ABSTRACT

LTE (Long Term Evolution) is an alternative system of mobile communication network 4 generation with mobile broadband and very high data speeds . Transmitter and receiver on communication systems, including an LTE system there are antennaa for transmitting and receiving signals. The problem is multipath fading that causes fluctuations in the signal at the receiver. To overcome multipath fading and achieving a very high bit rate, designed antennas with MIMO technology (Multiple Input Multiple Output). MIMO system is a communication system that uses multiple antennas at both the transmitter and receiver sides.

From This final project has been realized 3x3 MIMO array antenna using microstrip technology. Antenna is a passive device as a media liaison between the guided wave and the unnguided wave . With 3x3 MIMO, 3 antennas that works on the same frequency, arranged with a certain distance and supplied with 3 different ration. Where each arrangement is expected to have a gain> 6 dBi. This antenna works on the frequency 2300-2390 MHz that can be applied to the LTE system block for CPE (customer promises equipment) indoors.

The realization of this antenna has been tested by measuring the results of gain at port 1, 2, and 3 are 5.3dBi ,5.53 dBi dan 5.8dBi, isolation between ports was 31-57 dB. Achieved VSWR 1.13,1.4, 1.21 for pert 1,2 and 3. There were 113-130 Mhz of bandwidth. This antenna had been simulated using Ansoft 13 software.

Keyword: Antenna, Microstrip, Array, MIMO, LTE