Abstract

This paper reports simulated performance analysis of microstrip patch antenna with conducting/radiating patch thickness less than one skin depth (SK) in terms of antenna bandwidth. For performance analysis antenna is designed and modeled for 5.8 GHz applications like WLAN, for which conducting metal copper’s fraction of skin depth lies in the nano thickness (1 to 100 nm) range. In this study IE3D industrial standard electromagnetic
Simulator is used. The fractional skin depth thickness radiating patch is excited through a feeding mechanism known as electromagnetically coupled or proximity feed. The simulation result shows increased bandwidth. The improvement in bandwidth makes antenna more tolerant to variations in fabrication without compromising the operation of the antenna.

References

- Bhartia, B. , and Bahl, I. J. 1980, Microstrip Antennas, USA

Index Terms

Computer Science Wireless Networks

Keywords

Microstrip Patch Antenna Skin Effect Depth Nano Film Bandwidth Nanotechnology