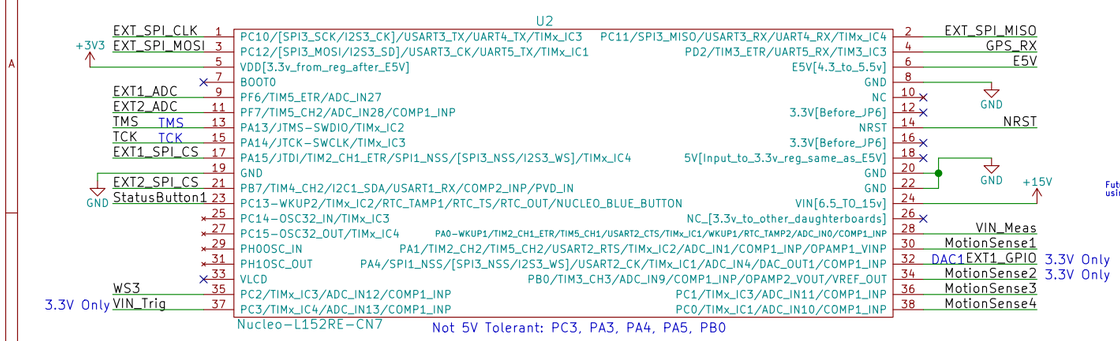
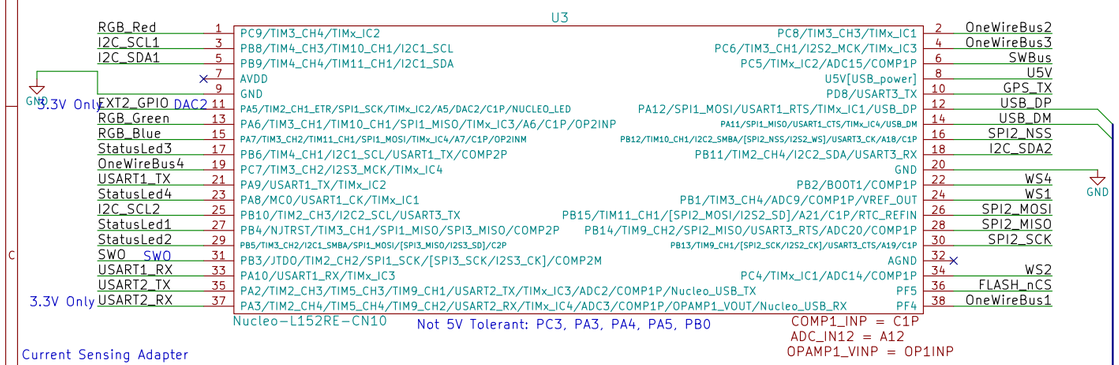
Potential Cases:
Hammond HM1071-ND
KICAD won't find unconnected nets



Not 5V Tolerant: PC3, PA3, PA4, PA5, PB0



Not 5V Tolerant: PC3, PA3, PA4, PA5, PB0

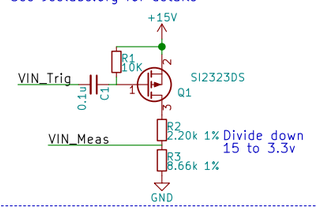
COMP1_INP = C1P
ADC_IN12 = A12
OPAMP1_VINP = OP1INP

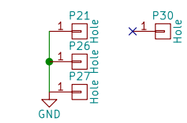
Current Sensing Adapter

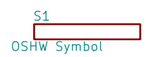
Idea seems simple, but implementation is complicated.
Better to make a stand alone system that can perform
the measurements and return them to us.

Using a MAX4239 with a ADS1240

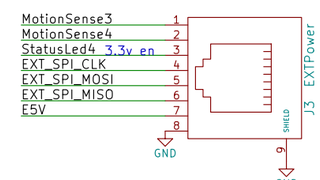
Voltage Measurement
Can trigger and read within 1ms
See Jeelabs.org for details

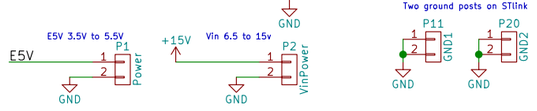


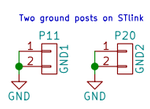




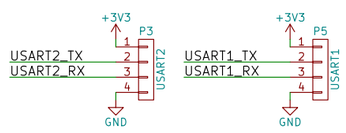
Expansion port for Power



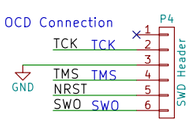




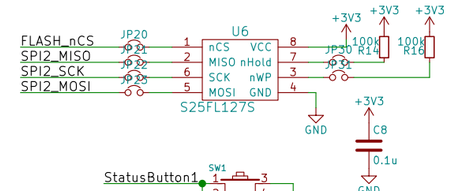
Connect when ST-Link is disconnected



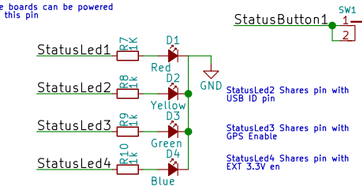
STLINK - Open OCD Connection

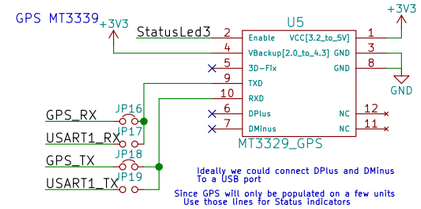


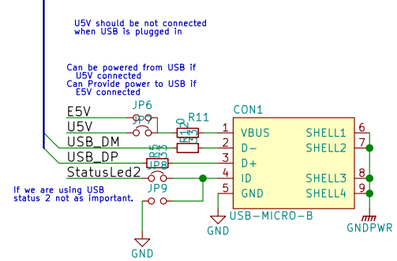
Flash Storage

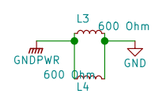


Future boards can be powered using this pin



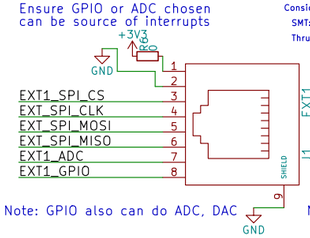






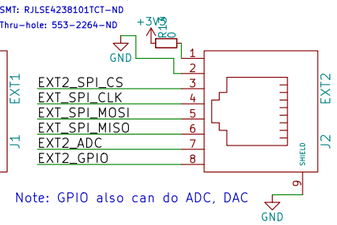
SPI Bus

Ensure GPIO or ADC chosen can be source of interrupts



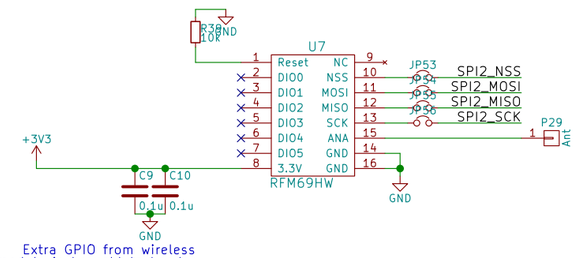
Note: GPIO also can do ADC, DAC

Consider SMT mount vs through hole
SMT: RJLSE4238101TCT-ND
Thru-hole: 553-2264-ND



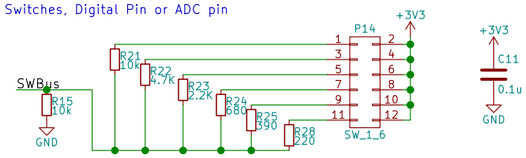
Note: GPIO also can do ADC, DAC

Wireless



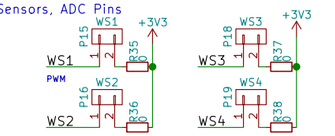
Extra GPIO from wireless module is brought to header

Switches, Digital Pin or ADC pin

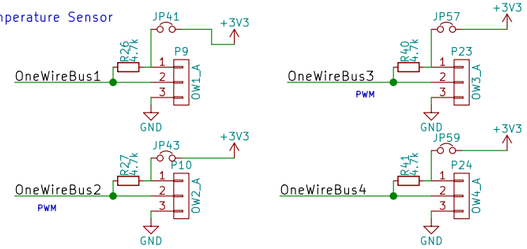


Theory Behind this circuit is to be able to measure multiple button or switch presses on one ADC pin

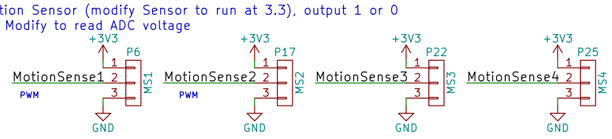
Water Sensors, ADC Pins



Digital Temperature Sensor

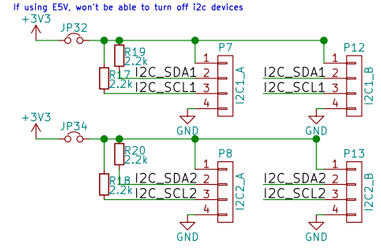


Motion Sensor (modify Sensor to run at 3.3), output 1 or 0
Modify to read ADC voltage



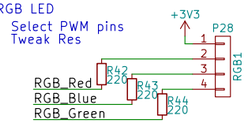
I2C Devices

If using E5V, won't be able to turn off I2c devices



RGB LED

Select PWM pins
Tweak Res



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Sheet: /
File: ProtoBoard.sch

Title: Expansion Board For STM32 Nucleo-L152RE

Size: B	Date: Sunday, April 05, 2015	Rev: AA
KiCad E.D.A. kicad (2015-03-26 BZR 5542)-product		Id: 1/1