PmodACL2™ Digital Accelerometer Reference Manual

Revision: November 9, 2012
Note: This document applies to REV A of the board
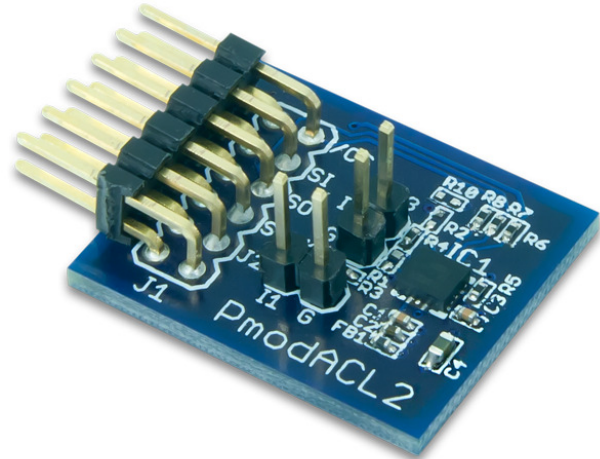
Overview

The PmodACL2 is a 3-axis digital accelerometer module powered by the Analog Devices ADXL362.

Features include:

- user-selectable resolution
- single or double-tap detection
- activity and inactivity monitoring
- free fall detection
- SPI Communication

Functional Description

The PmodACL2 uses a standard 12-pin connector and can communicate via SPI. While the ADXL362 is in Measurement Mode, it continuously measures and stores acceleration data in the X-data, Y-data, and Z-data registers.

Do not exceed 3.3V on the VCC power supply. Exceeding this limit could permanently damage the ADXL362.

Interface

All communications with the device must specify a register address and a flag that indicate whether the communication is a read or a write. Actual data transfer always follows the register address and communication flag.

Perform device configuration by writing to the control registers within the accelerometer. Access accelerometer data by reading the device registers.

You may find a full list of registers, their functionality, and communication specifications in the ADXL362 datasheet available at: www.analog.com.

Connector J1 – SPI Communications		
Pin	Signal	Description
1	~SS	Slave select
2	MOSI	SPI master out slave in data
3	MISO	SPI master in slave out data
4	SCLK	Serial clock
5	GND	Power supply ground
6	VCC	Power supply (3.3V)
7	INT2	Interrupt two
8	INT1	Interrupt one
9	NC	Not connected
10	NC	Not connected
11	GND	Power supply ground
12	VCC	Power supply (3.3V)

Table 1. *Interface Connector Signal Description*

The SPI standard uses four signal lines. These are slave select (~SS), master out slave in (MOSI), master in slave out (MISO), and serial clock (SCLK). These four signal lines map to the following signals on the ADXL345: ~SS corresponds to the chip select signal (~CS), MOSI corresponds to serial data input (SDI), MISO corresponds to serial data output (SDO), and SCK corresponds to the serial clock (SCLK). (See Table 1 for signal descriptions.)