

ABSTRACT

Standard clinical ECG monitoring requires 12leads to produce 12 cardiac signals viewed from multiple directions. The research objective is to develop an ECG so that it can read more signals as much as 12leads 3channels, and with the addition of Bluetooth, it functions to facilitate patient monitoring. The research contribution made a 12lead ECG so that more heart signals can be diagnosed, by adding bluetooth to make ECG readings more portable for diagnosing, making it easier for nurses to work and the signal can be monitored at any time. From the above objectives, the idea was obtained to make a 12lead 3channel ECG appear on a PC with Bluetooth as data transmission. The ECG circuit consists of circuit buffer, Multiplexer, Instrumentation Amplifier, High Pass Filter, Low Pass Filter, Notch Filter, final amplifier and circuit Adder, ECG signal is obtained from electrode placement on the body, bluetooth module is used to transmit data and Delphi program as interface to PC. The results showed the average error value in BPM 120 and 240 readings was 4.17%, the results of signal matching obtained an average error value of 1.2%, this ECG can send signals as far as 35m without obstruction and 12m with obstruction. The conclusion of the study is that a 12 lead 3 channel ECG has been made with Bluetooth as data transmission. The results of the study can have implications for conventional ECG to improve signal readings and with the addition of Bluetooth it can make it easier for nurses to monitor patients

Keywords: Heart, ECG, BPM, Bluetooth Module