

## **ABSTRACT**

The development of the telecommunications system in Indonesia is very fast along with the times. However, the large number of users and limited bandwidth cause communication problems with each other. In this study, a four microstrip patch antenna was developed using a 1x2 array technique with a U slot at a frequency of 2.3 GHz for LTE applications. The U-slot technique tries to increase the bandwidth and dimensions of the antenna, while the array method is used to get the maximum gain value. The optimization used is AWR Microwave Office 2009 software. The standard specifications that must be found are Return loss -10 dB, VSWR 2, Gain 5 dB and Bandwidth 200 MHz and Unidirectional Radiation Pattern. The substrate material uses FR4-Epoxy, the dielectric constant is 4.3, the loss tangent is 0.0265 and the antenna thickness is even 1.6 mm. The antenna is designed by utilizing a microstrip line. The optimization results of the 1x2 rectangular microstrip array antenna design produce the following results: Return Loss -24.74 dB, VSWR 1.008, Gain 6.736 dB, and Bandwidth 465 Mhz and Unidirectional Radiation Pattern. The results obtained are in accordance with the standard antenna specifications for LTE applications.

**Keywords:** mikrostrip antena, array, U-Slot, bandwidth, LTE