ABSTRACT

In the communication system, the satellite orbit and frequency is a limited resource. So its use should be regulated, such as the use of frequencies. Today, the communication system can not be separated from the use of frequencies. Although the use or utilization of frequencies in the air has been arranged, but the frequency in the air has not been fully utilized. Low utilization of these frequencies resulting frequency resource is wasted.

In several project that have been conducted, it is stated that the frequency can be converted into new resources. To change these frequencies into new resources is necessary antenna and rectifier. The technology is called a rectenna (rectifier antenna) that function to convert electromagnetic waves into DC current source. With the rectenna, radiation of electromagnetic waves that comes from Transiever Base Stations (BTS) mobile phones and televisions could be used for new resources in terms of stress to other devices without using batteries.

In this final project design and realization process rectenna. An antenna that is realized microstrip antenna array. This antenna is intended to absorb waves transmit at a specific frequency range at 470 MHz - 2400 MHz. The operating frequency based on the measurement of 900 MHz and 1800 MHz with a gain of > 7 dBi at VSWR < 2. Rectifier that was used in this project was BAT17 Schottky diode type that works at UHF frequency range (300 MHz - 3000 MHz). The measurement results show the value of the highest voltage of this circuit is 1,358 volts measured from a distance of 30 cm from the antenna reference in chamber room. In the standard environment, the rectenna obtained average output in 200 mV. The rectenna can not turn on a clock that had DC voltage spesification in 1,5 V.

Keyword : *Rectenna, Rectifier,* Antena*, Dioda Schottky*