OVERVIEW

The iCog Rate sensor uses the Freescale MMA8652FC 3-axis, 12-bit digital accelerometer. Users should consult the Freescale MMA8652FC datasheet for more information about the sensor.

CognIoT™ iCog™ sensor boards come fitted with an 'ID-IoT' system chip. This is an EEPROM with 1kbytes of user storage (for calibration data etc.). The ID-IoT chip contains a unique 32-bit number to identify the sensor board.

Bottom View.
iCog Rs.2 Rate Sensor

Top View.
iCog Rs.2 Rate Sensor

KEY FEATURES

The Sensor – MMA8652FC

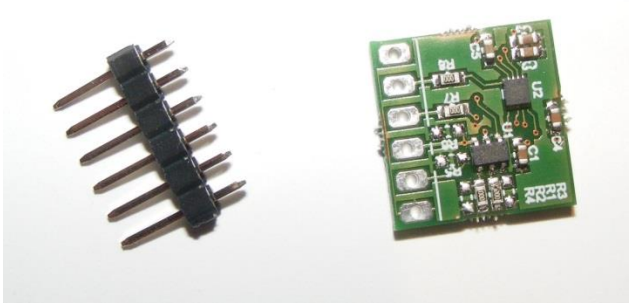
- 3-axis accelerometer
- 12-bit resolution
- Interrupt on pre-programmed inertial events.
- ±2g, ±4g and ±8g dynamically selectable full scale ranges
- 4 channels of motion detection – freefall, motion, pulse and transient
- Portrait/landscape detection with programmable hysteresis
- 32-sample FIFO
- 1024 counts/g
- Low-pass and high-pass filters modes.

ID-IoT chip – eeprom

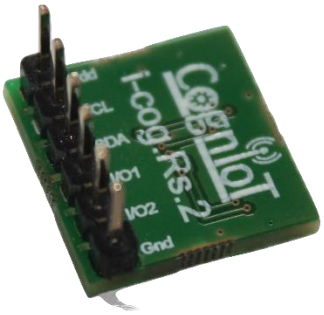
- Prewired for base I^2C address
- Configurable for different addresses
  - A0,A1 address selection may be changed
  - Allows up to 4 icogs on same bus
  - See application note for details
- 1KB user data space
- 32-bit Unique ID No. (UID)
- Option to fit pull up resistors on SDA/SCL lines if required

SHIPPING AND ASSEMBLY

The iCog Sensors are shipped with a 6-way 0.1” header that should be soldered into the sensor board.



iCog and 6-way header.

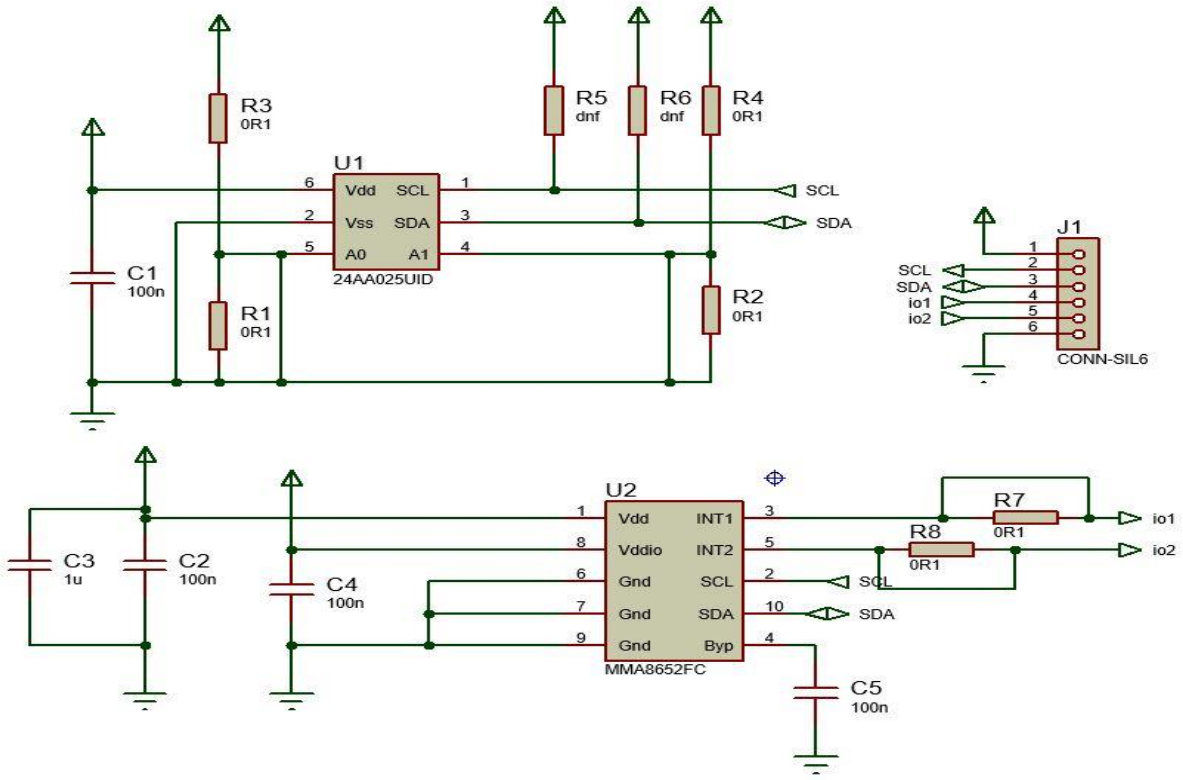


Assembled iCog sensor

DIMENSIONS

The family of iCog sensor boards are 15mm x 15mm

SCHEMATIC



CONNECTOR

The CognIoT™ iCog™ sensor board is connectable via a 6-way 0.1" (2.54mm) pitch header.
Pin-out is:

1 – Vdd (nominally 3.3V)
2 – SCL (I2C clock)
3 – SDA (I2C data)
4 – IO1 – dependant on fitted sensor (see schematic)
5 – IO2 – dependant on fitted sensor (see schematic)
6 - GND

ORDERING INFORMATION

Part Number	Description
iCog-Rs.2	iCog™ Accelerometer Sensor

REVISION HISTORY

Version	Date	Comment
V0.1	May 2016	First version.
V1.0	Sep 2016	Minor cosmetic changes. Images updated.