

ABSTRACT

Heart is a part of human body that has vital function such as pumping blood to entire body. If something abnormality happens to a heart system, then that heart need to be checked continuously until the heart system is going back to normal. Heart system can be detected from electric signal that produced by heart muscle cell or electrocardiogram signal (ECG). From this ECG signal, medical staff knows the condition of the patient's heart.

Because the monitoring of patient's heart work is so important, we need the supervision system that integrated inter patients, so the medical staff can monitor more than one patient. This system is created using wireless connection so the medical staff can monitor without being near with the patient all the time. The connection is real time so the doctor or medical staff can make quick decision. ECG signal is intercepted using electrode with Einthoven triangle method and using mesh network topology. This system will be monitoring ECG signal from three patient. Each of them has an X-Bee module to send ECG signal that already be intercepted.

In designing and testing the system that has been done, the received data from all patients can be received in the form of graphic with the maximum outdoor distance between the patient and the receiver is 130 meters in LOS condition.

The conclusion from this final task is the monitoring system can receive three datas that are sent from each patient and the receiver can differentiate and separate all the datas that are received from all three patient.

Keywords : *Electrocardiogram, XBee Series 2, mesh, microcontroller*