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RoBoard Module RM-G146

Manual V1.01

The Heart of Robotics

Jan 2011

DMP Electronics Inc

ROBOARD

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Chapter 1

Introduction

1.1 Packing List

| Product Name | Package |
|--|------------------------|
| RM-G146 | RoBoard Module RM-G146 |
|  | |
| Cable-RM-1 | 1x6 pin Cable x 1 |
|  | |

1.2 Product Description

The RoBoard Module RM-G146 is fully integrated 9-Axis module, combines 3-axis magneto-resistive sensor and 3-axis accelerometer with the LSM303DLH, and 3-axis angular rate sensor (Gyroscope) with the MPU-3050, simply and all done through I2C interface, the dimension of it is wee as 20 x 20 mm.

The MPU-3050 is comprised of an embedded 3-axis digital gyroscope. offers a programmable full-scale range from ± 250 to ± 2000 degrees per second which ensures precision tracking of both fast and slow motions.

The LSM303DLH is a system-in-package featuring a 3D digital linear acceleration sensor and a 3D digital magnetic sensor. It has a linear acceleration full-scale of $\pm 2 g / \pm 4 g / \pm 8 g$ and a magnetic field full-scale of $\pm 1.3 / \pm 1.9 / \pm 2.5 / \pm 4.0 / \pm 4.7 / \pm 5.6 / \pm 8.1$ gauss, both fully selectable by the user.

1.3 Specifications

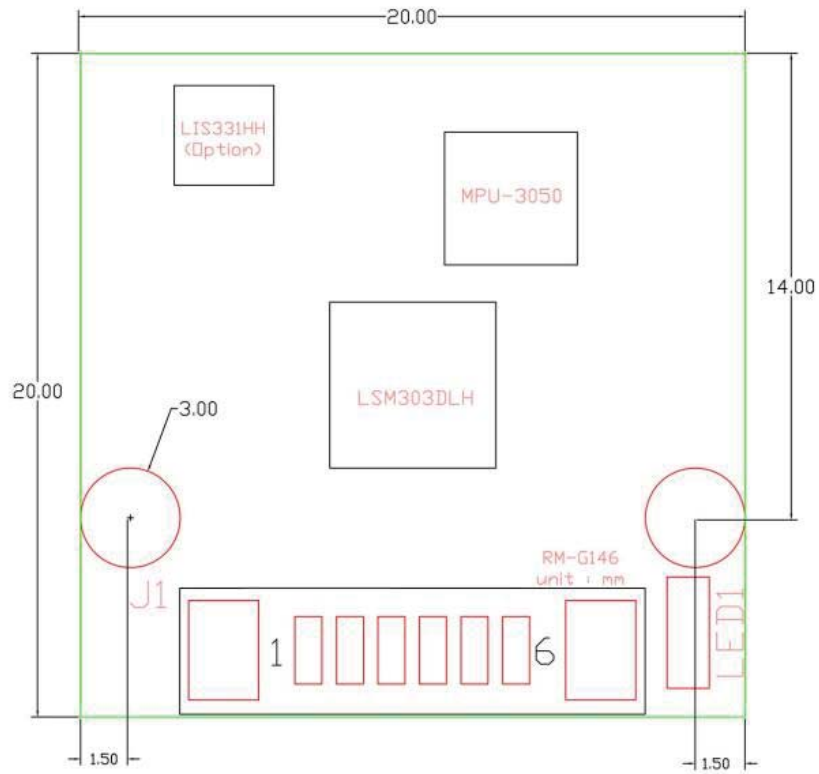
| | RM-G146 9-Axis sensor module |
|-----------------|---|
| Gyroscope | MPU-3050 |
| Magnetometer | LSM303DLH |
| Accelerometer | LSM303DLH |
| Interface | I ² C |
| Default Address | Gyroscope : 0xD0 |
| | Magnetometer : 0x3C |
| | Accelerometer : 0x30 |
| Connectors | 1.25mm 6-pin wafer for I ² C x 2 |
| Power Input | DC-in 5V |
| Dimension | 20mm X 20mm |
| Weight | 2.5g |

1.4 I²C Address

- Magnetometer : 0x3C
- Gyroscope : 0xD0
- Accelerometer : 0x30

ROBOARD

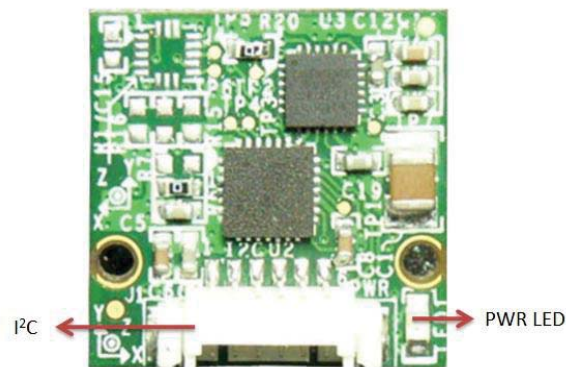
1.5 Board Dimension



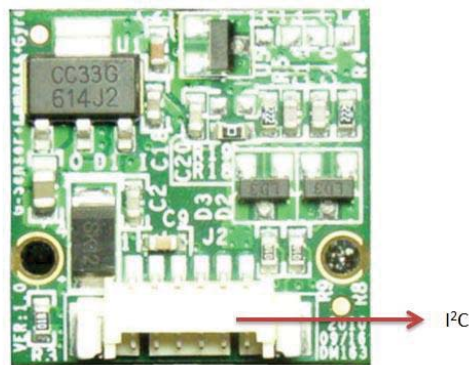
Chapter 2

Installation

2.1 Board Outline



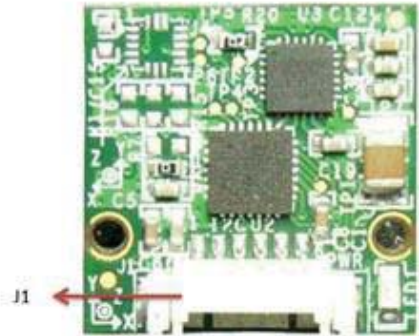
Top Side



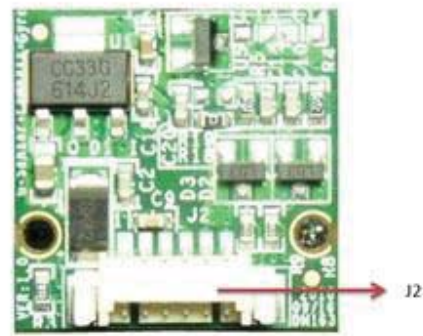
Bottom Side

2.2 Connectors & Pin 1 Location

Connectors



Top Side

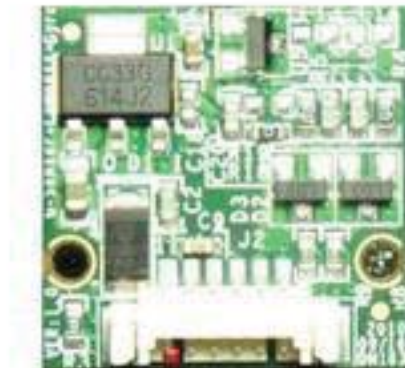


Bottom Side

Pin 1 Location



Top Side



Bottom Side

2.3 Connectors & Jumpers Summary

Summary Table

| | Description | Type of Connections | Pin |
|-----------|-------------------------------------|---------------------|-------|
| J1 | I ² C connector (Top) | Wafer, 2.54mm,6x1 | 6-pin |
| J2 | I ² C connector (Bottom) | Wafer, 2.54mm,6x1 | 6-pin |

2.4 Pin Assignments

J1: I²C connector (Top)

| Pin # | Signal Name |
|-------|-------------|
| 1 | Vcc (Red) |
| 2 | GND (Black) |
| 3 | SCL (Blue) |
| 4 | SDA (Green) |
| 5 | X (White) |
| 6 | X (Orange) |

J2: I²C connector (Bottom)

| Pin # | Signal Name |
|-------|-------------|
| 1 | Vcc (Red) |
| 2 | GND (Black) |
| 3 | SCL (Blue) |
| 4 | SDA (Green) |
| 5 | X (White) |
| 6 | X (Orange) |

Chapter 3

Development Note

Sample and development code

The RM-G146 provides sample and development code.
Please download from official website: <http://www.roboard.com>

Warranty

This product is warranted to be in good working order for a period of one year from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster. Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, originality to use this product. Vendor will not be liable for any claim made by any other related party. Return authorization must be obtained from the vendor before returned merchandise will be accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description.