

ABSTRACT

Long Term Evolution (LTE) is an advanced evolution in mobile network standards determined by the 3rd Generation Partnership Project (3GPP). The LTE technology offers a higher data rate performance than the previous technologies. This technology also uses the concept of Multiple Input Multiple Output (MIMO) which allows the antenna to have a better capacity and reliability. The Multi-band antennas are widely used now because of their more practical function, therefore the space used in the system is minimized.

This Final Project is designed and realized the 2x2 MIMO microstrip antenna with a rectangular patch which is able to work on 1.8 GHz and 2.1 GHz Long Term Evolution (LTE) frequencies. In the inclusion, a microstrip line feed is used and in order to obtain two different resonant frequencies, a slot is applied to the antenna patch.

The results of the 2x2 MIMO antenna after being fabricated and measured have a VSWR value ≤ 2 in the bandwidth of ≥ 60 MHz, gain ≥ 2.82 DBi with a bidirectional radiation pattern along with the elliptical polarization, and a mutual coupling values of ≤ -26.33 dB.

Keywords : Microstrip Antenna, Dual Band, LTE, MIMO, Rectangular Patch.