Faculty Member: Mr.Ahsan Azhar **Dated: January 03, 2017**

Semester:_____7th _____ **Section: _____A_____**

Department of Electrical Engineering

EE-342 Microwave Engineering

LABORATORY EXERCISE – 11

Lab 11 : Design & Simulation of stepped impedance microstrip low pass filter using ADS simulation tool

(CLO3 and CLO6)a

S. No	Name	Reg. no.	Marks			
			Lab Work 5	Report 10	Viva 10	Total 25
1	Syed Muhammad Ali Qasim Naqvi	5011				
2	Uzair Akbar	4584				
3	Muhammad Saad Qureshi	05804				

I. Objective

In this LAB we learn how to design a stepped impedance Low Pass Filter (LPF) at a given frequency and how to generate its layout for fabrication using ADS Schematic and Momentum.

II. System Model

The filter to be designed is a stepped impedance Low Pass Filter (LPF). Such a filter uses alternating sections of very high and very low characteristic impedance lines. Despite not very good electrical performance, such filters are preferred due to easy design and small space requirements.

The filter is to be designed at **2.5 GHz cutoff frequency** with more than **20 dB insertion loss at 4 GHz**. The filter **characteristic impedance is 50 Ohm** with the **highest practical line impedance equal to 120 Ohm** and the **lowest equal to 20 Ohm**.

III. Results

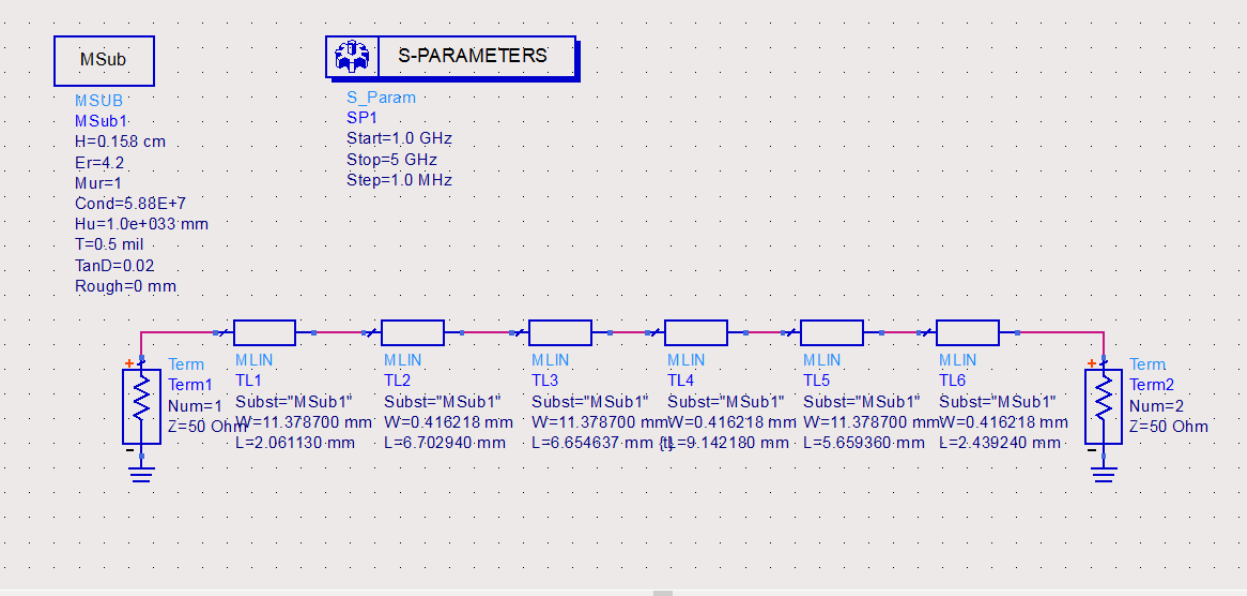

Figure 1 Schematic for the Stepped Impedance LPF

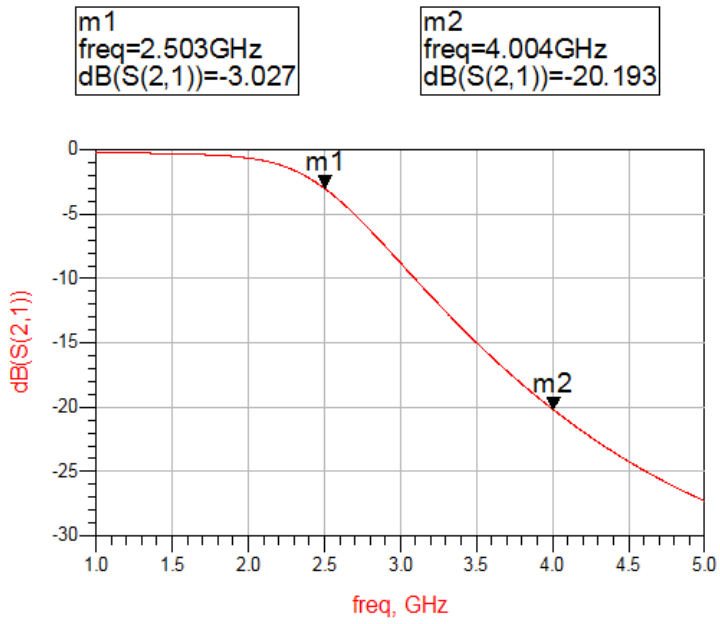

Figure 2 S21 for the Stepped Impedance LPF

IV. Conclusion

In this LAB we learned about the stepped impedance Low Pass Filter (LPF). We learned how to design one at 2.5 GHz cutoff frequency and simulate it using ADS Schematic software. We also learned how to generate the layout fabrication for our design.