

### FEATURES

- Biopotential signals in; digitized signals out
- 5 acquisition (ECG) channels + 1 driven lead
- Parallel ICs for up to 10+ Electrode measurements
- AC and DC Leads Off Detection
- Internal Pace Detection Algorithm on 3 leads
- Support for users own pace
- Thoracic Impedance Measurement (internal/external path)
- Selectable Reference Lead
- Scalable Noise vs. Power Control
- Low Power Operation from:
  - 11mW (one lead), 14mW (3 leads), 19mW (all electrodes)
- Power Down Modes
- Lead or Electrode Data available
- Supports AAMI EC11:1991/(R)2001/(R)2007,  
EC13:2002/(R)2007, IEC60601-1 ed. 3.0b, 2005, IEC60601-  
2-25 ed. 1.0b, IEC60601-2-27 ed. 2.0, 2005 IEC60601-2-51  
ed. 1.0, 2005
- Fast Overload Recovery
- Low or High speed Data Output Rates
- Serial interface SPI<sup>®</sup>-/QSPI<sup>™</sup>-/DSP-compatible
- 56 lead LFCSP package (8mm x8mm)
- 64 lead LQFP package (10mm x10mm Body size)

### APPLICATIONS

- ECG: Monitor & Diagnostic
- Bedside Patient Monitoring, Portable Telemetry, Holter,  
AED, Cardiac Defibrillators, Ambulatory Monitors, Pace  
Maker Programmer, Patient Transport, Stress testing,

### GENERAL DESCRIPTION

The ADAS1000 measures electro cardiac (ECG) signals, thoracic impedance, pacing artifacts, lead on/off status and outputs this information in the form of a data frame supplying either Lead/Vector or Electrode data at programmable data rates. Its low power and small size make it suitable for portable, battery powered applications. The high performance also makes it suitable for higher end diagnostic machines.

The ADAS1000 is designed to simplify the task of acquiring and ensuring quality ECG signals. Value-added cardiac post-processing is executed externally on a DSP, microprocessor or FPGA. Several digital output options ensure flexibility when monitoring and analyzing signals. The ADAS1000 provides a low power, small data acquisition system for biopotential applications.

### FUNCTIONAL BLOCK DIAGRAM

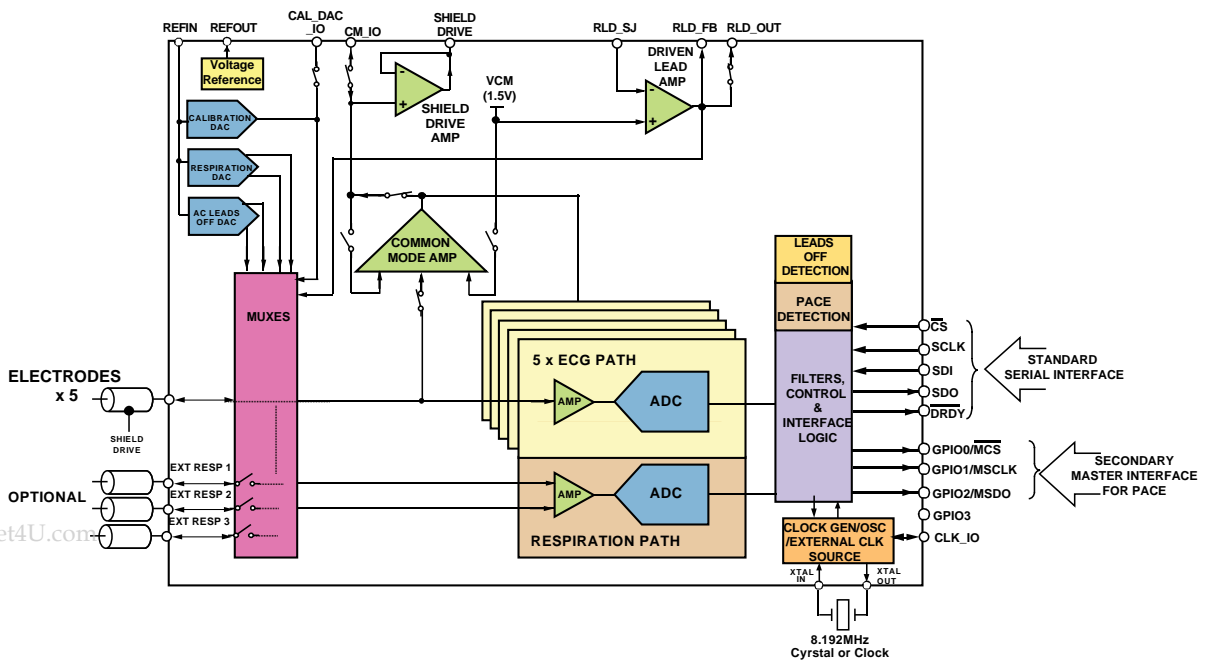


Figure 1 Functional Block Diagram

### Rev. Pr.D

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**GENERAL DESCRIPTION - CONTINUED**

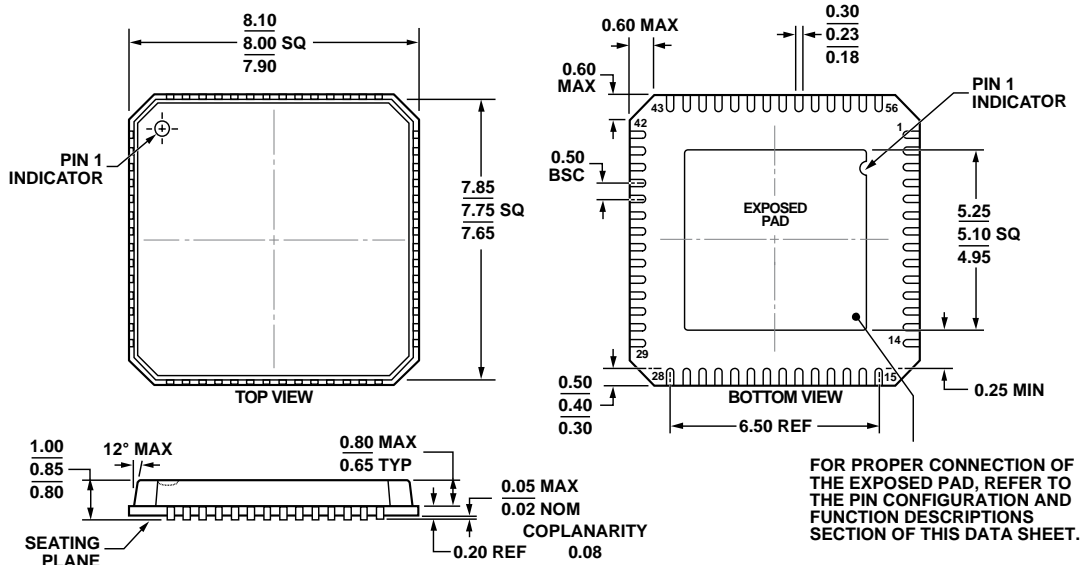
Auxiliary features that aid in better quality ECG signal acquisition include: multi-channel averaged driven lead, selectable reference drive, fast over load recovery, flexible respiration circuitry returning magnitude and phase information, internal pace detection algorithm operating on 3 leads and option of AC or DC leads off detection.

Since ECG systems span different applications, the ADAS1000 features a novel power/noise scaling architecture where the noise can be reduced at the expense of increasing power consumption. Signal acquisition channels may be shutdown to save power. Data rates can be reduced to save power.

To ease manufacturing tests, development, as well as offer holistic power-up testing, the ADAS1000 offers a suite of dc and ac test excitation via the CAL DAC, CRC redundancy testing in addition to read-back of all relevant register address space.

The ADAS1000 is available in two package options, either a 56 lead LFCSP or a 64 lead LQFP package and is specified over -40°C to +85°C temperature range.

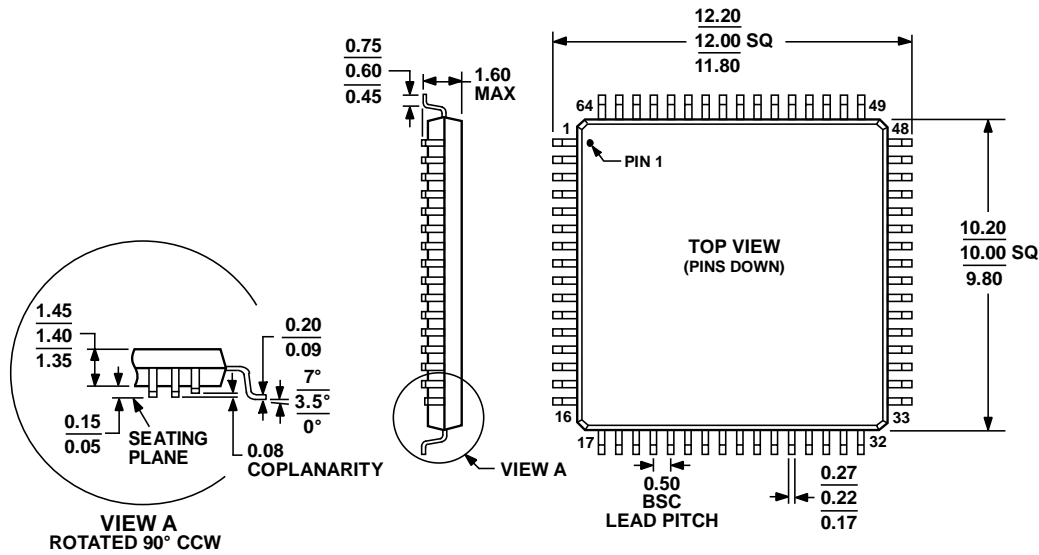
OUTLINE DIMENSIONS



COMPLIANT TO JEDEC STANDARDS MO-220-VLLD-2

Figure 2. 56 lead, 8mm x 8mm LFCSP

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COMPLIANT TO JEDEC STANDARDS MS-026-BCD

Figure 3. 64 lead, 10mm x 10mm body size LQFP

051706-A

ORDERING GUIDE

Model <sup>1</sup>	Temperature Range	Package Description	Lead Finish	Package Option
ADAS1000BCPZ	-40°C to +85°C	56 lead LFCSP	TBD	CP-56
ADAS1000BSTZ	-40°C to +85°C	64 lead LQFP	TBD	ST-64
EVAL-ADAS1000EBZU1	1 <sup>st</sup> Silicon Evaluation kit			

<sup>1</sup> Z = Pb-free part.