

Multiband Compact mmW Antenna for 5G Smart Phones

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Abstract: The design of a millimeter wave (mmW) antenna for the 5G mobile applications is presented in this paper. designed antenna has dimensions of $10 \times 10 \times 0.245$ mm³. This includes the copper ground plane. The resonance of the proposed mmW antenna lies within the range of 33 GHz and 43 GHz. These frequency bands are covering the 5G proposed band in terms of the signal speed, data transmission, and high spectral efficiencies. High-frequency structure stimulation (HFSS) software is used to simulate the proposed 5G antenna including the characteristics of S-parameters, gain, and radiation pattern. Simulation results show that the return loss at resonant frequencies goes - 22 dB, which satisfies the requirements of 5G mobile technology.

Keywords: 5G networks Antennas Millimeter waves Multi- band Smartphone

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