FEATURES
Biopotential signals to include 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

<table>
<thead>
<tr>
<th>Variant</th>
<th>Configuration</th>
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<tbody>
<tr>
<td>ADAS1010-2</td>
<td>Same as ADAS1010-1, but excludes temperature and blood pressure subsystems.</td>
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<tr>
<td>ADAS1010-3</td>
<td>Same as ADAS1010-1, but excludes respiration drive and demodulation subsystems.</td>
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<tr>
<td>ADAS1010-4</td>
<td>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.</td>
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