

Tuning Report

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After doing the initial tests of my drivers and the crossovers that I built for the manufacturer's technical specifications of the drivers I chose. I found that I added too much of a pad on my tweeter, and my woofer had a boost in its frequency response around 800Hz. After researching and finding out that 800Hz is the approximate size of my baffle, I decided to design a baffle step compensation circuit.

A couple of issues that I had with my baffle step compensation circuit are whether or not to route my tweeter circuitry before or after the compensation circuit. After trying both ways and adding another, but smaller, tweeter pad I decided on keeping the tweeter pad, and placing my tweeter circuitry after the baffle step circuitry.

The baffle step and pad helped my tweeter response, and shifting the crossover frequency down to 1.5kHz (from 2kHz). The woofer response still had a few random peaks after these changes, especially at 150Hz. I tried testing the passive radiator, adding excess amount of weights and even testing it with my hand on it. This peak is still there in the end response, so it is still a work in progress. The random dip at around 700Hz I was able to fix. I first tried moving around the woofer crossover, then modifying the baffle step compensation and even the tweeter pad. These tricks made the tweeter response worse, and did nothing to the dip. Then as an act of desperation I flipped the phase of my woofer, and the dip was fixed. It added a few minor peaks and dips, but nothing that would be overly noticeable.