

Wideband Electrically Small Monopole antenna



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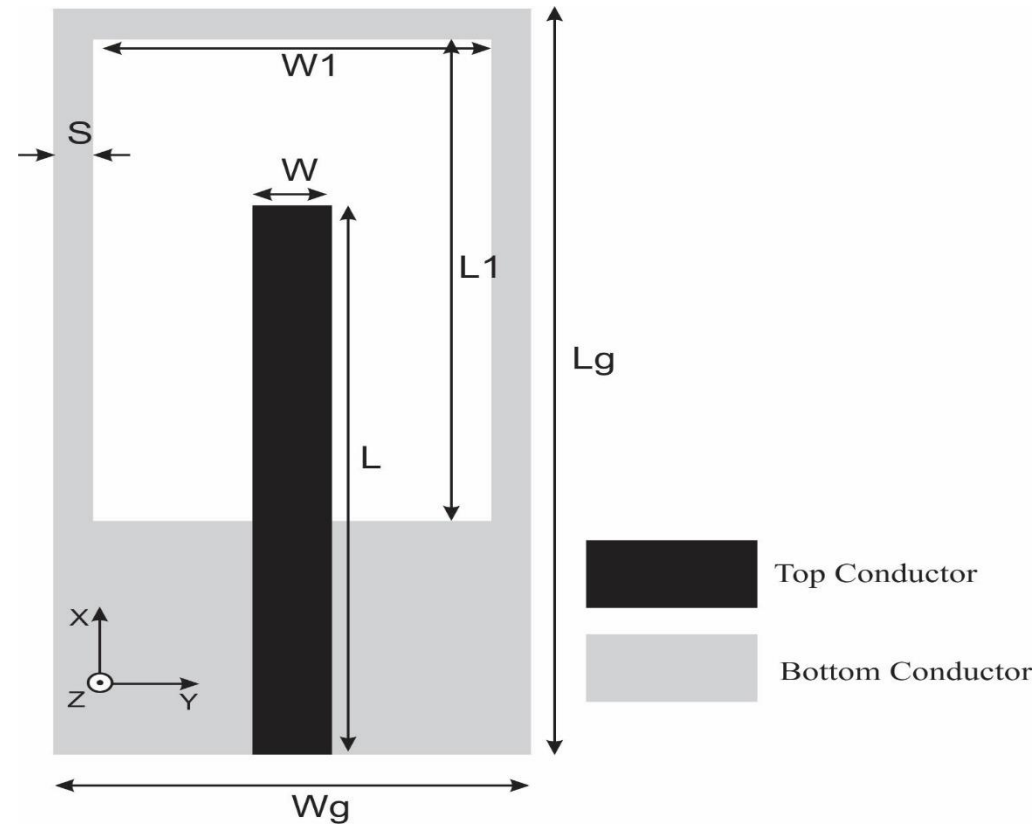
Outline

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- ❖ Antenna Geometry
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Introduction

- Higher performance wireless systems demanded the developments of antenna systems that are electrically small in size, light weight and suitable to the physical and electromagnetic environments in which they operate
- Moreover wideband antennas are preferred more in the communication scenario since they have multiple applications [1,2]

Geometry of the antenna

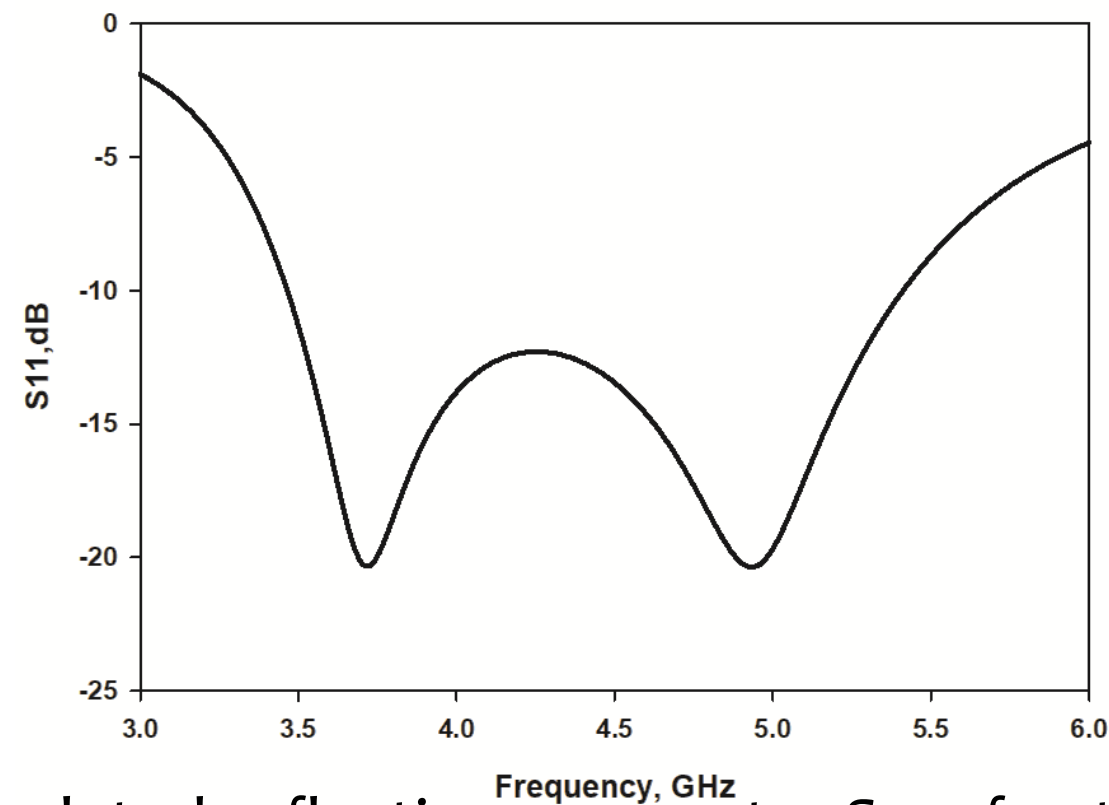


Geometry of the proposed antenna. Dimensions: $L=15$, $W=3$, $L_1=15$, $W_1=9$, $L_g=25$, $W_g=10$, $S=0.5$.

Results and Discussions

All simulations are carried out with Ansoft HFSS simulation software.

Fabrication of the antenna is performed using photolithography technique.

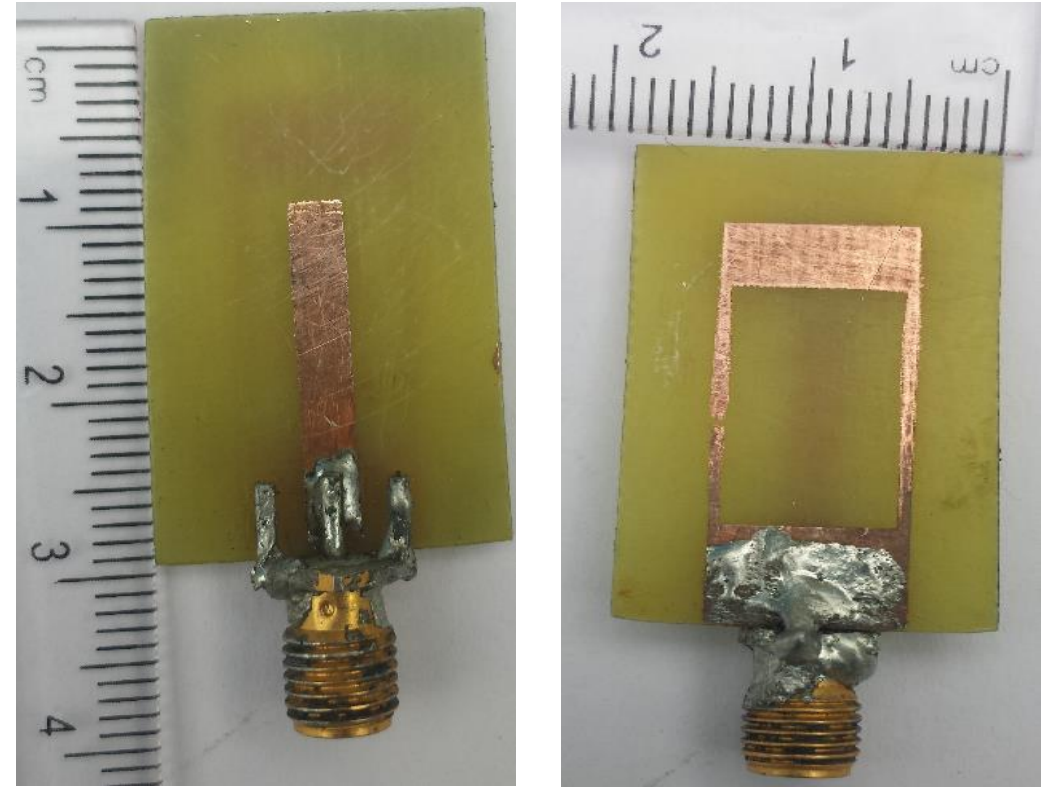


The simulated reflection parameter S11 of antenna

Results and Discussions

- The simulated results show that the antenna has a -10 dB band width of 2 GHz ranging from 3.45 GHz to 5.45 GHz with resonances centered at 3.75 GHz and 4.9 GHz respectively which is wide enough to cover the 3.6GHz and 5GHz WLAN frequency bands.

Photograph of the antenna



Conclusions

- A simple electrically small, wideband ground modified monopole antenna for WLAN application is presented
- The antenna has simple structure with less geometrical parameters and is fabricated on a low cost substrate.
- All these features make the proposed antenna a good and efficient candidate for emerging wideband wireless applications.



Acknowledgements

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References

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