ABSTRACT

Currently, the demand for the emergence of new technologies and standards in 5G is a problem that must be overcome. MIMO technology allows the use of more than one antenna on the sender or receiver. The technology is emerging as a viable solution for faster and larger data transfer needs, as well as addressing multipath fading on 5G. In this final project, a microstrip type antenna will be designed using the 2x1 MIMO method with the addition of an equilateral inverted triangle-shaped slot method and an equilateral square-shaped DGS triangular patch intended for 5G using a working frequency at 2.6 GHz (Middle Band). With a target of achieving return loss ≤ -10 dB, VSWR ≤ 2, gain ≥ 4 dB and has a bandwidth of ≥ 100 Mhz. After designing and simulating antennas using CST Studio Suite 2019 software, a return loss value of -19 was obtained. 099 dB (S11) and -18.695 dB (S22), VSWR of 1.252 (Port 1) and 1.262 (Port 2), gain of 4.009 dBi (Port 1) and 4.072 dBi (Port 2), and bandwidth reaches 1888 MHz (S11) and 1917 MHz (S22). So in this case the antenna designed is appropriate because it meets the requirements of the expected parameter specifications. From the results of the antenna design simulation, the measurement stage was carried out at return loss with values obtained of -14,161 dB (S11) and -11. 915 dB (S22), and a bandwidth of 600 MHz.

Keywords : Microstrip Antenna, Triangular Patch, MIMO, 5G, Bandwidth