

## ABSTRACT

The application of wireless technology in medical health is not brand new. In general, application of this technology was designed to avoid cable use between sensor and monitor or the another device, one of the application is wireless electrocardiogram. Electrocardiogram or ECG is a device to record of the electrical activity generated by heart. ECG device consist of several components, some of the device are sensor, hub, and monitor. Generally, this device connected by cable for transmit data from the sensor to the hub and then proceed to the monitor or data base, this method is not efficient. Wireless ECG give the efficient solution to solve this problem.

An ultra wide band frequency (UWB) antenna is a technology that can read up to lower speeds of more precise data. UWB antennas are good devices in wireless ECG devices.

In this final project prepared microstrip antenna using RT5880 substrate. Design using CST Studio application. In measurements use a chest phantom consisting of skin, fat and muscle. This antenna works well on the chest on frequency 3.9, with 680 MHz bandwidth, unidirectional radiation pattern, 2.9 dBi gain, with VSWR  $\leq 2$

**Key Word :** *ECG, Ultra WideBand, antenna microstrip*