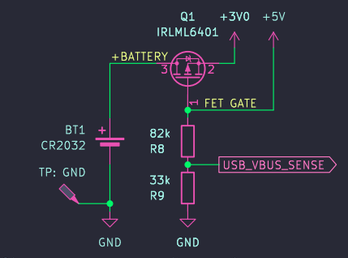
BATTERY & PROTECTION & OR

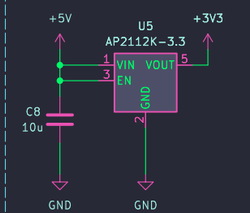


Q1 works as a reverse polarity protection,
closes on 5V presence from USB (Ugate > Usource)

CR2032 will have ~200mA till 2V5 discharge

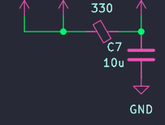
Energizer CR2032

LDO: 5V -> 3V3

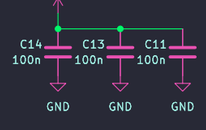


LDO, Udrop = 250mV

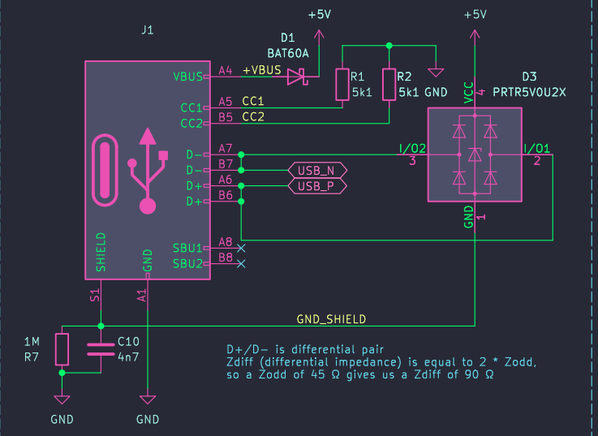
LOW-PASS FILTER



MCU CAPS



USB-C: POWER & MSD

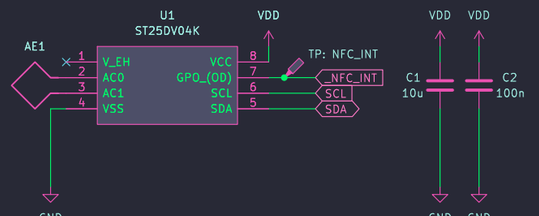


D+/D- is differential pair
Zdiff (differential impedance) is equal to 2 * Zodd,
so a Zodd of 45 Ω gives us a Zdiff of 90 Ω

NFC

I2C: system 0x57 (0xAE/0xAF), user 0x54 (0xA6/0xA7)

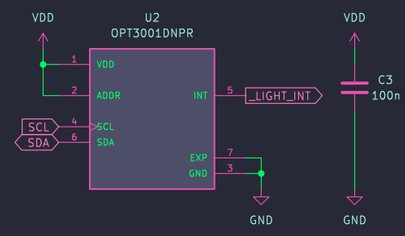
ST25DV ultra-low power: AN5733
Antenna design: AN2972
Antenna design double-layer : AN5605
FTM Data exchange: AN4910



C=28.5pF
equivalent L=4.9uH

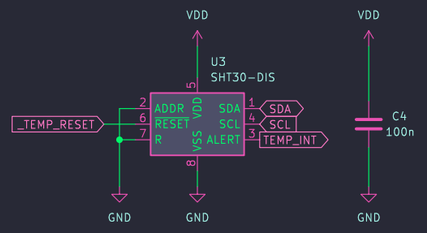
AMBIENT LIGHT SENSOR

I2C 0x45 (0x8A/0x8B), ADDR=VDD



TEMPERATURE & HUMIDITY SENSOR

I2C 0x44 (0x88/0x89), ADDR=GND

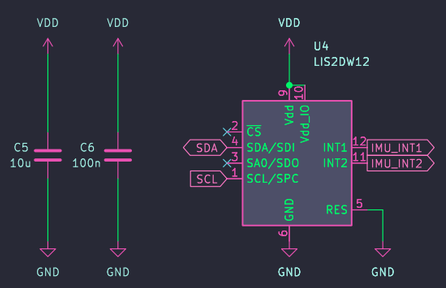


SHT3x-DIS

3-AXIS ACCELEROMETER

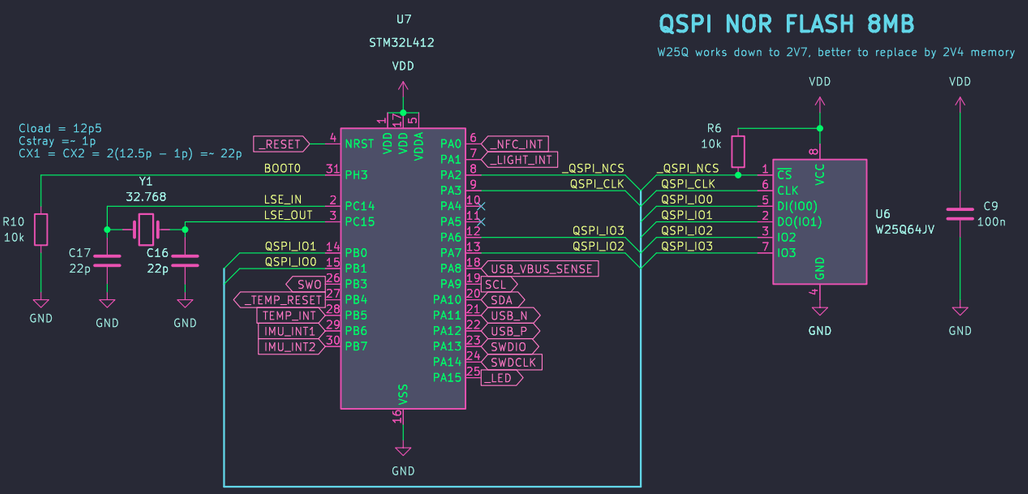
I2C 0x19 (0x32/0x33), ADDR(SA0)=VDD (internal pull-up)

Orientation: Can detect logger tilt
Shock and vibration monitoring: Shipping and warranty usage logging
Freefall: Logger fall detection

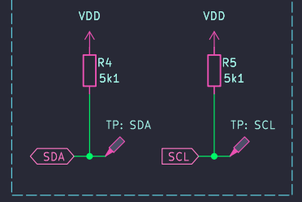


QSPI NOR FLASH 8MB

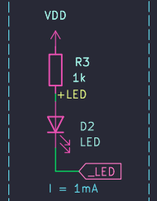
W25Q works down to 2V7, better to replace by 2V4 memory



I2C PULL-UPS

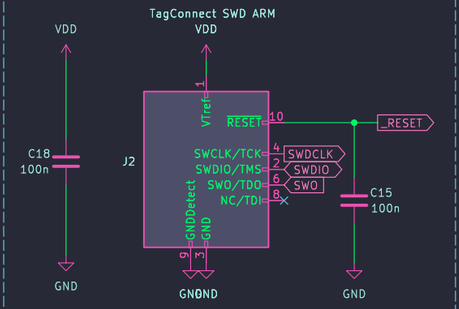


LED



I = 1mA

ARM SWD



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File: iot-risk-logger-stm32l4.kicad_sch

Title: IoT Risk data logger

Size: A3	Date: 2024-01-24	Rev:
KiCad E.D.A. kicad 7.0.9		Id: 1/1