ABSTRACT

Electricity is a very important need for every human being. The problem that often occurs when dealing with electricity is the cost of electricity bills. Sometimes the electronic items in the house are used continuously without knowing how much power has been used. Knowing the power that has been used of each electronic device is a way that can be done to manage electricity consumption and prevent the huge electricity bills.

Thus, the Smart plug is made to control the power consumption of electronic devices. Smart plug can also turn off and turn on a switch manually or automatically. Using Arduino Pro Mini-based microcontroller, this Smart plug will keep an eye on the power consumption of the connected electronic device, then automatically turn off the device when energy usage or power exceeded the threshold, thus saving electricity consumption and the cost of electricity bills. Smart Plug will connect with smartphone-based android operating system so that users can access the switch to turn off or turn on with android smartphone remotely.

The test results obtained the maximum range of NRF2L01 is 81 meters in LOS (Line of Sight) Condition. Distance range of NRF24L01 can also affected the delay in the data transmission process. The availibility and reliability of the system are 99,47and 99,39%.

Keywords: *Smart Home, Smart Plug, Wireless, Current Transformer, Raspberry Pi, Arduino.*