

## ABSTRACT

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*Heart rates devices exist in the market, particularly devices placed on the chest, but in general, these devices using an ANT+ as a connection. The prototype is made by utilizing the ECG sensor on the AD8232 module paired with an ESP32 microcontroller capable of having WiFi and Bluetooth connections with a TFT screen, resulting prototype can be a stand-alone device without the need to be paired with a smartphone. There are additional functions, which are arrhythmias detector and notifications, notifications will be displayed on the TFT screen and the Blynk application. The Blynk application is used for testing transmission data using the cloud or WiFi and for BLE or Bluetooth low energy will be using the ESP32 BLE Demo application. The ESP32 BLE Demo application only displaying heart rate value data, while the Blynk application can view heart rate data and status. The status offered is like be presented on the TFT screen, which are three statuses normal status, warning status, bradycardia status and tachycardia status. This prototype has two options for connection resulting in the prototype can cover up to 10 meters.*

*Keywords: ESP32, ECG, IoT, BLE, Arrhythmias.*