

BOWTIE MICROSTRIP ANTENNA WITH POLYGONAL SLOTS AT FREQUENCY OF 6.2GHZ

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ABSTRACT

This paper proposed to apply polygonal slots into bowtie microstrip antenna structure. The main purpose of integrating polygonal slots into bowtie structure is to increase the performance of the antenna in terms of return loss and VSWR. This antenna was design to operate at frequency 6.2 GHz on FR4 with substrate thickness of 1.6 and substrate permittivity, ϵ_r of 4.3. The antenna designs were divided into two which is conventional bowtie antenna and bowtie antenna with polygonal slots. The simulation conducted using Computer Simulation Technology (CST) software and the antennas were measured using VNA to compare with simulation result. The simulation results of bowtie antenna with slots were improved from conventional bowtie about 6dB for return loss and 0.0347 for VSWR, meanwhile the measurement result also improved around 9dB for return loss and 0.1278 for VSWR. The result shows that by integrating polygonal slots into bowtie antenna structure, the antenna have better return loss and VSWR. The antenna can be improved by replaced a slots with different shape, size and even fractal.

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