

ABSTRACT

Currently the development of mobile communication technologies is very fast and rapidly. This development raises a variety of new technology standards. Starting from 1G, 2G, 3G and 4G. But with the development of technology, users of mobile communication services is also increasing. This causes traffic density could reduce the quality of service and network. Therefore, discovered a new technology system known as small cell solution. The system technology is designed to optimize both cellular networks 2G, 3G and 4G in dense traffic areas.

One of the important components in a mobile communication system is an antenna. To support small-cell technology system needed an antenna that is effective and efficient, especially in terms of size so as not to take up much space in its application. The problem that occurs is how to create an efficient antenna, small dimension, and meets the specifications for mobile communication. For the time being many antennas that have realized that meet the specifications of the BTS antenna, such as sectoral antenna. But size is too big when applied in small cell technology systems.

Therefore, in this thesis designed and realized an E-shaped microstrip antenna Fractal Tripleband who works at frequencies of GSM, UMTS and LTE in a single antenna that supports mobile communications technologies that aim for efficient use of the antenna. Microstrip antenna chosen because the structure is lightweight and small dimensions but does not reduce the quality of the antenna designed. End technique used to increase the gain of the parasitic antenna.

KEYWORDS: *E-shaped fractal, end parasitic, prototype, smallcell*