

ABSTRACT

5G technology is a new technology development that is expected to begin to be implemented in Indonesia in 2020. This technology is used to meet the needs of wireless technology-based services (Mobile wireless). Especially in the need of very high data rate, great service, low latency, and support high mobility cannot be fulfilled by the previous technology. In 2020, the mobile network can be connected anytime and anywhere. One of the 5G criteria is being able to adapt to the number of users that using. Mechanical on / off is one of the technique that can be done to look at the pattern of some parameters of an antenna.

In previous studies, have been carried out the design and analysis of massive MIMO antenna micro strip with proximity feed rationing cross linear polarization for communication 5G (28 GHz). Then, dual frequency antenna MIMO Massive at 28/38 GHz frequency has been developed. In these studies, there's yet a study of massive planar antenna design MIMO in the frequency of 28 GHz.

In this final project is to design a linear polarized antenna Massive MIMO who works at a frequency of 28 GHz and application of method performed on / off. The designed antenna is micro strip antenna of the antenna elements numbered 64 to form a rectangular patch, unidirectional radiation pattern using Duroid Rogers substrate 5880. Optimization is performed at each stage of antenna design of 1 antenna, 2 antennas, four antennas, 8 antennas, 16 antennas, and 64 antennas.

Massive MIMO antenna has been designed to take shape with the linear polarization return loss values averaging below 10dB, average gain above 7.5 dB, and a bandwidth greater than 667 MHz then done the on / off method and see the effect on antenna parameters that have been made.

Keywords: MIMO massive antenna, 5G, Linear Polarization