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| **Title:** | A Single-Band 28.5GHz Rectangular Microstrip Patch Antenna for 5G Communications Technology | | |
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| **Abstract:** |  |
| The popularity, demand, and usefulness of 5G Communication Systems are rapidly increasing. Since the future of 5G Communication systems requires higher gain and efficiency, a rectangular microstrip patch antenna has been designed in this paper. The proposed model has a better return loss and a healthy efficiency characteristic. The operating frequency of 28.5 GHz (Ka-band) was used here, one of the prominent frequency bands for 5G communication. The Patch's architectural structure is 7.885 mm\*8.935 mm\*0.5 mm, with the help of a return loss of -48.309 dB, a gain of 7.425 dB, VSWR of 1.007129, and directivity of 8.141 dBi have been achieved in the proposed model. Also, the efficiency of 91.16%, Bandwidth of 1.2 GHz, and a surface current of 760.4 A/m were successfully achieved, which is also helpful for faster 5G communication. Considering all these mentioned parameters, the designed antenna can be suitable for 5G communication technology soon. | |