ABSTRACT

In the future, low-power IoT devices will be increasingly applied to various fields. One of the implementations of IoT devices is environmental monitoring in rural areas. The current problem is that these IoT devices still depend on batteries. Later it is expected to no longer depend on batteries. The possible solution to the problem is the RF energy harvesting technique. This technique allows electromagnetic waves scattered in the environment to be converted into electrical energy. This energy can be used as a substitute for battery energy sources in IoT devices. RF energy harvesting technique requires a hardware device called rectenna. In rural areas, electromagnetic wave emission generally comes from amateur radio. For this reason, in this final project, a rectenna design is made at the VHF 155 MHz amateur radio frequency. So that in the experiments conducted with the VHF 155 MHz frequency range, it was found that the rectenna could work with the results of the voltage value generated was 2.702 mV and was able to turn on the LED on the PCB circuit.

Keywords : rectenna, radio frequency, dipole antenna.