

**Lab #2**  
**Power Dividers**  
ECEn 464

**Introduction:** Power dividers find many important uses in microwave circuits. This lab will help you see what is required to use ADS for designing power divider circuits. Be sure to provide screen shots of the pertinent information and describe what you are doing in a systematic fashion.

**Laboratory objective:** Gain a better understanding of divider circuits by means of ADS.

**Laboratory exercises:**

**1. Tee Divider: Problem 7.5 from Pozar.**

Use ADS to simulate the T-junction divider described in Prob. 7.5 using ideal T-line components (not microstrip).

**2. Wilkinson divider:**

Design a microstrip Wilkinson power divider to operate at 6 GHz. The input and output impedances are 50 ohms. Simulate the performance in ADS over the frequency range between 5 and 7 GHz. Assume the substrate has a relative permittivity of 3.3 and thickness of 30 mils. Note that ADS has components that are called microstrip tees that should be used to obtain a proper design. In addition to the traditional equal power split case, design and simulate a power divider for a power ratio of  $3/2$  on the two output ports (see the design equations at the end of Section 7.3 of your text).

**Conclusion:** Make some general observations about what you learned from ADS simulations of dividers.