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Passive RF
Layout Report

Because we are a team taking the course as a graduate-level course, we have already spent some amount of time learning how to generate and edit layouts to complete the Momentum simulations, so we did not particularly struggle with generating the layouts. The two issues we had were that we were under the incorrect assumption that once the ground plane is configured correctly, the Gerber files will generate properly, and that it would be easier to manufacture the designs when all the devices are on the same Gerber layout. The first assumption is wrong, as to properly machine the microwave devices. It is necessary to create a new polygon for each "shape" used in the design. Whether said "shape" is two halves of two coupled lines connected by a taper or the entire hybrid coupler design. The second assumption was wrong because after attempting to use the LPKF, we determined that doing each device individually was going to be easier. After correcting these misunderstandings, the generation of the Gerber files and the manufacturing of the designs were straightforward. See Figure 1. for the layout of the Chebyshev filter, Figure 2. for the layout of the branch line hybrid coupler, and Figure 3. for the layout of the coupled-line coupler.

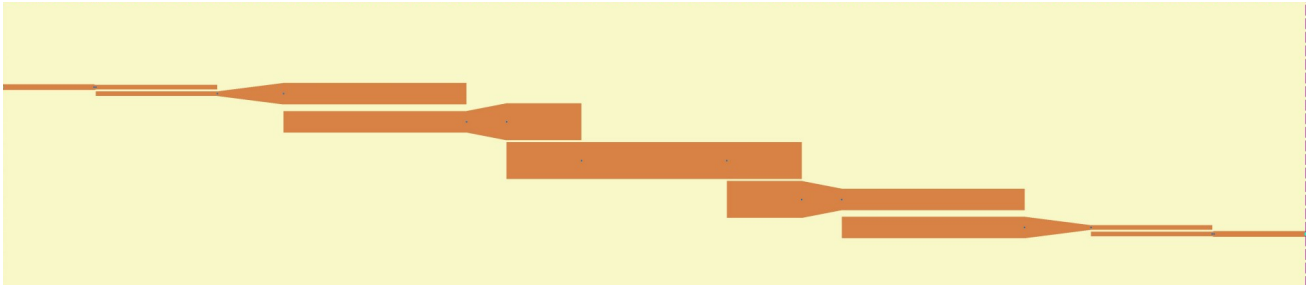

Figure 1. Layout for the Chebyshev filter.

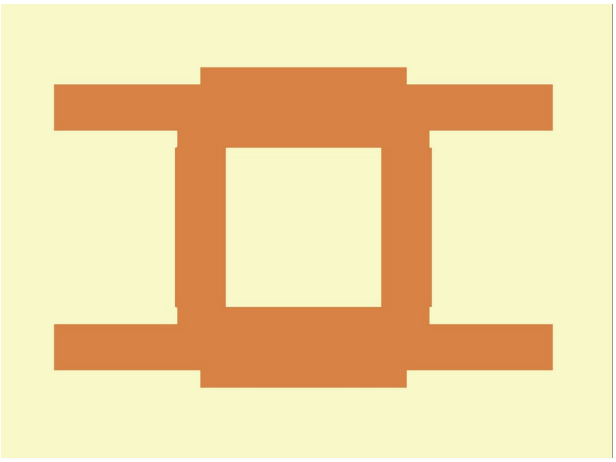

Figure 2. Layout for the Branchline Hybrid Coupler.

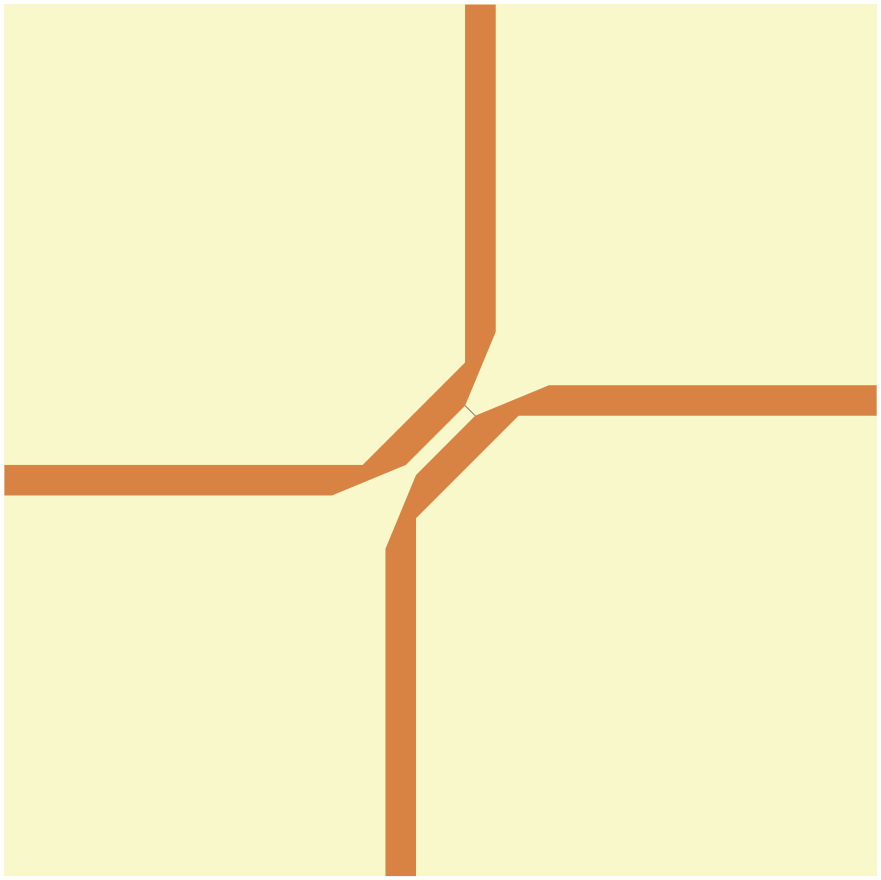

Figure 3. Layout for the Coupled-Line Coupler.