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 which consists of a microcontroller , LCD , RTC (Real Time Clock) and push button 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 to the LCD for easy reading by the operator . The operator can shut off the flow of electricity on slave nodes by pressing the push button on the master node .

ACS712 ELC - 20A current sensor used three pieces adapted to the number of outlets . Current sensor is installed in series with the AC PLN and outlet . The output of the current sensor will be processed AVR microcontroller ATmega 8535 and displayed on the LCD as the operator interface . From the results of this final study , data showed that the current sensor output when no use is 0.0099 mV while when no load is worth 450 watts electric current sensors produce output 0.91 V. Farthest distance for data communication using Zigbee / XBee adalalah 25 m with no obstructions conditions . It can be concluded tools designed already working as it should .

Keywords : microcontrollers , current sensor , activation , ZigBee