

ABSTRACT

Remotely controlling system using telecommunication devices has increasing as the globalization comes where the technology facilitate all the human activities. There are many different types of control over the telecommunications equipment such as control lighting by utilizing the telephone network, Short Message Service (SMS), using the web and etc. However, each control technique that is used have advantages and disadvantages. Therefore, one of the solutions for remotely controlling by use technology with zigbee (IEEE 802.15.4) and zigbee module on this research (IEEE 802.15.4) used are Xbee Pro S2.

In this final task discussed about on/off switch controlling of street building lighting through a push button mounted on the microcontroller with static routing communication system. Static routing communication used in the process of sending and receiving data between zigbee (IEEE 802.15.4). By using the static routing communication the operator could do the On / Off light from distance. Static routing method designed for the system to send packets/information to the destination node which vary according to route that was designed. Static routing method applied to the system to anticipate the limited distance range zigbee modules are used so as to utilize the nearest node for sending and receiving data.

Measurements taken when the condition is with obstacle and no obstacle using the baud rate of 9600 bps. Communication with static routings in final task can be said to succeed, where all data packets successfully sent and received by each node, with a maximum distance between nodes of about 88.68 meters to an area with obstacle and no obstacle for area measurements can be made up about 48.63 meters.

Keyword : ZigBee (XBee Pro S2), Static Routing, Microcontroller ATmega 8535, On/Off Switch