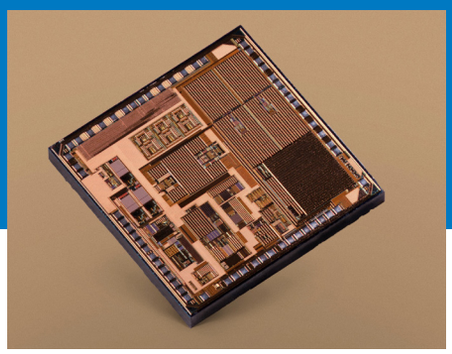
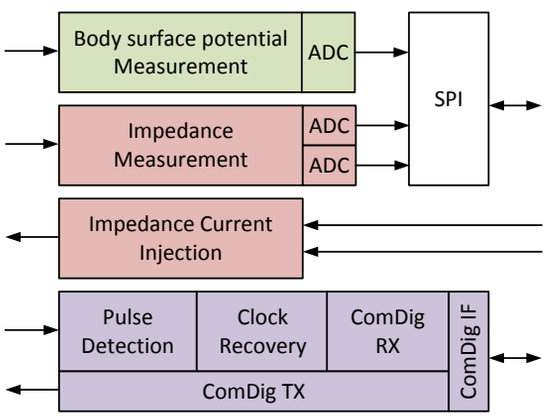


SenseCom

ASIC for miniaturized multi-sensor vital sign monitoring

Monitoring physiological signs from several locations on the body requires a harness of wires which contributes significantly to render wearable monitoring systems impractical. The SenseCom ASIC enables to simply interconnect sensors within a vest fitted with a single conductive fabrics wire, resulting in an unprecedented level of integration – in particular for systems requiring many sensing points.

The SenseCom ASIC is a medical-grade device enabling multi-lead ECG or EIT monitoring and non-obtrusive blood pressure measurement with dry electrode low power cooperative button sensors and through-body digital communication between the sensor nodes. It enables to interconnect up to 25 sensors through a single conductive fabrics layer and eliminates the need for shielded cables thanks to its patented pass-through circuit. It can easily be complemented with respiration rate, chest SpO2, core body and skin temperatures, activity, etc.



SenseCom block diagram

Functionality

- Compliant with relevant medical standards
- Patented pass-through circuit and skin saturation detector
- ECG measurement with < 2 µV input referred noise for 150 Hz bandwidth
- EIT (Electrical-Impedance Tomography) modulator and demodulator for EIT measurement with up to 25 channels
- Through body communication between sensors at selectable 1 or 2 Mbit/s, supporting up to 25 sensors
- Automatic wake-up on skin contact detection
- 16 bit Analog to Digital Converters (ADC)
- Embedded power management
- Serial-Parallel interface (SPI)

Examples of cooperative sensors

Applications

- ECG monitoring
- EIT monitoring
- Pulse rate detection
- Blood pressure monitoring

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