

# PARAMETRIC PERFORMANCE SIMULATION OF A PROXIMITY-COUPLED FED MICROSTRIP DIPOLE ARRAY

## Abstract

This work reports on the performance simulation of two element units of microstrip dipole array antennas for WLAN application. Simulation is done using two different simulation techniques, the circuit model (CM) derived from the Transmission Line Model (TLM), and is compared with another simulation set using the Method of Moments (MoM). Both methods are simulated using Microwave Office. The basic microstrip dipole antenna, which is accurately modeled in a previous work, is adapted, by combining two basic element units. Both simulation sets of MoM and CM are evaluated to determine their level of variation in terms of return loss ( $S_{11}$ ), bandwidth and resonant frequency ( $f_{res}$ ). The MoM simulated structure is then fabricated and measured to determine the degree of distinction between hardware and the two simulation sets. MoM simulation set is also simulated over different dimensions to determine the level of variation generated by the alterations. Details of the proposed antenna design and simulation results for 2.45 GHz WLAN band are presented and deliberated.