areas.





The impedance load of this design would probably be considered 4 Ohms nominal, however it just barely dips down there, and on the whole should be pretty benign for most solid state amps and home theater receivers. It's no worse than the OSMTM.

The good news is that since there is so much internal cabinet space, you can lay out the crossover pretty much however you want. Hell, you could even just lay out each filter exactly how it is on paper, if you are uncomfortable with [Nodal Analysis](#).

Listening Impressions

Everyone who's heard the original Overnight Sensations always thought to themselves, "Well, the bass is pretty good, especially for a speaker this small." So what happens when that same speaker isn't quite so small anymore? What kind of bass you think you could get? Yeah, the bass is pretty sweet on this. The F3 is around 39 Hz, but I voiced it with a just a hint of extra boom in the low bass because it kind of kept with the same sound as the rest of the Overnight Sensations family. You will be pleasantly surprised when a synth bass line comes in and you *feel* it. Personally, I wouldn't feel the need to use a sub with these, unless I was watching a lot of action movies. The mids and treble are right in-line with the rest of the Overnight Sensation family.

I only regret not putting this design together sooner, because over the years I've seen people wish to build something from the Overnight Sensation series, but wanted something floor standing, or with just some more bass to fill a medium-sized room. For everyday listening in a small space on a budget, I think this thing is a home run.