

HEXAGONAL PLANAR ANTENNA WITH RECTANGULAR SHAPED SLOT

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ABSTRACT

Nowadays, there are many shaped of antenna were designed for variety of applications. One of those applications is wireless local area network (WLAN) which has become popular for this era. An antenna design should be low cost and easy to implement. The performance of the antenna is analyzed based on the parameters of the antenna. Therefore, this project is an attempt to enhance the performance of antenna so that it will produce a good quality antenna for WLAN applications. This project involves theoretical study, designing, simulation, analysis of simulation results and fabricated antenna. A new design of hexagonal planar antenna with rectangular shaped slot was designed. The rectangular shaped slot was chosen to differentiate this antenna from the others hexagonal antenna. With only quarter length of ground plane, this antenna is printed onto FR4 substrate. The dielectric constant for this substrate is 5.0. This antenna operates at frequency of 5 GHz which is suitable for WLAN applications. This antenna has a compact area of $19 \times 19 \text{ mm}^2$ which offers lower loss and minimum size. This antenna is simulated by using CST Microwave Studio software and the results were analyzed in term of return loss, gain, and directivity and radiation pattern. The feeder line was designed to be on the same plane with antenna. At the end of this project, it is expected that this antenna is improve in term of return loss and radiation pattern.

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