

Biosensing Patch Reference Design for Continuous Vital Sign Monitoring With Bluetooth® Low Energy



Description

The wearable biosensing patch reference design provides a platform to evaluate TI's latest offerings for continuous monitoring of vital signs such as electrocardiogram (ECG), heart rate, respiration, pace pulse, temperature, and motion. The design utilizes the AFE4960 for accurate single-lead ECG signal acquisition and the TMP119 for the body temperature monitoring. The measured data is transferred by the CC2674R10 to the remote terminal such as a smartphone and medical monitoring system for the real-time display. The onboard light-emitting diode (LED) can be used to indicate status of the system like lead-off, low power, and Bluetooth® Low Energy connection. The whole design can be powered with 2 × CR2032 battery (3V input) or 1 AAA battery (1.5V input) with an operating life of 14 days.

Resources

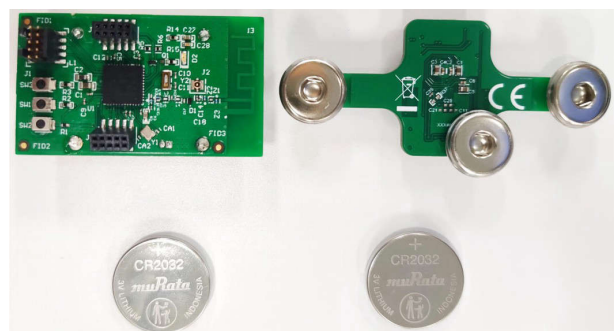
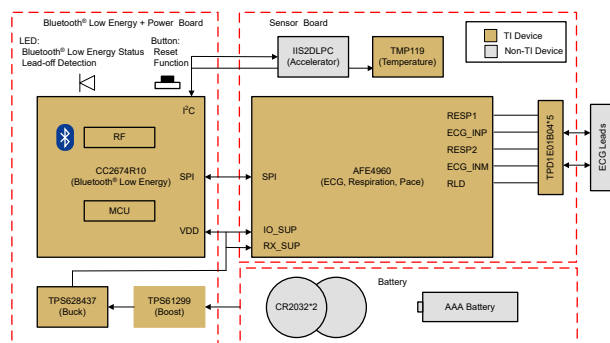
TIDA-010270	Design Folder
AFE4960, CC2674R10	Product Folder
TMP119, TPD1E01B04	Product Folder
TPS628437, TPS61299	Product Folder

Features

- Small, multiparameter, single-chip patch design for synchronized ECG, respiration, and pace pulse detection
- High-accuracy digital temperature sensor for real-time body temperature monitoring
- High-performance, 2.4G Bluetooth® Low Energy 5.3, Arm® Cortex®-M33 processor supports wireless data transfer
- Highly efficient DC/DC converter to support both 2 × CR2032 (3V, 210mAh Coin-cell battery) and 1 × AAA battery (1.5V, 500mAh) with an operating life of 14 days
- Flexible Bluetooth® Low Energy platform to support the wearable patch and Holter designs
- SimpleLink™ Connect mobile app for the real-time ECG, respiration, pace pulse, and temperature display

Applications

- [Medical sensor patches](#)
- [Electrocardiogram \(ECG\)](#)
- [Wearable fitness and activity monitor](#)
- [Smartwatch](#)
- [Smart trackers](#)



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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
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