15-Lead ECG Vital Signs Monitor Module

Data Sheet **ADAS1010-1/ADAS1010-2/ADAS1010-3/ADAS1010-4**

FEATURES

- **Biopotential signals to included digital signal processor Cortex-M4 based processor (ADSP-CM403F) for customizable measurement and analysis**
- **Highly flexible configuration management, incorporating a user configurable field programmable gate array (FPGA) (Lattice iCE40HX1K-TQ144)**
- **12 fully integrated electrocardiogram (ECG) electrode inputs**
- **3 temperature channels**
- **3 invasive blood pressure (IBP) channels**
- **Source and detection circuitry for thoracic impedance measurement**
- **1 driver output**
- **Wideband performance for pacer detection (available on 2 electrode channels) supporting the user algorithm**
- **Self diagnostic and calibration circuitry**
- **Configurable lead detection**
- **Connector interfaced, small form factor module for ease of system design and implementation**
- **Robust, with electromagnetic interference (EMI), shock, and vibration resistant packaging**

APPLICATIONS

- **Clinical patient vital sign monitors (VSMs) and diagnostic equipment**
  - **ECG**
  - **Temperature**
  - **IBP**
  - **Respiration**

GENERAL DESCRIPTION

The ADAS1010-1 is designed for high performance diagnostic and clinical patient monitoring systems that require a fully integrated solution in a highly compact form factor. The ADAS1010-1 VSM module is a fully functional, analog front-end (AFE) to processor, 15-lead ECG module with measurement support for thoracic impedance, pacing artifacts, 3-channel blood pressure, 3-channel temperature, lead detection and self verification, and unit inclination features.

The ADAS1010-2, ADAS1010-3, and ADAS1010-4 options provide reduced features, enabling ease of firmware and mechanical design reuse in situations demanding increased recurring cost restraint. An interface and software compatible with the derivatives retain the high performance ECG functionality and offer options with the removal of lead inputs, respiration, temperature, and blood pressure functionality, as shown in Table 1.

Table 1. Configuration of Module Variants

Variant	Configuration
ADAS1010-2	Same as ADAS1010-1, but excludes temperature and blood pressure subsystems.
ADAS1010-3	Same as ADAS1010-1, but excludes respiration drive and demodulation subsystems.
ADAS1010-4	Same as ADAS1010-1, but excludes Channel 5 to Channel 12 in ECG as well as temperature, accelerometer, blood pressure, respiration drive, and demodulation subsystems.

For more information about the ADAS1010-1/ADAS1010-2/ADAS1010-3/ADAS1010-4, contact the Analog Devices, Inc., Customer Interaction Center at http://www.analog.com/en/content/technical_support_page/fca.html to connect with a technical support specialist.

Rev. Sp0 **Document Feedback**

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NOTES

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