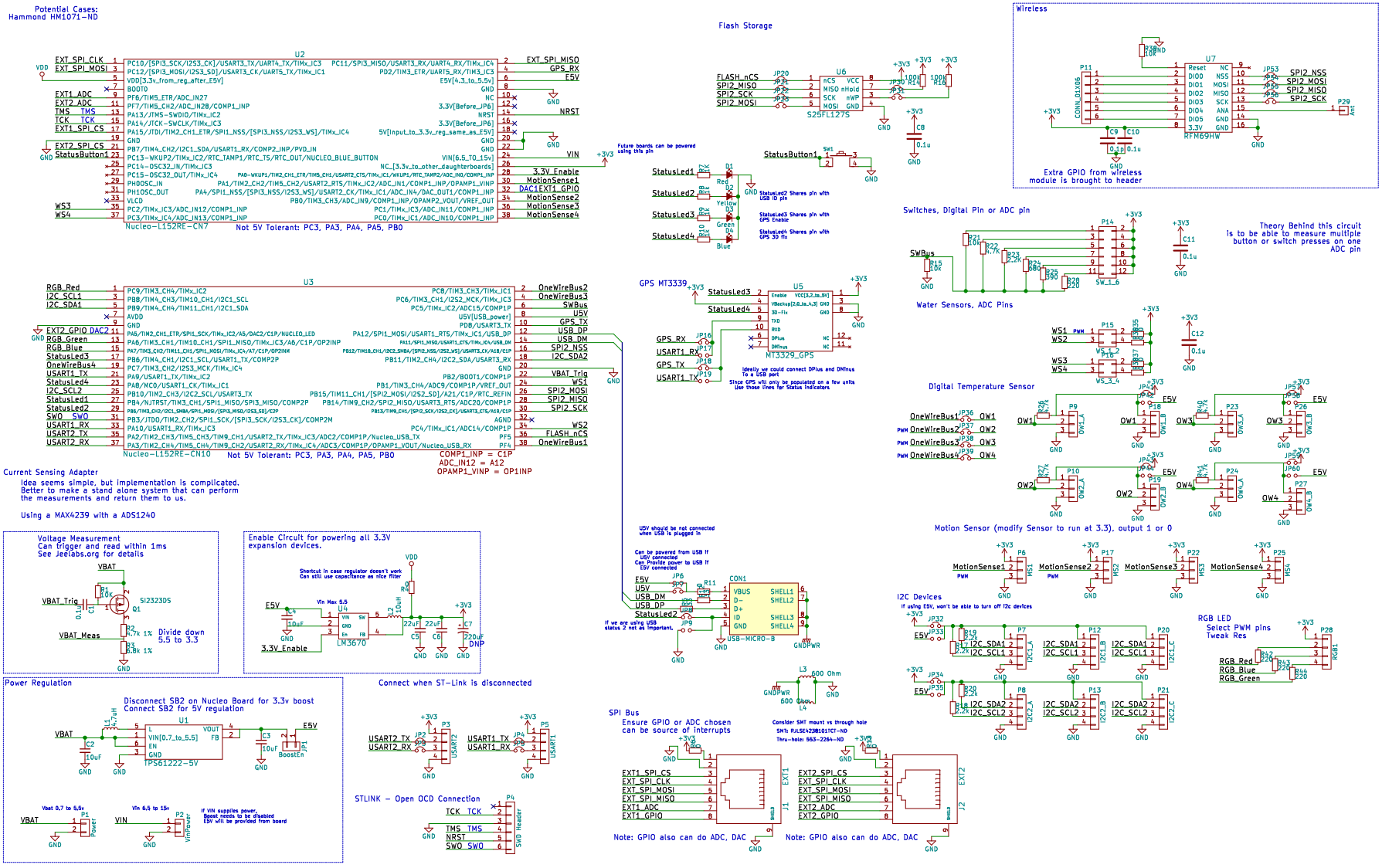
Potential Cases:
Hammond HM1071-ND
U2
Nucleo-L152RE-CN7
Not 5V Tolerant: PC3, PA3, PA4, PA5, PB0
Flash Storage
S25FL127S
Wireless
RFM69HW
Extra GPIO from wireless module is brought to header
Switches, Digital Pin or ADC pin
Theory Behind this circuit is to be able to measure multiple button or switch 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
I2C Devices
If using 5V, won't be able to turn off I2C devices
RGB LED
Select PWM pins
Tweak Res
U3
Nucleo-L152RE-CN10
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
GPS MT3339
MT3329_GPS
Ideally we could connect DPlus and DMinus To a USB port
Since GPS will only be populated on a few units Use those lines for Status Indicators
Voltage Measurement
Can trigger and read within 1ms
See Jeelabs.org for details
Si2323DS
Divide down 5.5 to 3.3
Enable Circuit for powering all 3.3V expansion devices.
Shortcut in case regulator doesn't work Can still use capacitance as nice filter
LM3670
3.3V_Enable
USV should be not connected when USB is plugged in
Can be powered from USB If USV connected Can Provide power to USB If ESV connected
If we are using USB status 2 not as important.
USB-MICRO-B
Power Regulation
Disconnect SB2 on Nucleo Board for 3.3v boost
Connect SB2 for 5V regulation
TPS61222-5V
Vbat 0.7 to 5.5v
Vin 6.5 to 15v
If VIN supplies power, Boost needs to be disabled ESV will be provided from board
Connect when ST-Link is disconnected
STLINK - Open OCD Connection
SPI Bus
Ensure GPIO or ADC chosen can be source of Interrupts
Consider SMT mount vs through hole
SMTs RJLSE4238801CT-ND
Thru-hole 553-2284-ND
Note: GPIO also can do ADC, DAC
Note: GPIO also can do ADC, DAC