**EE 414 Lab 6 Report:**

**Band Pass Filter**

**Due: November 17, 2021**

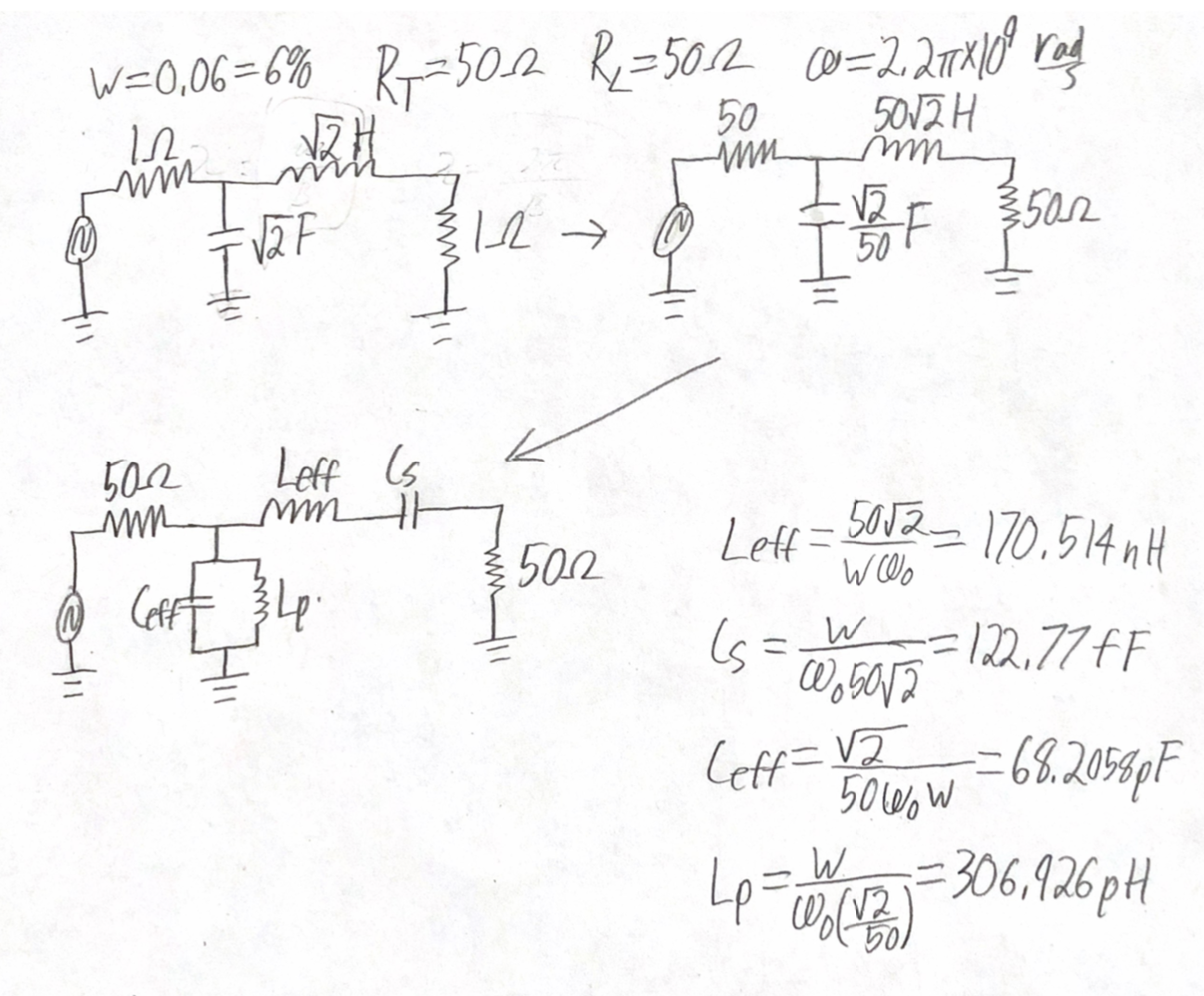
**By: Julio Torres, Johnathan Leisinger, and Prince Tshombe**

**Introduction**

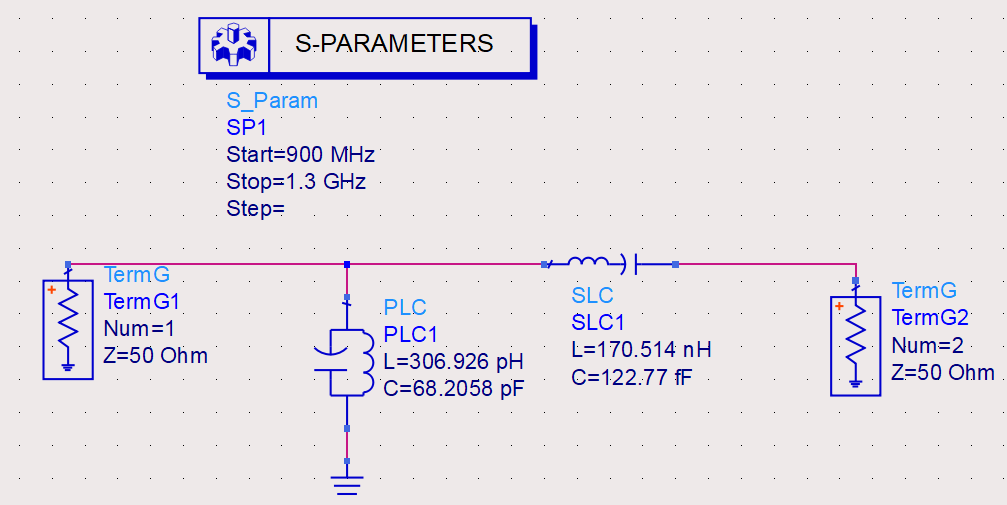
**For the 6th lab of the class, it was two weeks. We were told that we need to design a band pass filter.**

**Part 1: Ideal Lumped Element Filters**

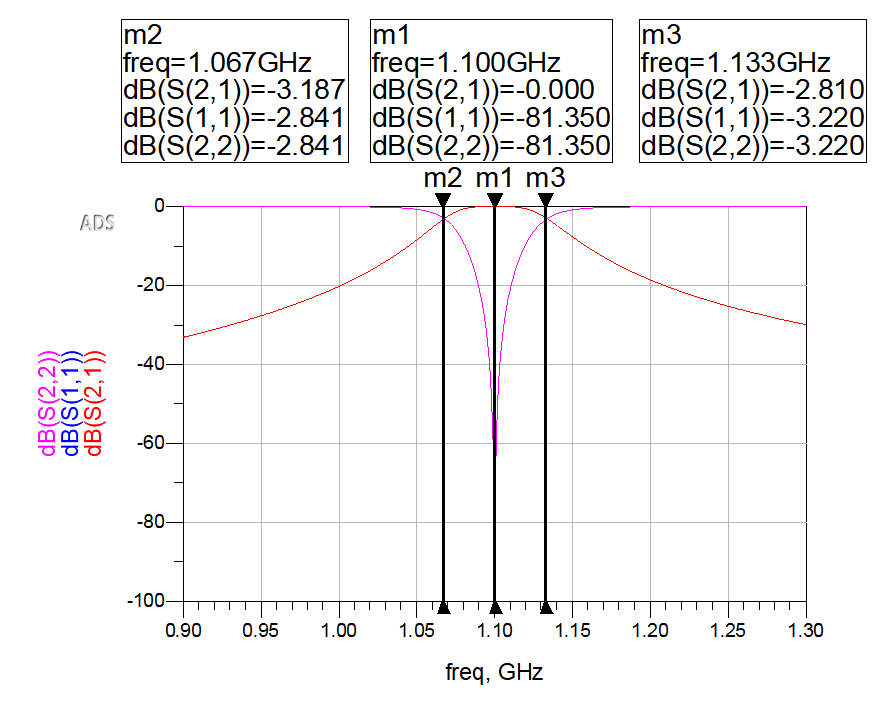
**Ideal Filter Calculations**

****

**Schematic of the Ideal Bandpass Filter**

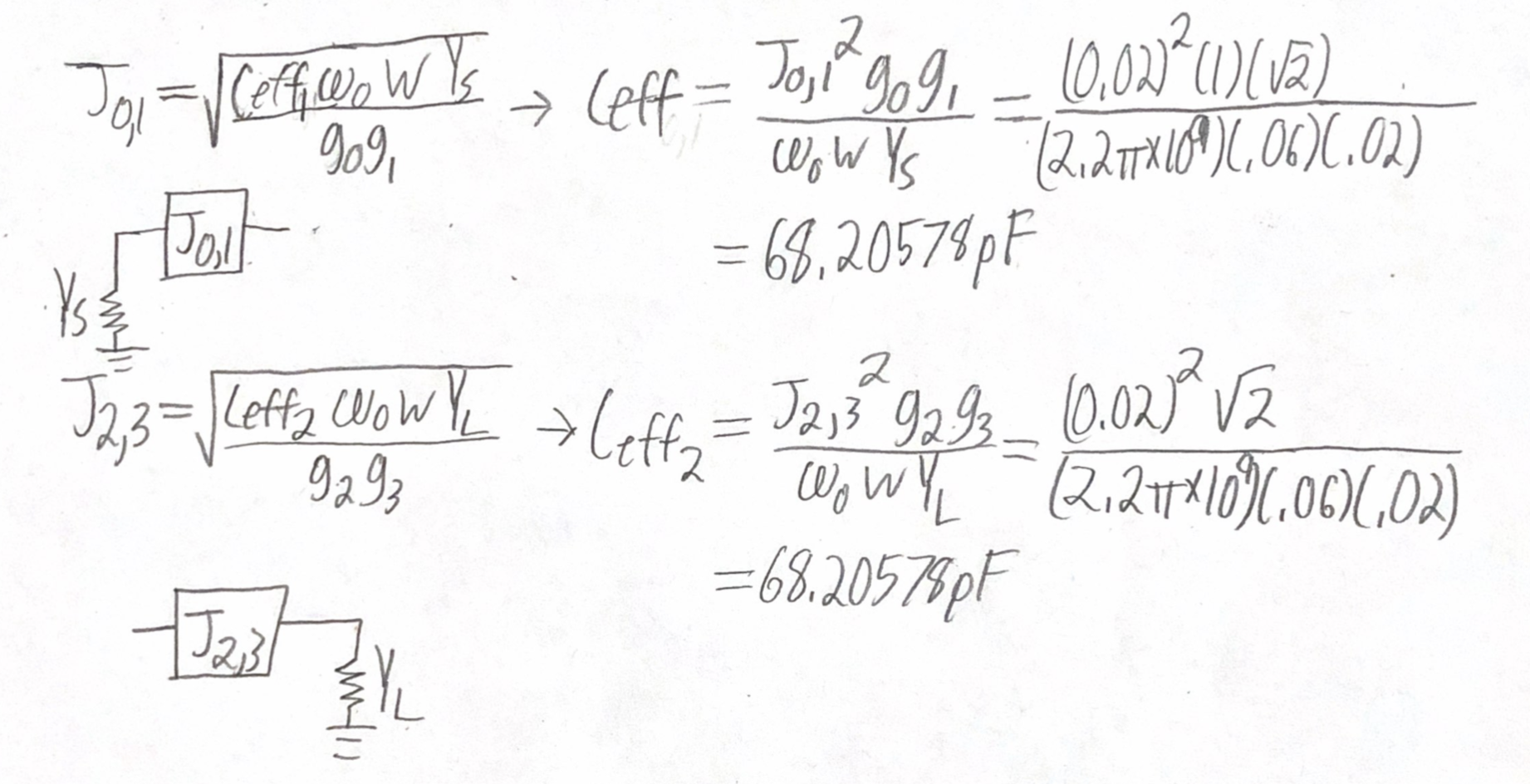
****

**S21, S11, and S22 of the ideal filter:**

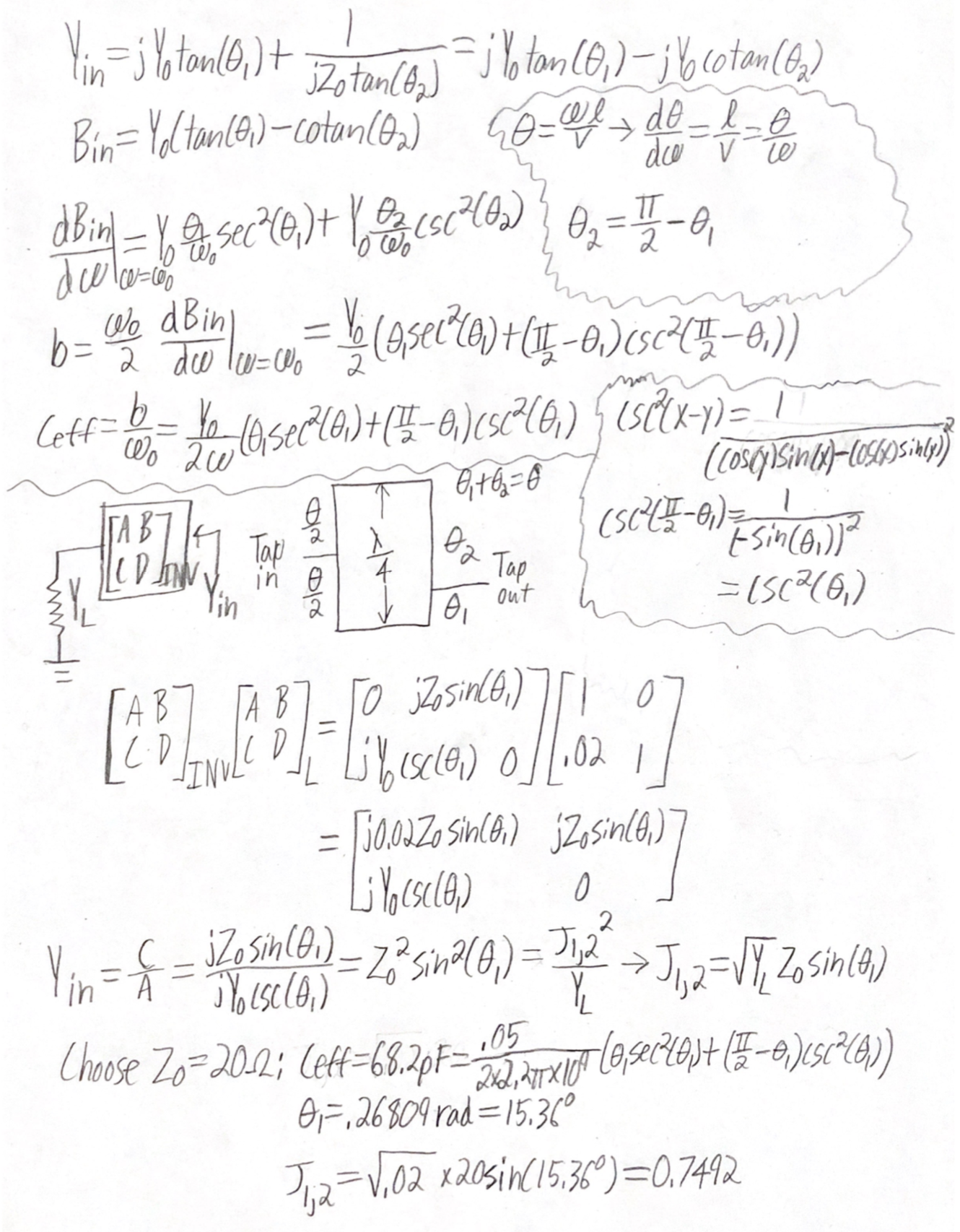
****

**Part 2: Ideal Lumped Element Filters**

**Derivation of Ceff**

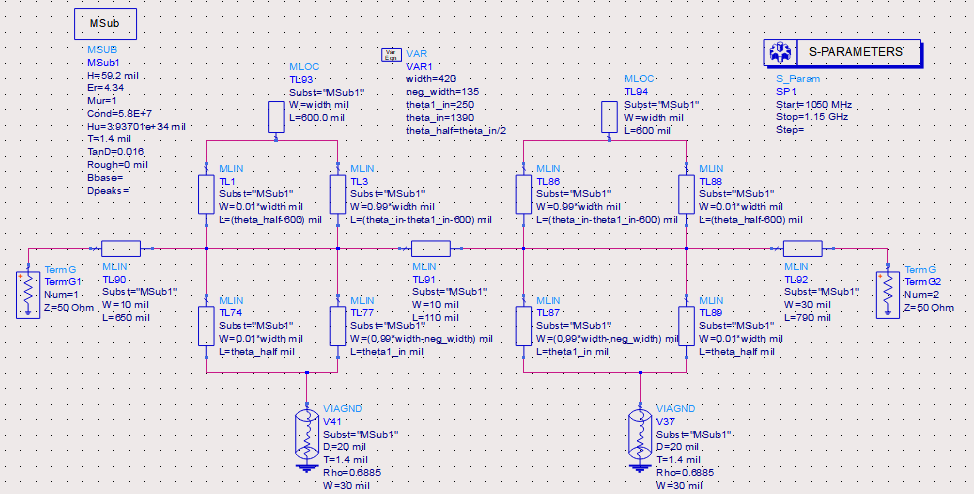
****

**J-inverted Design and Derivations**

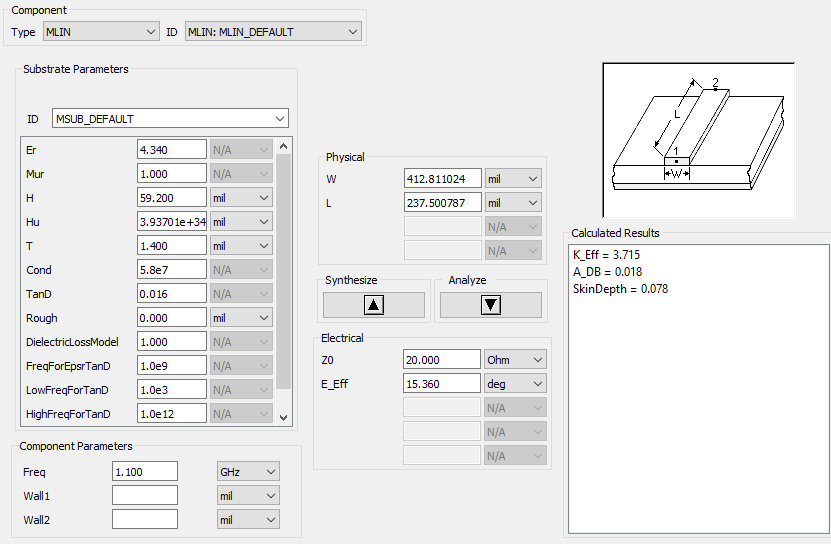
****

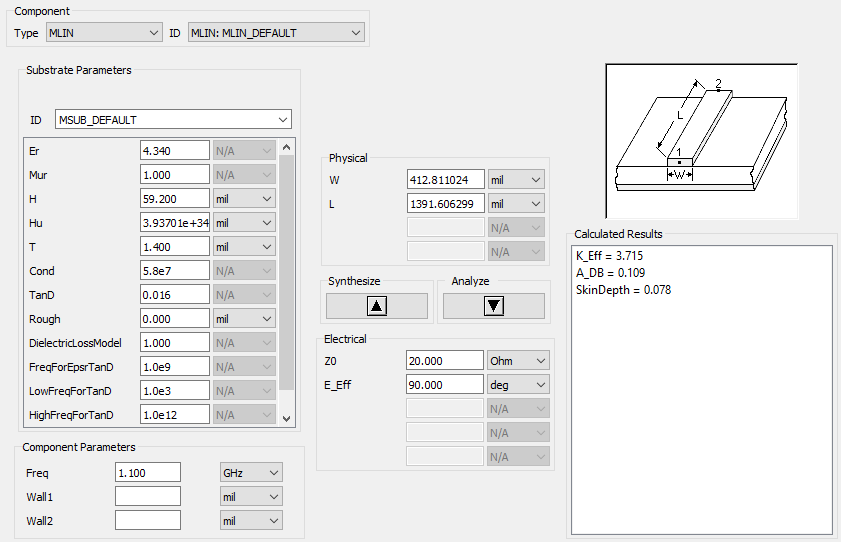
**Part 3: Filter Implementation**

**Schematic of the transmission implementation:**

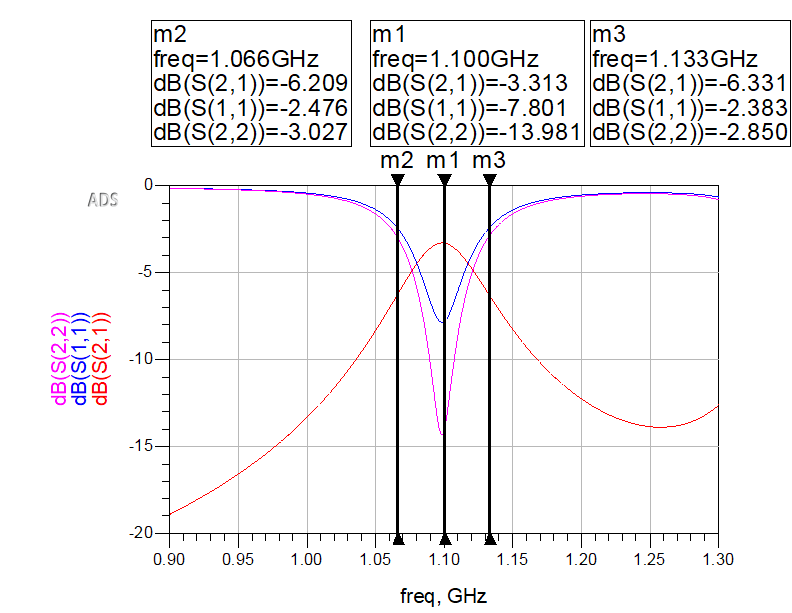
****

**LineCalc Calculations:**

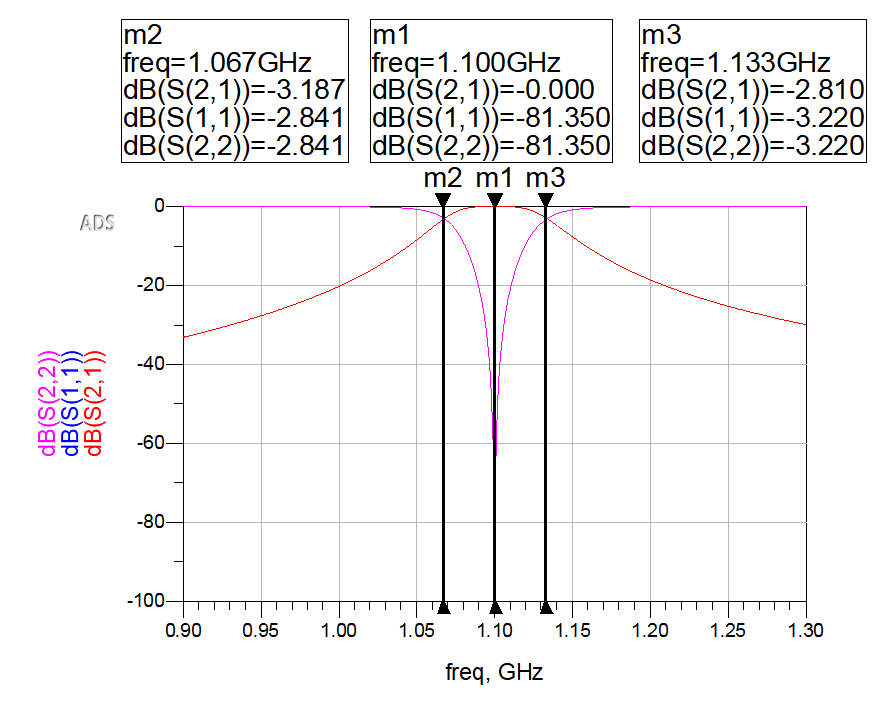
****

****

**S-parameter simulation:**

****

**Vs Ideal S-Parameter Simulation:**

****