6DoF IMU - LSM6DSV16X
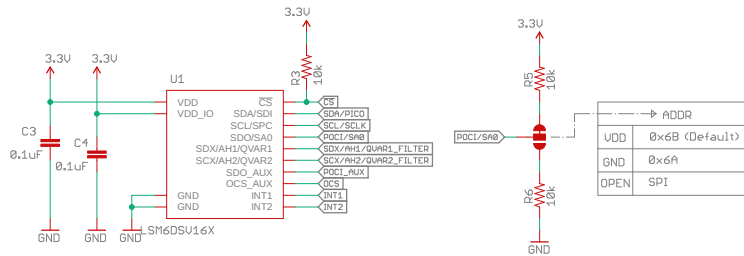
VDD Range: 1.71V - 3.6V
VDDIO Range: 1.62V - 3.6V

I2C Address (selectable): 0x6B (Default)

3.3V

U1
3.3V 3.3V

VDD   CS
VDD_IO   SDA/SDI   CS
         SCL/SPC   SDA/PICO
C3   SDO/SA0   SCL/SCLK
0.1uF C4   POCI/SA0
       0.1uF SDX/AH1/QVAR1   SDX/AH1/QVAR1_FILTER
             SCX/AH2/QVAR2   SCX/AH2/QVAR2_FILTER
             SDO_AUX   POCI_AUX
             OCS_AUX   OCS
       GND   INT1   INT1
       GND   INT2   INT2

LSM6DSV16X

GND GND GND

R3
10k

3.3V

R5
10k

POCI/SA0

R6
10k

GND

	ADDR
VDD	0x6B (Default)
GND	0x6A
OPEN	SPI

LSM6DSV16 MODES
MODE1: Peripheral-only mode
    I2C or SPI
MODE2: Sensor Hub mode
    I2C or SPI with controller I2C port
MODE 3 and 4: AUX SPI mode
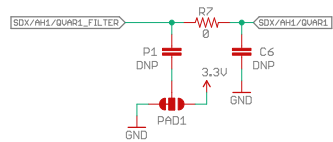   I2C and SPI access (Multi-read)

Jumpers

3.3V

2.2k
R2   SDA/PICO

I2C_PU

2.2k
R1   SCL/SCLK

Cut traces to remove I2C
pull-up resistors.

3.3V

R4
4.7k

LED
Cut trace to
disconnect Power
LED.

GND

SDX/AH1/QVAR1_FILTER   SCX/AH2/QVAR2_FILTER

SDX   SCX

GND   GND
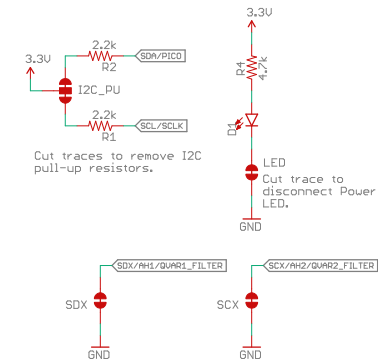
If using Mode 2 (Sensor Hub Mode),
or analog capabilities of sensor, cut both traces.

Analog In (QVar) - Filter Circuit

Cut SCX and SDX jumpers to utilize analog
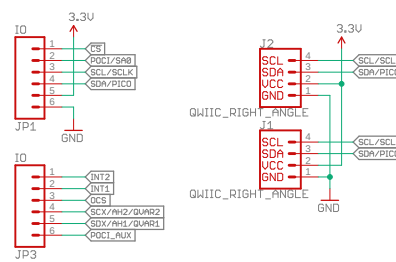input cabalities (see "Jumpers" section).

SDX/AH1/QVAR1_FILTER   R7   SDX/AH1/QVAR1
                       0

P1   C6
DNP   3.3V   DNP

PAD1   GND

GND

You can select whether P1 is tied to
GND (0) or tied to 3v3 (1) using the PAD1 jumper.

SCX/AH2/QVAR2_FILTER   R8   SCX/AH2/QVAR2
                       0

P2   C5
DNP   3.3V   DNP

PAD2   GND

GND
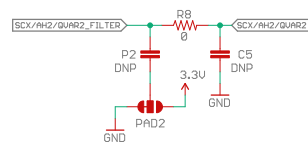
You can select whether P2 is tied to
GND (0) or tied to 3v3 (1) using the PAD2 jumper.

Some suggested configurations might include a voltage divider or
capacitor-resistor-diode. More information can be found in the "QVAR Sensing Channel"
application note found here:
https://www.st.com/en/mems-and-sensors/lsm6dsv16x.html#

Connectors

IO   3.3V
JP1
1 CS
2 POCI/SA0
3 SCL/SCLK
4 SDA/PICO
5
6
GND

I2
QWIIC_RIGHT_ANGLE
4 SCL   SCL/SCLK
3 SDA   SDA/PICO
2 VCC
1 GND

3.3V

IO
JP3
1 INT2
2 INT1
3 OCS
4 SCX/AH2/QVAR2
5 SDX/AH1/QVAR1
6 POCI_AUX

J1
QWIIC_RIGHT_ANGLE
4 SCL   SCL/SCLK
3 SDA   SDA/PICO
2 VCC
1 GND

GND

TITLE: SparkFun_6DoF_LSM6DSV16X

Design by: Elias Santistevan

REV:
v10

Date: 4/12/2023 10:23 AM   Sheet: 1/1

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