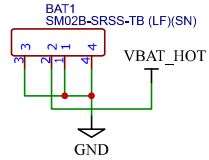
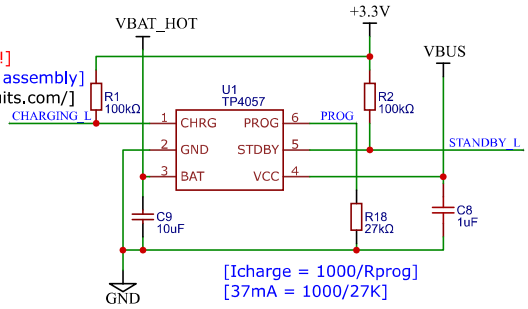
[JST Connector requires..]
[VREF/GND on pin 1 and V+ on pin 2]
[Battery plug just match PCB receptacle!!!]
[Will populate JST/BAT after primary-side assembly]
[Battery: P/N ASR00072, https://tinycircuits.com/]



[40mA 1C Lipo, LxWxH 23x10x4mm]



[Icharge = 1000/Rprog]
[37mA = 1000/27K]

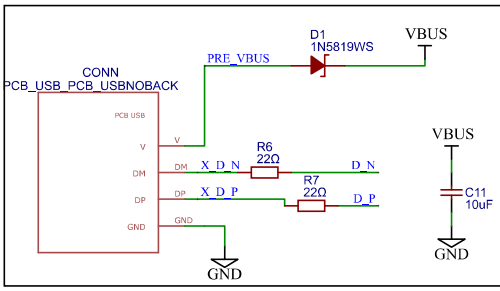
[Battery & Charger]

[To safely charge battery..]
[Select LIPO BAT with 1C >= 37mA]

[protection circuit on bat package]

checked

Revision Recommended
GREENWIRE VBUS to V_EN
(Not X_V_EN)
REASON: VCC should...
come up with VBUS
see square at nodes...
D2 & D5 ☐



[USB]

[Schottky Diode Reverse Polarity Protection]
[Temperature Rise Analysis]
[Iload (100mA) * VF (300mV) = 30mW]
[ΔT = RθJA * P = 80 °C/W * 0.03 W]
[ΔT = 2.4 °C (~4.32 °F)]

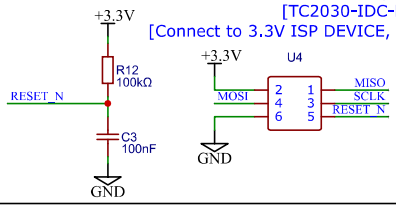
[50 Ohm controlled impedance]

checked

[Mechanical]

checked

[RESET, ISP PROGRAMMER]
[Tag Connect]
[TC2030-IDC-NL 6-pin]
[Connect to 3.3V ISP DEVICE, NOT 5V!]

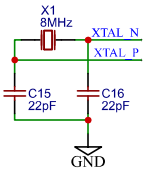


checked

[MCU]

[See ATMEGA32U4 D/S Fig 21-6]
[UVCC is NC when using self-powered 3.3V]
[As well as UCAP tied to 3.3V]
[place 0.1uF near each power pin]
[Bank PF only for ADC/Analog, no digital for noise reduction]
[Bank PB are all inputs]
[Bank PD are all outputs]
[AVCC & VCC are +3.3V]
[VBUS is 5V]
[*_L implies active low]
[MCU PIN 45 EP (Exposed Pad), should not be connected to GND (heatsucker)]
[PCINT7 is PWM, use for LED]
[Unsure if HWB# is necessary, broke out to TP]

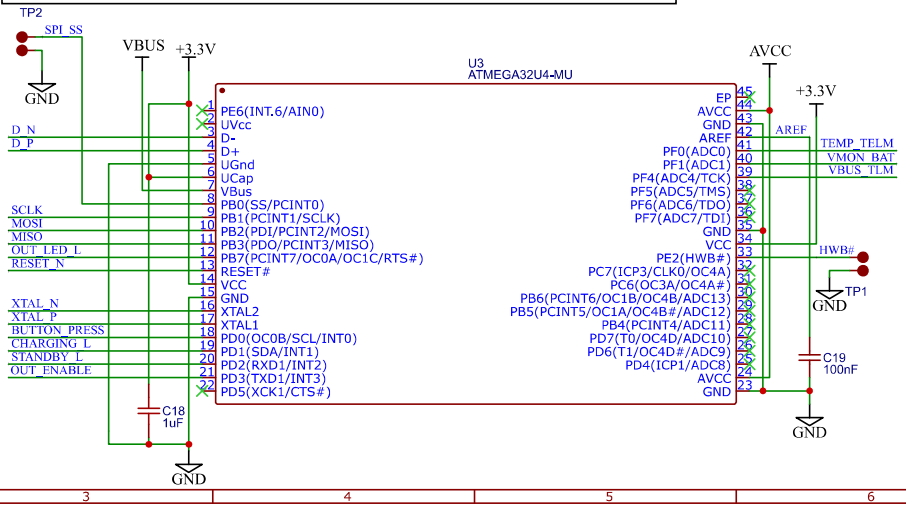
[Crystal]



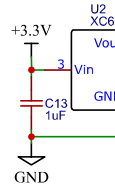
[ATMEGA SERIES REQUIRES 3.3V @8MHz]
[P/N: X50328MSB2GI]
[Load Capacitance (Cl) 20pF]
[MCU Pin Cap (Ci) assume 1-10pF]
[Stray Cap (Cs) assume ~2-5pF]
[Cap Eq: Ce + Ci = 2Cl - Cs]
[Ce= 2Cl - Cs - Ci]
[Ce= 20-36pF]

[assume 50 Ohm controlled impedance]

checked



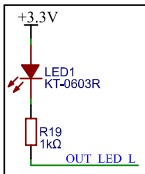
[Power Circuity
[PFET VGS -(0.



[+3.3V 2%T
[3.234V - 3.
[Vdropout =

[MCU ViH m
[MCU ViH m
[MCU ViH m
[VREGIN 3-5
[>200mV m

[MULTI-PURPOSE STATUS LED]



[Vf 1.9-2.2V]
[~1mA @1Kohm]
[MCU SINK, so that sleep state (HiZ)]
[...doesn't trigger LED on]

checked

TITLE: