

**HEXAGONAL PATCH SLIT-BACK ANTENNA FOR WIMAX
APPLICATION**

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ABSTRACT

This paper presents the simulation and measurement result of microstrip Hexagonal Patch Slit-back Antenna. It operates at 2.5GHz which is for WiMAX applications. Hexagonal patch slit-back antenna was designed and simulated using Computer Simulation Technology 2009 (CST) software. The proposed antenna was fed by quarter-wavelength transmission length for impedance matching purpose with Defected Ground Structure (DGS) at the background of the antenna. The purpose of designing antenna with defected ground surface is to increase the performance of the antenna. In this project, the performance of the antenna increased in term of return loss by adding a single slit at ground as a defected ground structure. The Hexagonal Patch Slit-back Antenna was fabricated on Fiber Reinforced (FR-4) with dielectric constant of 5.0 and thickness of 1.6mm respectively. The proposed antenna was measured in the laboratory using Vector Network Analyzer (VNA). The performance of the antenna was analyzed in terms of return loss and Voltage Standing Wave Ratio (VSWR). The results show the value of return loss is lower than -20 and Voltage Standing Wave Ratio (VSWR) is lower than 2.

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