Hardware Pace Detection for ECG Reference Design

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Key Document

- **TIPD111 Design File** (ZIP 883 KB)
  19 Sep 2013 139 views
- **TIPD111 Verified Design Reference Guide** (PDF 794 KB)
  18 Jun 2013 336 views
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Test board used for Hardware Pace Detection for ECG

Description

This Verified Design outlines a hardware pace detection solution for ECG using slope detection. The circuit is designed to work smoothly with the AD5129B through the PACEOUT pins from the ADC directly feeding the input of the pace detection circuit. When a pace signal is detected, the output from the circuit is designed to latch a logic signal high to be read from a GPIO.

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Fully assembled board (shown above) developed for testing and performance validation only, not available for sale.

Features

- Monitors for Signal from Pacemaker using slope detection
- Outputs and latches an logic pin which can be monitored using a GPIO
- Single Supply Solution
- Designed to mate with AD5129BECG-FE board

This Verified Design Includes

- Theory
- Component Selection
- TINA-TI Simulation
- Schematics and PCB Layout
- Verification and Measured Performance
- Modification Options

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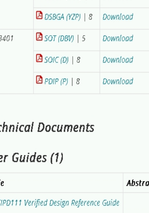
Schematic/Block Diagram

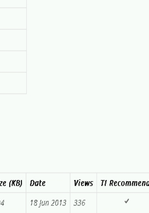
Quickly understand overall system functionality.



Download Schematic

Test Data

Get results faster with test and simulation data that's been verified.



Download Test Data

Design Files

Download ready-to-use system files to speed your design process. Get Viewer.

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Bill of Materials (BOM)

Find the complete list of components in this reference design.

Download BOM

TI Devices (4)

Order samples, get tools and find more information on the TI products in this reference design.

Part Number	Name	Product Family	Sample & Buy	Design Kits & Evaluation Modules
ADS129B	8-Channel, 24-Bit Analog-To-Digital Converter With Integrated ECG Front End	Analog Front End (AFE)	Sample & Buy	View Design Kits & Evaluation Modules
OPA348	1MHz, 45uA, RRIO, Single Op Amp	Operational Amplifier (Op Amp)	Sample & Buy	View Design Kits & Evaluation Modules
SN74LVC2G00	Dual 2-input positive-NAND Gate	Logic	[illegible]	View Design Kits & Evaluation Modules

Show More

CAD/CAE symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
ADS129B	TQFP (PAG) | 64	Download	Download
	NFBGA (ZKG) | 64	Download	-
OPA348	SOT (DBV) | 5	Download	Download
	SOT (DCK) | 5	Download	Download
	SOIC (D) | 8	Download	Download
SN74LVC2G00	SSOP (DCT) | 8	Download	-
	VSSOP (DCU) | 8	Download	-
	DSBGA (YZP) | 8	Download	-
TLV3401	SOT (DBV) | 5	Download	Download
	SOIC (D) | 8	Download	Download
	PDIP (P) | 8	Download	Download

Texas Instruments and Accelerated Designs Inc. have collaborated together to provide TI customers with schematic symbols and PCB layout footprints for TI products.

Step 1: Download and install the Ultra Librarian software ZIP: 62MB

Step 2: Download the Symbol and Footprint .bxl file.

- read more -

Technical Documents

User Guides (1)

Title	Abstract	Type	Size (KB)	Date	Views	TI Recommends
TIPD111 Verified Design Reference Guide		PDF	794	18 Jun 2013	336	✓

Design Files (3)

Title	Abstract	Type	Size (KB)	Date	Views
TIPD111 Gerber		ZIP	746	20 Sep 2013	63
TIPD111 BOM		PDF	70	20 Sep 2013	79
TIPD111 Schematic		PDF	161	20 Sep 2013	334

Related Tools & Software

Development Tools (1)

Name	Part Number	Tool Type
SPICE-Based Analog Simulation Program	TINA-TI	Circuit Design & Simulation

Software (2)

- TIPD111 Simulation
  (ZIP, 44 KB) 64 views, 20 Sep 2013
- TIPD111 Design File
  (ZIP, 883 KB) 139 views, 19 Sep 2013

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