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DESIGN AND ANALYSIS OF DUAL BAND H SHAPED RECTANGULAR MICROSTRIP PATCH ANTENNA

Saima Tabassum Mansoori [1], Prof. Rahul Koshta [2]
[1] M.Tech (Student), Microwave Engineering, Department of Electronics & Communication Engineering, S.R.I.T. Jabalpur (M.P.), India
[2] Professor, Department of Electronics & Communication Engineering, S.R.I.T. Jabalpur (M.P.), India

Abstract

In this paper we are study about wireless antenna, which are used for wireless communication, the wireless communication system are having important role in service requirement. We are design and analyzed the Dual Band type H Shaped Rectangular Microstrip Patch Antenna and S-parameters are finding out using of various Substrate height (H).

Keywords: Simulation; Rectangular Microstrip Patch Antenna; S- Parameter.

1. Introduction

The most common type of microstrip antenna is the patch antenna. Antennas using patches as constitutive elements in an array are also possible.
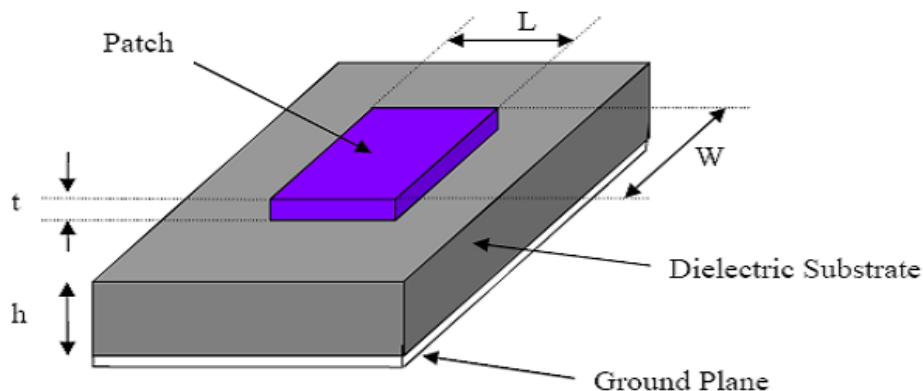

Figure 1: Microstrip antenna

2. Rectangular, Single Polarization Microstrip Antennas

The figure below shows the geometry of the rectangular microstrip antenna, not including the ground plane and dielectric which would be underneath.
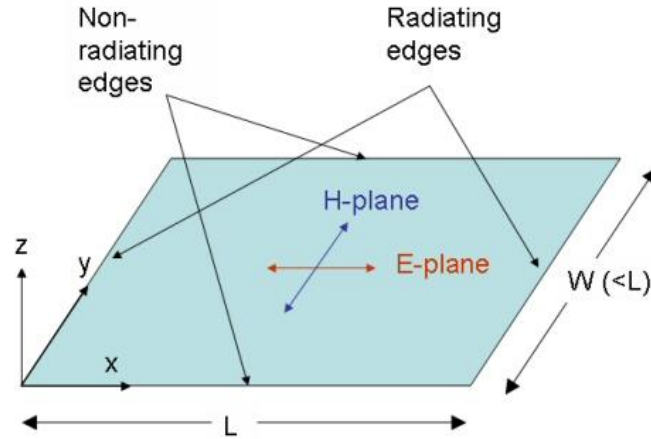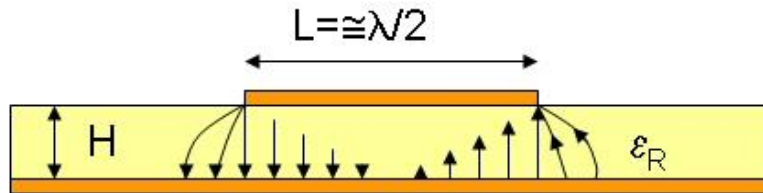

Figure 2: single polarization microstrip antenna

Figure 3: side view of single polarization microstrip antenna

3. Results and Discussion
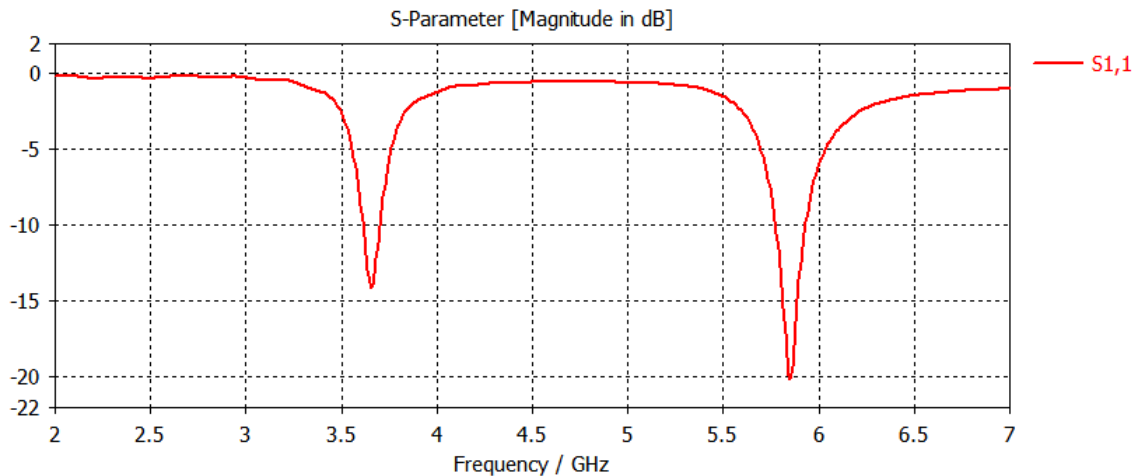
3.1. Substrate height (H) are 3.2mm

Figure 4: S-Parameter, Substrate height (H) are 3.2mm

The antenna has the return loss of -14 dB at the 3.655 GHz and -20 dB at 5.851 GHz . By using of Substrate height (H) = 3.2 mm.

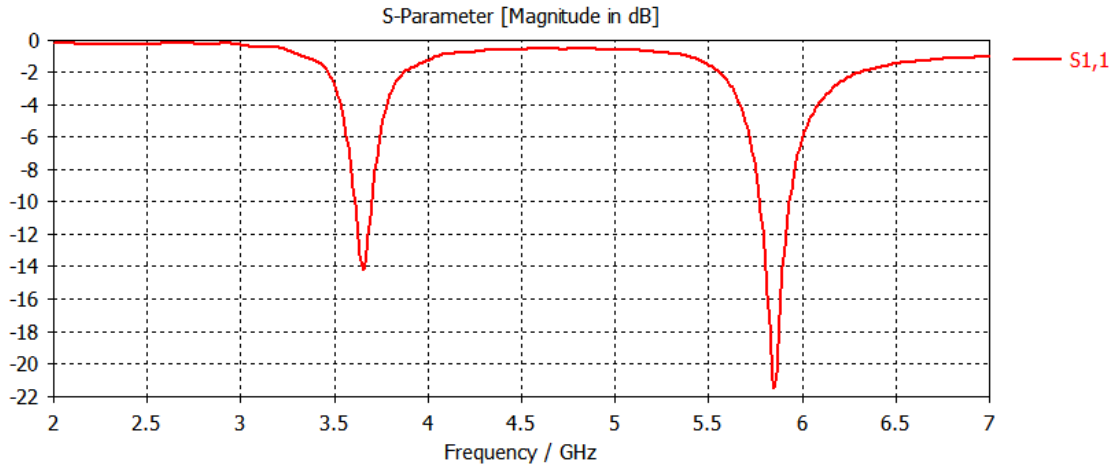### 3.2. Substrate height (H) are 3.25mm

Figure 5: S-Parameter, Substrate height (H) are 3.25mm

The antenna has the return loss of -14 dB at the 3.655 GHz and -21.5 dB at 5.851 GHz. By using of Substrate height (H) = 3.25 mm.
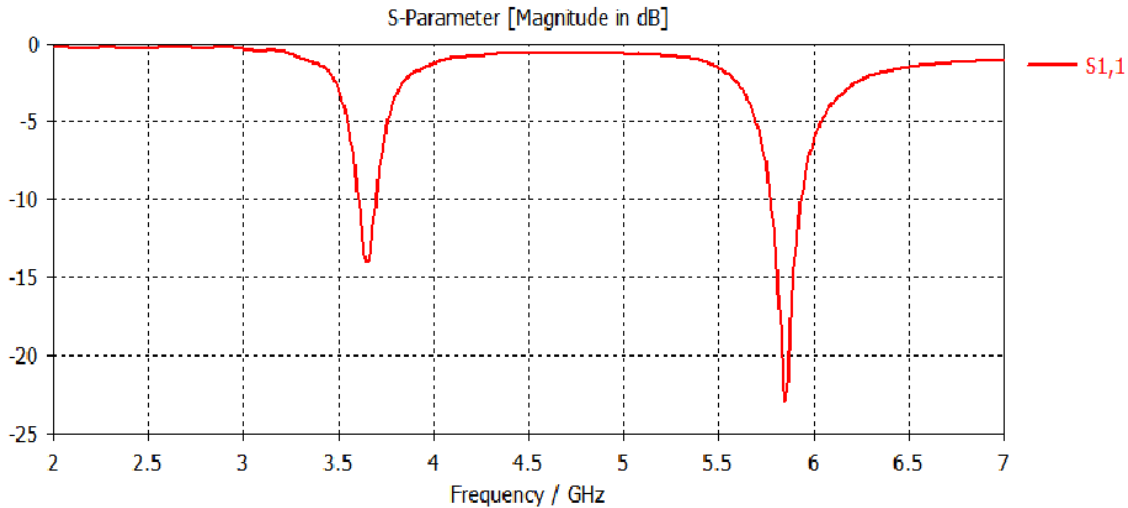
3.3. Substrate height (H) are 3.3mm

Figure 6: S-Parameter, Substrate height (H) are 3.3mm

The antenna has the return loss of -14 dB at the 3.655 GHz and -23 dB at 5.851 GHz. By using of Substrate height (H) = 3.3 mm.

3.4. Substrate height (H) are 3.35mm

Figure 7: S-Parameter, Substrate height (H) are 3.35mm

The antenna has the return loss of -14 dB at the 3.655 GHz and -24 dB at 5.851 GHz. By using of Substrate height (H) = 3.35 mm.
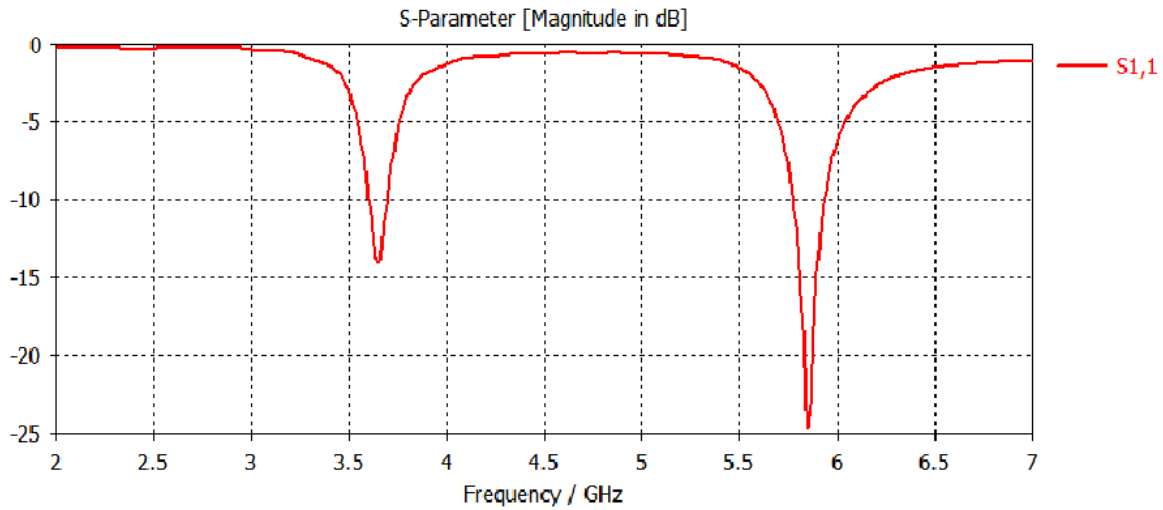
3.5. Substrate height (H) are 3.4mm

Figure 8: S-Parameter, Substrate height (H) are 3.4mm

The antenna has the return loss of -14 dB at the 3.655 GHz and -27 dB at 5.851 GHz. By using of Substrate height (H) = 3.4 mm.

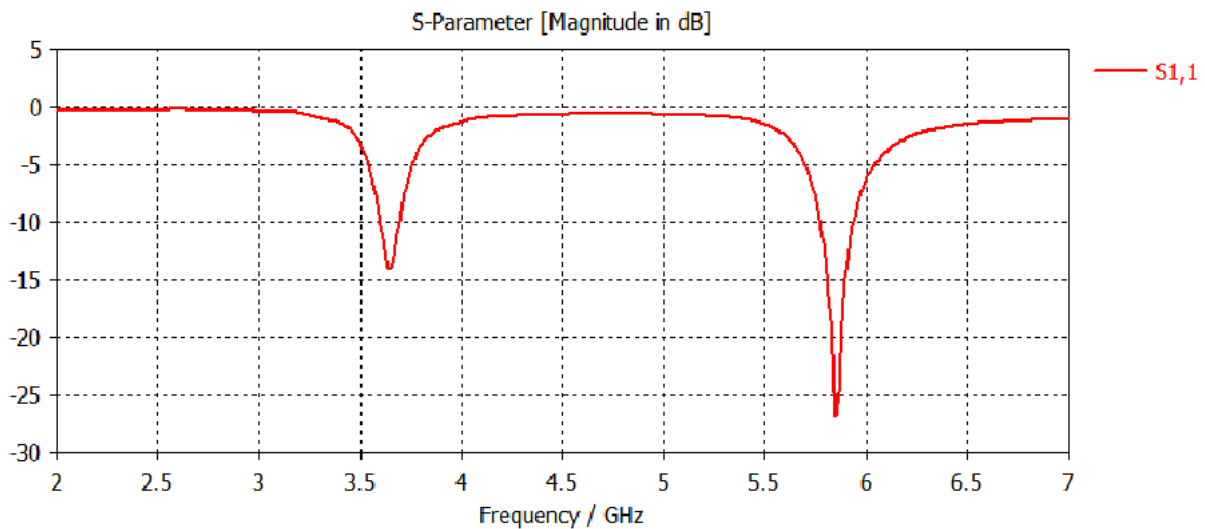### 3.6. Substrate height (H) are 3.45mm

Figure 9: S-Parameter, Substrate height (H) are 3.45mm

The antenna has the return loss of -14 dB at the 3.655 GHz and -29 dB at 5.851 GHz. By using of Substrate height (H) = 3.45 mm.

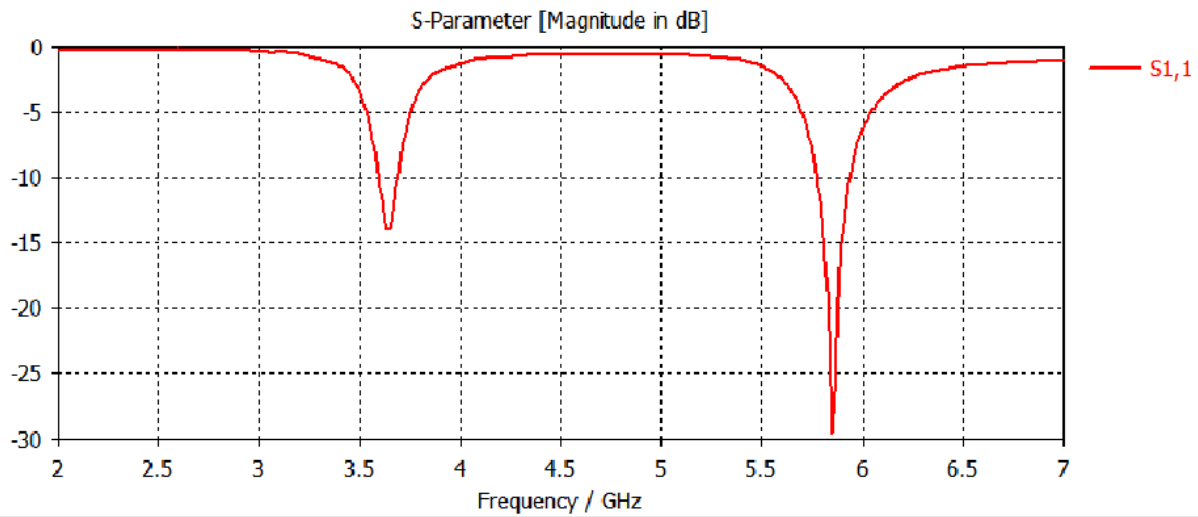### 3.7. Substrate height (H) are 3.5mm

Figure 10: S-Parameter, Substrate height (H) are 3.5mm

The antenna has the return loss of -14 dB at the 3.655 GHz and -34 dB at 5.851 GHz. By using of Substrate height (H) = 3.5 mm.
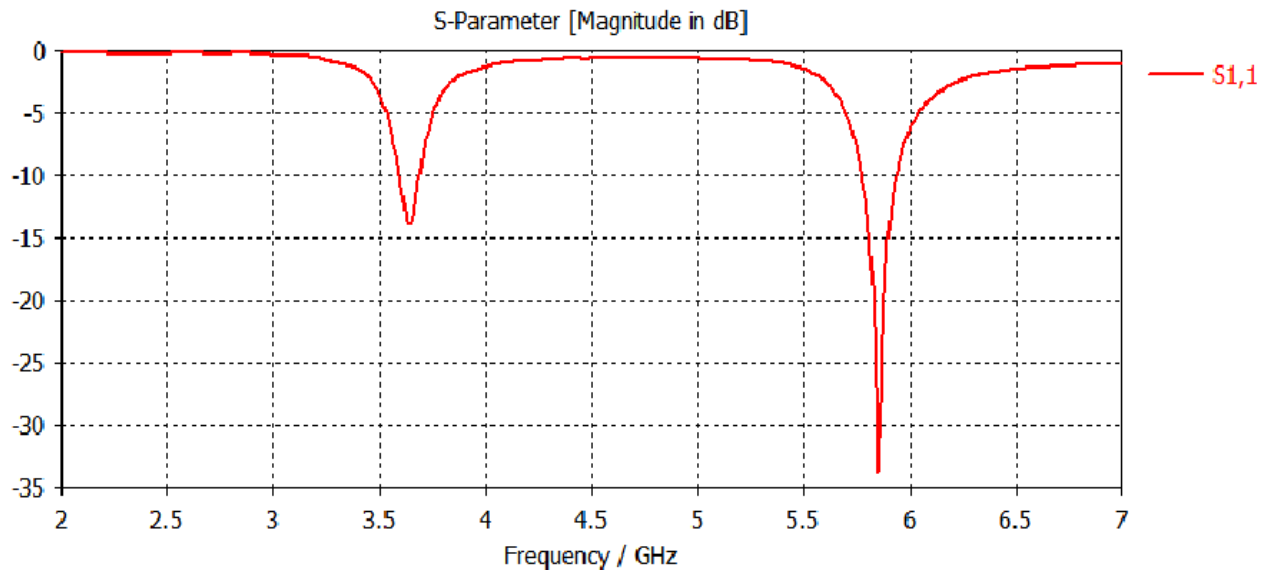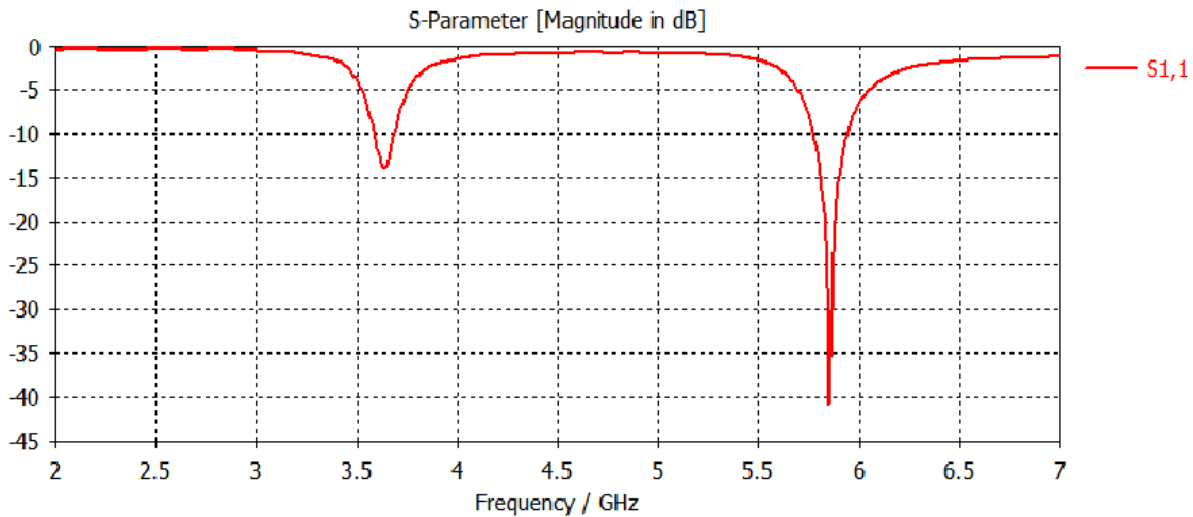
3.8 Substrate height (H) are 3.55mm

Figure 11: S-Parameter, Substrate height (H) are 3.55mm

The antenna has the return loss of -14 dB at the 3.655 GHz and -40.5 dB at 5.851 GHz. By using of Substrate height (H) = 3.55 mm.

4. Conclusion

The antenna has the return loss of -14 dB at the 3.655 GHz and -40.5 dB at 5.851 GHz . By using of Substrate height (H) = 3.55 mm. Antenna design has turned to focus on wide multiband Some easy tuning steps to achieve dual-band operation. These type antennas are widely used in communication system.

References

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