Design and Analysis of a dual-band Printed Antenna for Internet of Things (IoT) application

*Abstract*— Wireless technology is increasingly influenced by the advanced technological development of antenna. With the rapid expansion of Internet of Things ( IoT) application in the contemporary communication networks, the demand for small printed antennas is increasing, due to their small size and ease of design and manufacture to suit their various application. In this paper, the antenna is designed which is operating at two different frequency band 2.40GHz and 5.78GHz. The design parameters of the antenna have been calculate using the transmission line model, and an antenna design program has been used for the simulation process is HFSS ( High frequency simulator structure) tool, which is based on Finite Element Method (FEM). In this work, the proposed slot dual band patch antenna is implemented using FR4 substrate material with thickness 1.6mm and relative permittivity 4.4. The size of the proposed antenna is just (28 × 27.7mm). The proposed antenna has Omni-directional radiation pattern on most of the operating band. The dual band antenna is designed by adding a slot to the top of the radiated patch. The antenna has been simulated and fabricated by this results. Therefore, the proposed dual- band antenna shows higher performance, which is suitable (IoT) Internet of Things applications. The measurements are found to be in good accordance with the simulated results.