ABSTRACT

Development of telecommunications technology is more advanced , so it can be used to assist humans in performing his job . Humans are required to do a job with high mobility and efficient . This shall be done to take advantage of wireless communication technology in particular . Wireless communication technology is one technology that allows people to perform jobs without fear of being limited by space and time . Wireless communication technologies that exist today can be utilized to make the application activation electrical appliances wirelessly .

Application equipment electrical activation through wireless communication can be divided into 2 parts master and slave . Section serves as a master control center to turn on or turn off electrical equipment while in the slave consists of a microcontroller , ACS712 current sensor ELC - 20A , and relays . Communication between master and slave using Zigbee modules XBee types based on the IEEE 802.15.4 standard . Whether or not the use of electrical equipment in the slave will be detected by the current sensor and then sent to the master node as a feedback which is then displayed a program that build in Visual Studio 2012 . The operator can shut off the flow of electricity on slave nodes by pressing the push button on the program application .

Control and monitoring based on wireless netwrok which has designed have an accuracy 98% for showing data and sending instruction. In the implementation of the hardware ACS712 ELC - 20A has the accuracy of current sensing with is $\pm$ 98%. . Farthest distance for data communication using Zigbee / XBee is 30 m with no obstacle conditions and with obsatacle is 9 m . Node Slave sending a data every 1,1 seconds and for controlling relay needs 1,1 seconds.

Keywords : microcontrollers , current sensor , activation , Zigbee