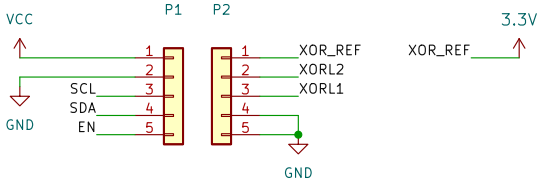
Inertial Measurement Unit (IMU) Stamp

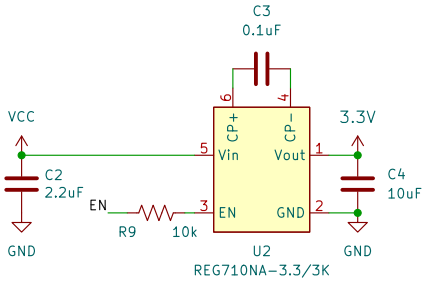
Vin: 1.8–5.5V
Imax: calculate

I/O

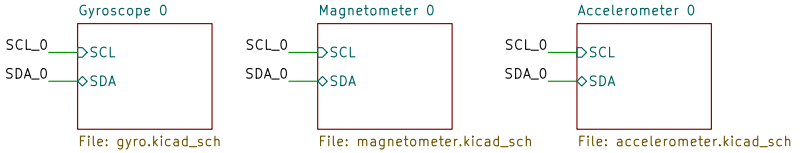
2 sides of castellated holes on the edge of board



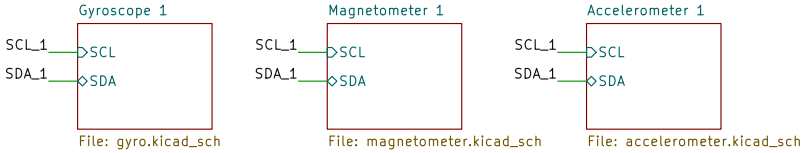
3.3V Regulator



BLOCK 0

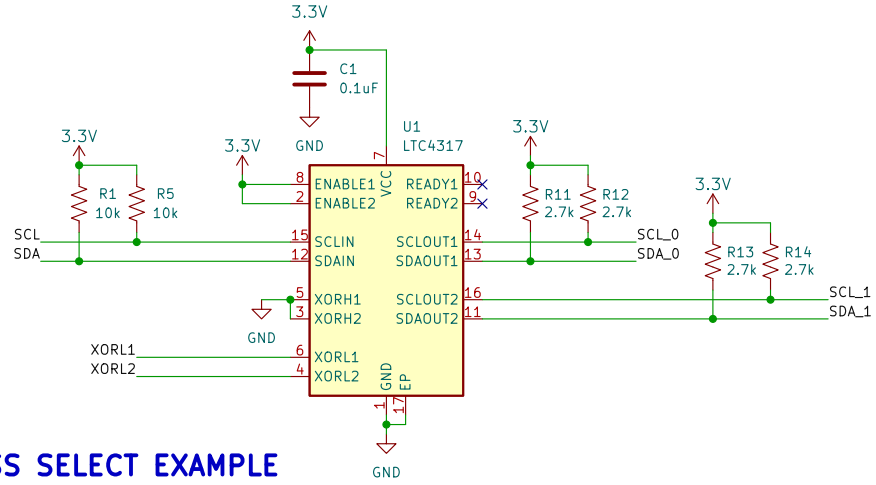


BLOCK 1



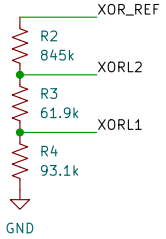
I2C TRANSLATOR

see LTC4317 datasheet for information on setting the addresses of these.



I2C ADDRESS SELECT EXAMPLE

XOR1 = 0x2
XOR2 = 0x4



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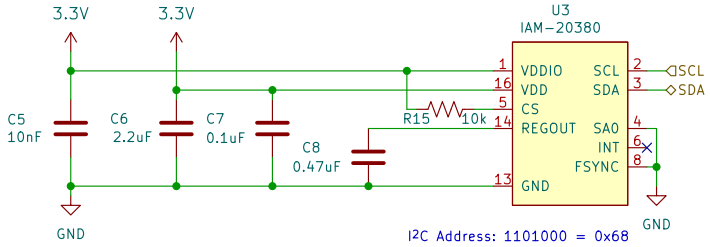
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (6.0.5)		Id: 1/7



10.1 ORIENTATION OF AXES

Figure 13 shows the orientation of the axes of sensitivity and the polarity of rotation. Note the pin 1 identifier (•) in the figure.

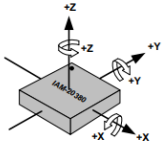
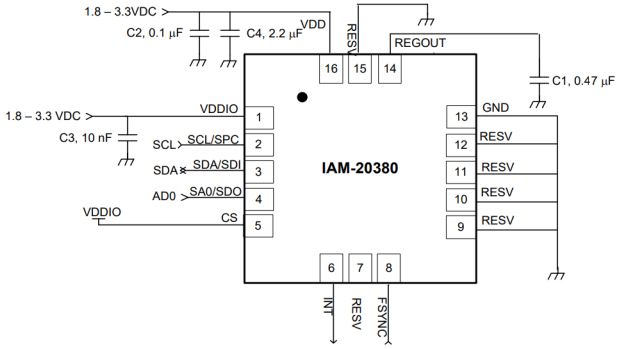


Figure 13. Orientation of Axes of Sensitivity and Polarity of Rotation

TYPICAL OPERATING CIRCUIT



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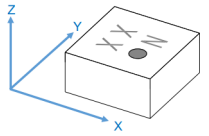
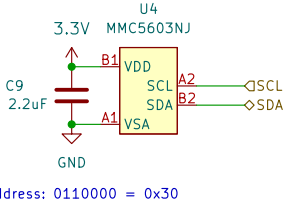
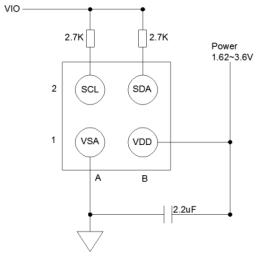
File: gyro.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (6.0.5)		Id: 2/7

RELATIONSHIP BETWEEN THE MAGNETIC FIELD AND OUTPUT CODE
The measurement data increases as the magnetic flux density increases in the arrow directions.





EXTERNAL CIRCUITRY CONNECTION
The MMC5603NJ can operate from a single 1.62V to 3.6V supply. The circuit connection diagrams below illustrate power supply connection options.



<TOP VIEW>
Connection Block Diagram

Sheet: /Magnetometer 0/		
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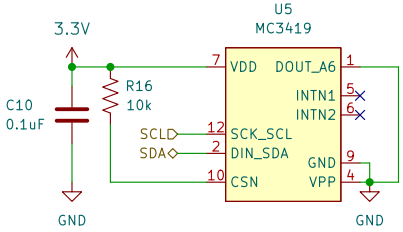
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (6.0.5)		Id: 3/7



I2C Address: 1001100 = 0x4C

programmable interrupt:
set to open-drain

3.2 PACKAGE ORIENTATION

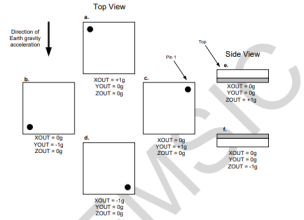


Figure 3. Package Orientation

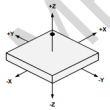
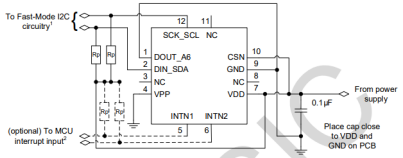


Figure 4. Package Axis Reference

3.4 TYPICAL APPLICATION CIRCUITS



NOTE[1]: Rp are typically 4.7kΩ pullup resistors to VDDIO, per I2C specification. When VDDIO is powered down, DIN_SDA and SCK_SCL will be driven low by internal ESD diodes.
NOTE[2]: Attach typical 4.7kΩ pullup resistor if INTN is defined as open-drain.

Figure 5. Typical I2C Application Circuit

Sheet: /Accelerometer 0/		
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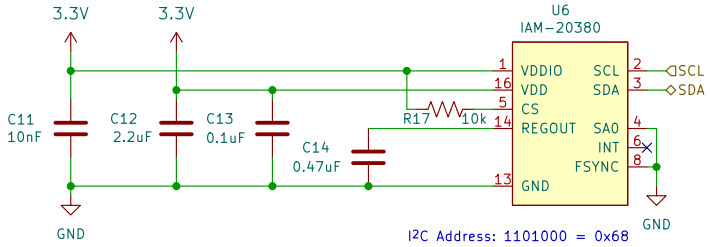
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (6.0.5)		Id: 4/7



10.1 ORIENTATION OF AXES

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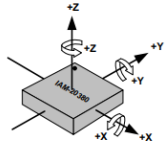
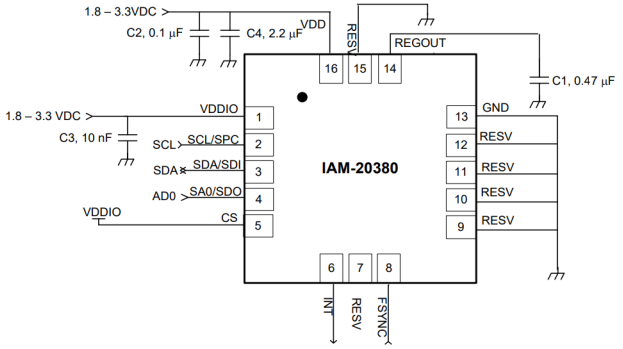


Figure 13. Orientation of Axes of Sensitivity and Polarity of Rotation

TYPICAL OPERATING CIRCUIT



Sheet: /Gyroscope 0/		
File: gyro.kicad_sch		
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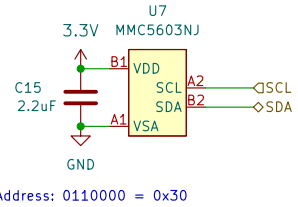
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (6.0.5)		Id: 5/7



RELATIONSHIP BETWEEN THE MAGNETIC FIELD AND OUTPUT CODE

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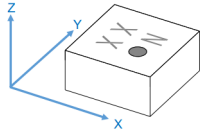

EXTERNAL CIRCUITRY CONNECTION

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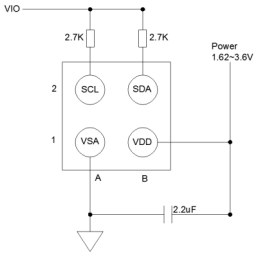
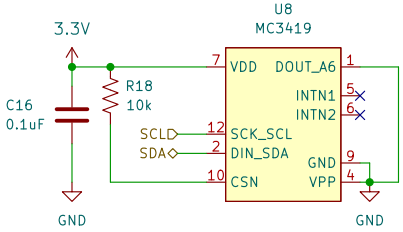


<TOP VIEW>

Connection Block Diagram

Sheet: /Magnetometer 1/		
File: magnetometer.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (6.0.5)		Id: 6/7



I2C Address: 1001100 = 0x4C

programmable interrupt:
set to open-drain

3.2 PACKAGE ORIENTATION

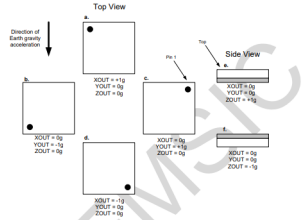


Figure 3. Package Orientation

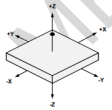
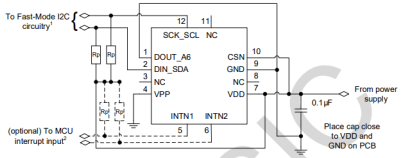


Figure 4. Package Axis Reference

3.4 TYPICAL APPLICATION CIRCUITS



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NOTE[2]: Attach typical 4.7kΩ pullup resistor if INTN is defined as open-drain.

Figure 5. Typical I2C Application Circuit

Sheet: /Accelerometer 1/		
File: accelerometer.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (6.0.5)		Id: 7/7