Health Monitoring Wearable

Status: Filled

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Sponsor(s):

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Project Description

Background

The fitness-sensing market has been primarily dominated by body-worn sensors. The activity-sensing market is expected to be worth circa $975 million by 2017. The use of wearable technologies, such as the Fitbit, is becoming increasingly common among the general public. Seventeen million wearable fitness bands were expected to be sold in 2014, rising to 45 million by 2017 and 99 million annually by 2019. Nowadays, most of the activity monitoring devices are in the form of a wristband. The problem of the wristband is that some of the sensors such as heart rate sensor cannot work properly while the user is performing activities. One of the most challenging issues to measure heartbeat with the wristband type devices is extracting heartbeat while the device is not in full contact with the wrist. Therefore, in daily activity monitoring, these devices are useless to measure heartbeat. Here, we propose a small wearable device to measure heartbeat and blood oxygen saturation which it can be used for daily activity monitoring, heartbeat and blood oxygen saturation monitoring. The device is particularly useful for monitoring elderly population where in case of any health problems, it can transmit relevant data to a monitoring station.

We need a team to work on following items:

Case design
Circuit and PCB design
Embedded software
Optimized algorithm to extract heart beat and oxygen level of the biological tissue.
MS windows or android or iOS based software to visualize extracted data