

## ABSTRACT

The development of wireless technology is developing rapidly, one of which is the LTE technology that has high data transfer speeds of 100 MBps on the downlink and 50 Mbps on the uplink and can support all the applications either voice, data, video and IPTV.

To support these technologies, it needs a good system of telecommunications equipment to meet the need for services provided. Any device that supports is antenna that can operate at frequency standards that appropriate of allocation , gain is sufficient, appropriate direction and transmit accurate, and efficient. Several recent international research journals, suggests that the technique of Multiple Input Multiple Output (MIMO) can improve the performance of wireless communication systems. MIMO system is a communication system using multi-antenna in both transmitter side and receiver side.

In this final task, has realized a 3x3 MIMO antenna biquad using brass materials that meet the expected specifications. With the performance characteristics of the resulting antenna VSWR at center frequency is 1.156 GHz, return loss  $\leq -10$  dB, impedance  $46.786 - j11.247$  Ohm, the coupling between element of antenna is  $S_{12} = -20.837$ dB,  $S_{13} = -32.181$  dB  $S_{23} = -21.784$  dB , by using casing as reflector antenna the available Gain of this antenna are able reach until 8,7 dBi.

**Key words:** *Biquad Antenna, Mimo, LTE*