

ABSTRACT

The purpose of this thesis is to investigate the possibility and implementation of dual frequency antennas using combinations of wire antennas. Monopole-Monopole antenna and Helical-Helical antenna configurations are proposed. Typical GSM-900 MHz and DCS-1800 MHz frequency bands of operation are chosen.

Several geometries of the combinations with different parameters are analyzed numerically using SuperNEC program, which is based on the method of moments, to examine their suitability for dual band operation. Using the parameters obtained during the simulation, two prototype antennas were constructed and tested. VSWR, Far-field patterns and antenna's gain were measured over a wide range of frequencies. The measured results agree well with the simulation results.

Because of their simplicity, omni-directional radiation pattern and small size, the proposed antennas are expected to find good applications in cellular and mobile communications.