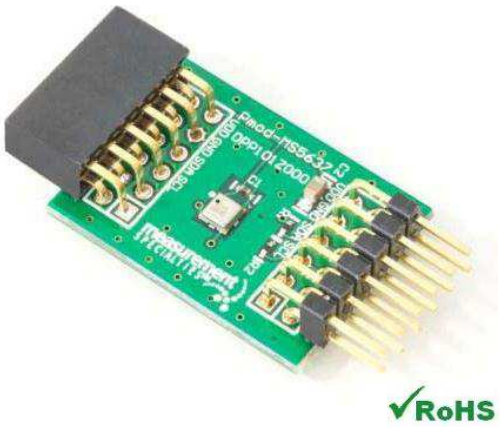


MEAS MS5637 PERIPHERAL MODULE

Digital Pressure
Digital Component Sensor (DCS) Development Tools

The MS5637 peripheral module provides the necessary hardware to interface the MS5637 digital barometric pressure and temperature sensor to any system that utilizes a Digilent Pmod™ compatible expansion ports configurable for I²C communication. The MS5637 sensor is a self-contained pressure and temperature sensor that is fully calibrated during manufacture. The sensor can operate from 1.5V to 3.6V. The sensor module includes a high-linearity pressure sensor and an ultra-low power 24 bit _Σ ADC with internal factory-calibrated coefficients.

Performance

- 300 to 1200mbar pressure range
- -40°C to 85°C temperature range
- Very low power consumption
- Operates from 1.5V to 3.6V
- Altitude resolution at sea level is 20 cm of air
- Fast conversion time – 0.5 mS typical

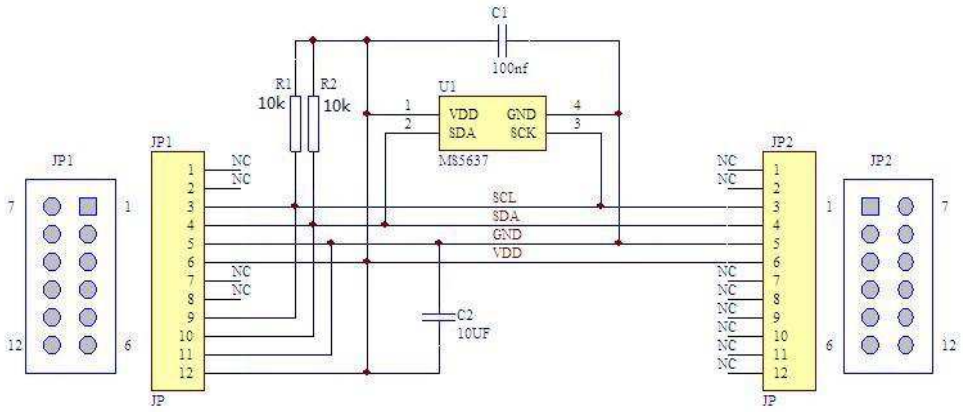
Specifications

- Measures pressure from 300mbar to 1200mbar
- Measures temperature from -40°C to 125°C
- I²C communication
- Fully calibrated
- Fast response time
- Very low power consumption

Features

- 12-pin connector compatible with Digilent Pmod™
- I²C interface
- Secondary 12-pin connector allows daisy chain
- FPGA bare metal drivers available for download
- µC C code drivers available for download
- 24 bit resolution for pressure
- 24 bit resolution for temperature
- Parameters stored on chip

Schematic



Connector Pin Assignments (I²C Communications)

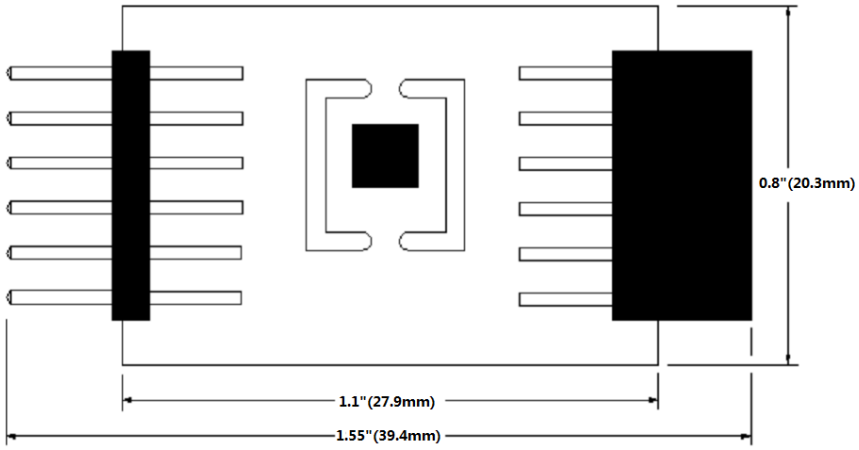
System Plug (Table 1)

Connector J1		
Pin No.	**Signal**	**Description**
1	N/C	Not Connected
2	N/C	Not Connected
3	SCL	I²C Serial Clock
4	SDA	I²C Serial Data
5	GND	Ground
6	Vdd	Power Supply
7	N/C	Not Connected
8	N/C	Not Connected
9	SCL	I²C Serial Clock
10	SDA	I²C Serial Data
11	GND	Ground
12	Vdd	Power Supply

Expansion Socket (Table 2)

Connector J2		
Pin No.	**Signal**	**Description**
1	N/C	Not Connected
2	N/C	Not Connected
3	SCL	I²C Serial Clock
4	SDA	I²C Serial Data
5	GND	Ground
6	Vdd	Power Supply
7	N/C	Not Connected
8	N/C	Not Connected
9	N/C	Not Connected
10	N/C	Not Connected
11	N/C	Not Connected
12	N/C	Not Connected

Dimensions



Detailed Description

I²C Interface

The peripheral module can interface to the host in one of two ways. It can plug directly into a Digilent Pmod™ compatible port (configured for I²C) through connector J1, or to other I²C boards that have a Digilent Pmod™ compatible expansion connector.

I²C Interface (Daisy Chaining Modules)

Connector J1 provides connection of the module to the Digilent Pmod™ host. The pin assignments and functions adhere to the Digilent Pmod™ standard as shown in Table 1. The J2 connector allows additional Digilent Pmod™ modules to be connected in a daisy-chain fashion. See Table 2.

External Control Signals

The module operates as an I²C slave using the standard 2 wire I²C connection scheme. The module is controlled by the host (through the Digilent Pmod™ connector). In cases where one or more of the SCL and SDA signals are driven from an external source, resistors R1, R2 provide pull-up. However, this also increases the apparent load to the external driving source. If the external source is i*n*capable of driving these loads, they could be removed from the board.

Ordering Information

Description	Part Number
MEAS MS5637 PERIPHERAL MODULE	DPP101Z000

Reference Material

- Detailed information regarding operation of the IC:
  MEAS MS5637 Datasheet
- Detailed information regarding the single port mother board driver:
  MEAS MS5637 for MicroZed Driver
- Complete software sensor evaluation kit for the single port mother board:
  MEAS MS5637 for MicroZed Software
- Detailed information regarding the multiple port mother board driver:
  MEAS MS5637 for ZedBoard Driver
- Complete software sensor evaluation kit for multiple port mother board:
  MEAS MS5637 for ZedBoard Software

te.com/sensorsolutions

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