

## **ABSTRACT**

*The development of IoT devices and sensors in the future will be very broad. In the future it is expected not to rely on batteries. Utilization of electromagnetic waves in the environment to be converted into energy is one way to eliminate dependence on batteries. In urban environments, the availability of WiFi networks is very abundant. The WiFi network emits electromagnetic waves at a frequency of 2.4 GHz. These electromagnetic waves can be used to turn on low-power IoT devices. In its development, this effort is referred to as the RF Energy Harvesting technique. To realize the RF Energy Harvesting technique a hardware device called a rectenna is required. For this reason, in this final project a rectenna design is carried out for Energy Harvesting at the 2.4 GHz WiFi frequency. The results of the built rectenna succeeded in converting electromagnetic energy into DC electricity with a voltage of 470 mV at a distance of 10 cm and a voltage of 11.7 mV at a distance of 1000 cm from an RF source with a power of 5 Watt.*

*Keywords: RF Energy Harvesting, Rectenna and WiFi*