DataSheet

1 Features

√ Fully integrated one chip solution, few external components

√ 70 µA operating current, extremely low power consumption

√ Optional third RLD electrode

√ Integrated filter with programmable bandwidth, ensure clinical level waveform

√ <100 ms fast restore time

√ DC lead-off/lead-on detection supported

√ 1.8 V core power supply, 1.8 V/3.3 V digital IO power supply

√ Flexible sensing/standby/powerdown power mode

√ 16-grade programmable gain

√ >95 dB common-mode rejection ratio

√ Single-end analog output

√ ±8 kV HBM ESD rating

2 Applications

Wearable Devices

- Smart watches/wristbands
- Smart health clothes
- ECG monitoring straps
- Remote health monitoring cards

Health Monitoring Scenes

- Fitness equipment
- Bicycles
- Smart cars

3 Description

The CN131 is a fully integrated one chip solution for electrocardiogram (ECG) applications. It is designed to amplify and filter weak ECG signals in the presence of noisy or undesirable environment, such as large power-line interference or motion/electrode placement
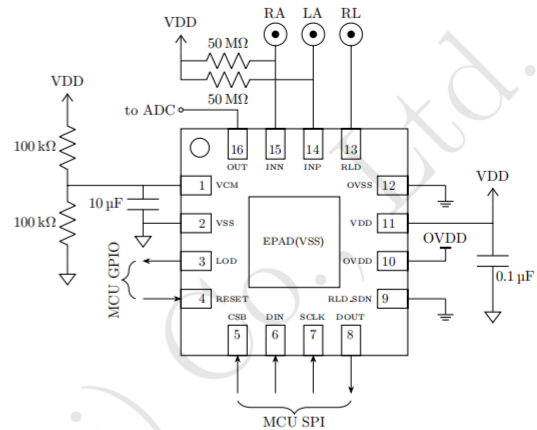

Figure 1: Application highlight

effect. An analog-to-digital converter (ADC) or an embedded microcontroller can be adopted easily to further acquire and process the single-end analog output signal.

Due to its large input impedance, high common-mode rejection ratio (CMRR) even without the third RLD electrode, single lead ECG with two Dry electrodes is supported with clinical level waveform quality.

The CN131 has 7 µA very low power DC lead-off/lead-on detection functionality, and flexible power mode such as standby mode, which ensure long-time or instant ECG detection in stringent power demand requirement.

An SPI interface is used to write and read the config registers of the CN131, including the clinical-level bandwidth selection, and the 16-grade programmable gain. It is easy to be programed by the most common MCU. The various bandwidth-gain recipes make it ideal candidate for common or rare application scenes.

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——Health & Medical Chips & Solutions One-stop Provider

Rev.2 .0