

MC13192 Accelerometer Demonstration Program

Quick Start Guide

1 Introduction

This document describes the procedures necessary to run the MC13192 Accelerometer Demonstration Program.

The Accelerometer Demonstration is programmed into flash from the factory and is optimized for low power consumption. The output power is set to -6dBm versus the nominal 0dBm output power setting for 802.15.4 and Zigbee applications. The -6dBm power setting should not be used for range testing and verification. To test the effective range of the boards, use the Range Demonstration application which has the output power set to the nominal 0dBm output power setting. The Range Demonstration should be uploaded to the board's program flash memory and run from there.

Refer to AN2728/D for more information on running the Range Demonstration application.

2 Board Setup

To setup both boards for operation, (transmit and receive) perform the steps shown in this section. Refer to Figure 1 for the Sensor Application Reference Design (SARD) board layout.

2.1 Board One Setup (Receive)

1. Connect a SARD board to the PC serial port using a DB9 male/female serial cable included in the development kit.
2. Remove all jumpers from header J105.
3. Connect a 9V battery or the 5.5-9V power supply to the power supply connector and set switch S105 to the "ON" position.
4. Press the Reset Button S106. Board One is now in receive mode.

2.2 Board Two Setup (Transmit)

1. Connect a 9V battery or the 5.5-9V supply to the power supply connector and power on the board by setting switch S105 to the “ON” position.
2. While holding down S101, press the Reset Button S106 and release S101. LED D104 should be blinking. Board Two is now in transmit mode.

2.3 Verifying Operation

1. Verify that the boards are communicating by ensuring that LED D103 on the receive board (Board One) is blinking. If it is not, press the Reset Button S106 on Board One again.

3 Running the Software

1. Insert the CD supplied with the kit into your PC’s CD-ROM drive. If autorun is not enabled on your machine, locate the root directory on the CD and run the `home.htm` file.
2. After running the `home.htm` file, select the `MC1319x Family (MC13191/92) Software and Development Tools` option.
3. Next, select the `Triax Software for SMAC Accelerometer Demo` option. When prompted, select the `Save` option and save the `Triax_Software.exe` file to a suitable location on your computer’s hard drive.
4. Run the `Triax_Software.exe` from the location you chose on your computer’s hard drive.
5. After execution of the Triax program, the software prompts you to select the proper communications port for your PC. This is the COM port to which the receiver board (Board One) is connected.

4 Viewing Data

After selecting the communications port, several methods are available to view the data being sent from the accelerometers on the transmitter board (Board Two).

1. **Sensor Data** — This application shows the raw data that is sent from the accelerometers and processed by the MCU. The following data is provided.
 - X, Y, and Z accelerometer output in volts
 - 8-bit A/D readings (0-255)
 - The output of each axis is converted into g's.
2. **G Mouse** — This application displays the location of the board based on movement of the transmitter board. To move the boxes on the display which represent the X, Y, and Z axis, pick up the transmitter board (Board Two) and move it to different angles.
3. **Tilt Module** — This application translates the g's experienced in each axis to an angle of rotation. To view different angles, rotate the transmitter board (Board Two).
4. **Shipping** — This application timestamps when a pre-determined threshold is violated or when a board is turned upside down.

NOTE

If using batteries as the power source and the accelerometer demonstration behavior becomes erratic, replace the batteries.

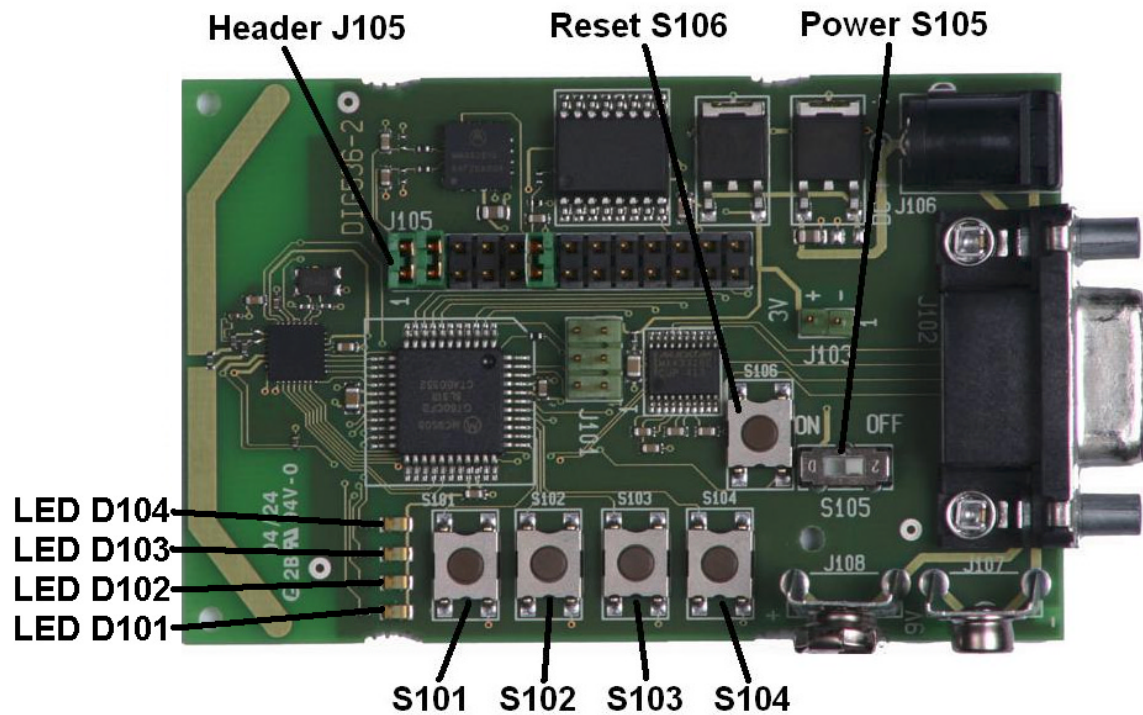


Figure 1. SARD Board Component Location

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Freescale Semiconductor Literature Distribution
P.O. Box 5405, Denver, Colorado 80217
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