

III. SIMULATION AND MEASUREMENT RESULTS

The antenna design was fabricated and measured in anechoic chamber in Electrical Engineering Department, Faculty of Engineering, Universitas Indonesia. The measurement results compared with the simulation results are shown in Fig 3 to Fig 5. Fig 3 shows the return loss result of the antenna.

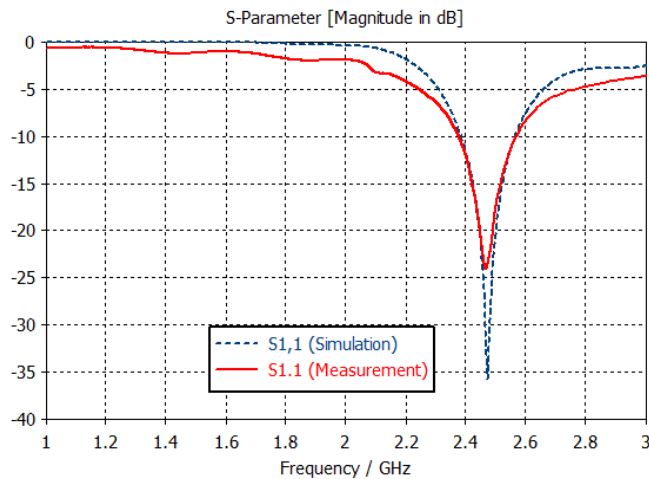


Fig 3. Simulated and measured return loss of proposed antenna

The measured impedance bandwidth with return loss less than -10 dB is from 2.377 GHz to 2.57 GHz. This frequency covers the WLAN band (2.400-2.485) with the bandwidth 193 MHz.

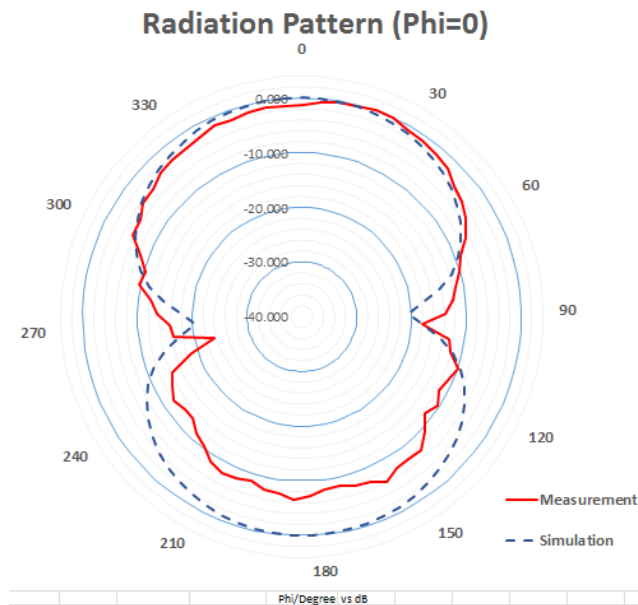


Fig 4. Radiation Pattern (Phi = 0)

Radiation Pattern (Phi=90)

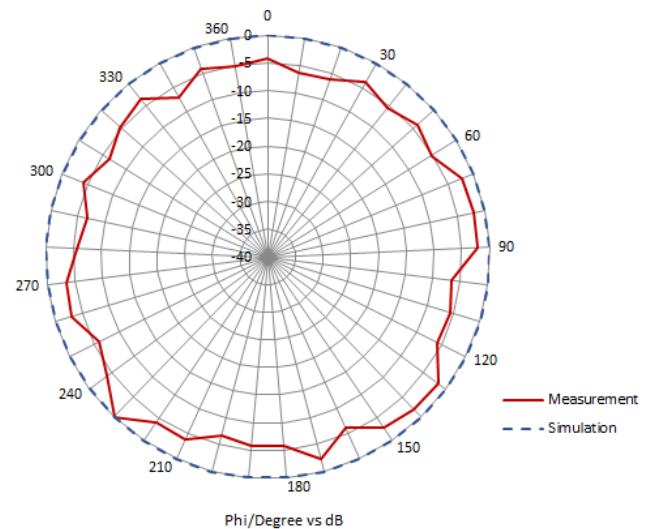


Fig 5 . Radiation Pattern (Phi = 90)

Fig. 4 and Fig. 5 shows the radiation pattern between the simulation and measurement of the antenna at frequency 2.45 GHz. The result shows that the antenna has omnidirectional radiation pattern. In addition, the simulated antenna gain is 1.63 dB, while the measurement antenna gain is 1.52 dB.

The slight difference between simulation and measurement result is due to imperfect fabrication of the antenna and additional coaxial line is used in the measurement, which was neglected in the simulation.

IV. CONCLUSION

A compact folded dipole microstrip antenna for 2.45 GHz application has been designed, fabricated and measured. The measured result of the antenna shows that the antenna has impedance bandwidth of 193 MHz, return loss -24.10dB at 2.46 GHz and gain of 1.52 dB. The antenna radiation pattern shows omnidirectional characteristic.

REFERENCES

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