ABSTRACT

Vital sign monitoring of a patient's body can be used to determinate the appropriate treatment measures for patient at the hospital. Vital sign monitoring of a patient's body can be done using a sensor which is connected to the monitoring device. In general, there is only one monitoring device which is in the patient's room. The necessary supervision of medics to conduct regular check on the patient's room to check the condition of the patient. So if there is patient who require continous and periodic monitoring would require quite a long time. Therefore, it needs a detection and remote patient's vital sign monitoring device which can provide real-time information to be able to act more quickly and precisely. So patient monitoring can be done by looking at the display on the monitoring device.

To assist vital sign monitoring of patient's body, in this final project researcher create a prototype implementation of multipoint vital sign monitoring system for vital sign monitoring of patient. The system uses a vital sign monitoring device to collect vital sign data of patient's body and then the data is sent by the coordinator node to the end device node to be displayed on the computer screen. The sensor will be connected to two monitoring devices using ZigBee or XBee.

The results of this research indicate the multipoint vital sign monitoring system using ZigBee wireless sensor network which was created can simplify the process of vital sign monitoring of patient's body from the distance using a PC wirelessly with an average error of temperature measurement is 0,085%, average error of blood pressure measurement is 60,946%, and average error of pulse rate is 0,986%. Errors in the monitoring results caused by large data transmitted by the sensor exceeds the capabilities ZigBee communication.

Key word : *vital sign monitoring, multipoint, wireless sensor network, ZigBee*