ABSTRACT

Heart is an organ on living beings that have function to transport metabolism ingredients. Heart can work continuously because of sino atrial node that can produce biopotensial shock, and trigger the heart muscle to do contraction. This electric signal can be recorded through skin surface and be called electro cardiogram (ECG). In 2013, there are 7.6 million death case per year because heart attack. Because of these, a system that can give an early warning when there are anomaly in heart is needed. The earlier this anomaly can be detected, the faster a treatment can be done. It can increase the survival rate because heart attack.

In this final project have been realized a device and application to monitor ECG signal based on Bluetooth communication that operate at a frequency of 2.4 GHz. This device can be used to monitor heart condition thru its ECG signal. With these, the anomaly of heart can be known earlier and the treatment can be faster. This device consist of two block, that is analog device as ECG recorder, and digital device as converter and transmission data.

This ECG monitoring system was tested with several parameters which are amplifier circuit testing, battery endurance testing, and distance. The measurement result shows that this device can be operated optimally in range less than 20 m with average of loss data below 5%.

Keyword: sino atrial node, biopotential, electro cardiogram, Bluetooth