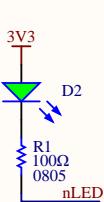
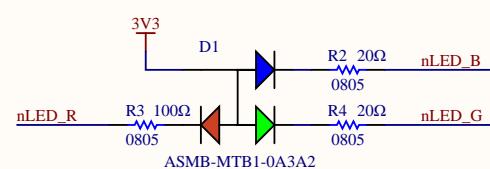


Test LEDs



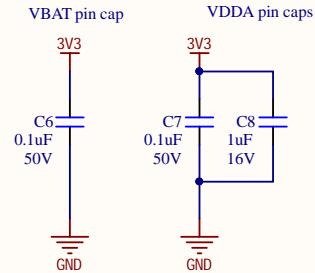
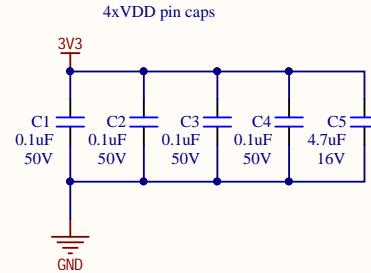
Current Calculations

Green LED voltage drop: 2.2V
 $I = (3.3-2.2)/100 = 11\text{mA}$

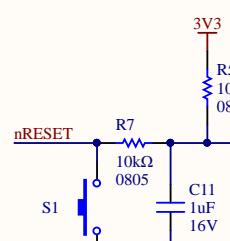
RGB LED voltage drops:

- Red: 2.1V; $I = (3.3-2.1)/100 = 12\text{mA}$
 - Blue: 3.1V; $I = (3.3-3.1)/20 = 10\text{mA}$
 - Green: 3.1V; $I = (3.3-3.1)/20 = 10\text{mA}$

Decoupling Caps

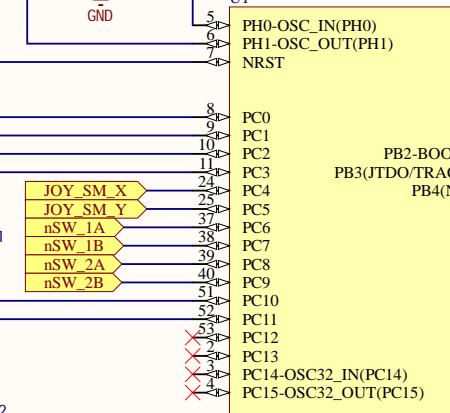
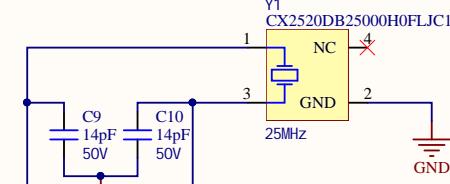


Reset Button

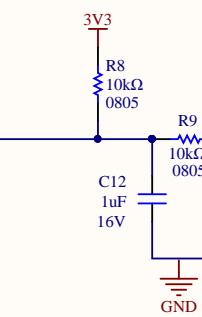


For Debounce Circuit:
 $T=RC \rightarrow C = T/R$
 $C = 10\text{ms}/10\text{kOhms} = 1\mu\text{F}$

STM32F446RET6

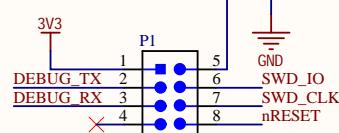


Test Button



For Debounce Circuit:
 $T=RC \rightarrow C = T/R$
 $C = 10\text{ms}/10\text{kOhms} = 1\mu\text{F}$

Debug/Programming



Title: SH1_MCU

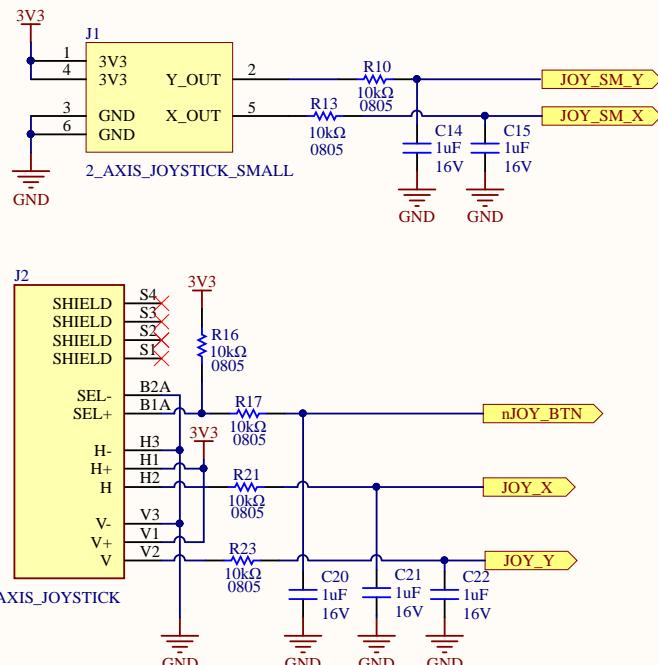
Size: Letter Drawn By: Qi nyang Bao

Date: 2020-06-01

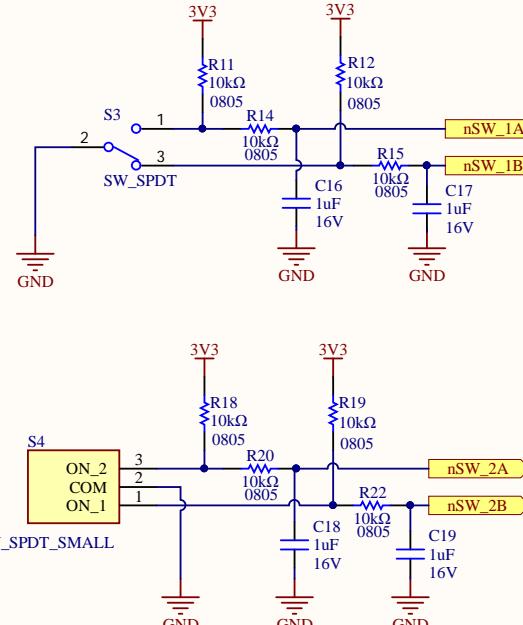
Sheet1 of 4

File: C:\Users\pkmn0\Desktop\Document Archive\Other\Electrical Git Repo\MarsRover2020-PCB\Projects\Robot Controller\

2-Axis Joysticks



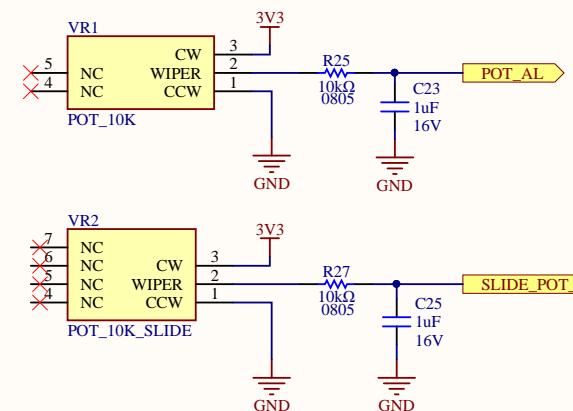
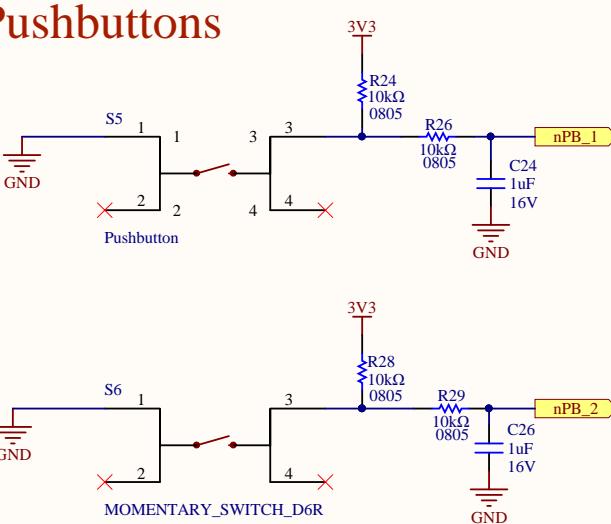
SPDT Switches



Potentiometers

Pushbuttons

For Debounce Circuits:
T=RC -> C= T/R
C= 10ms/10kOhms= 1uF



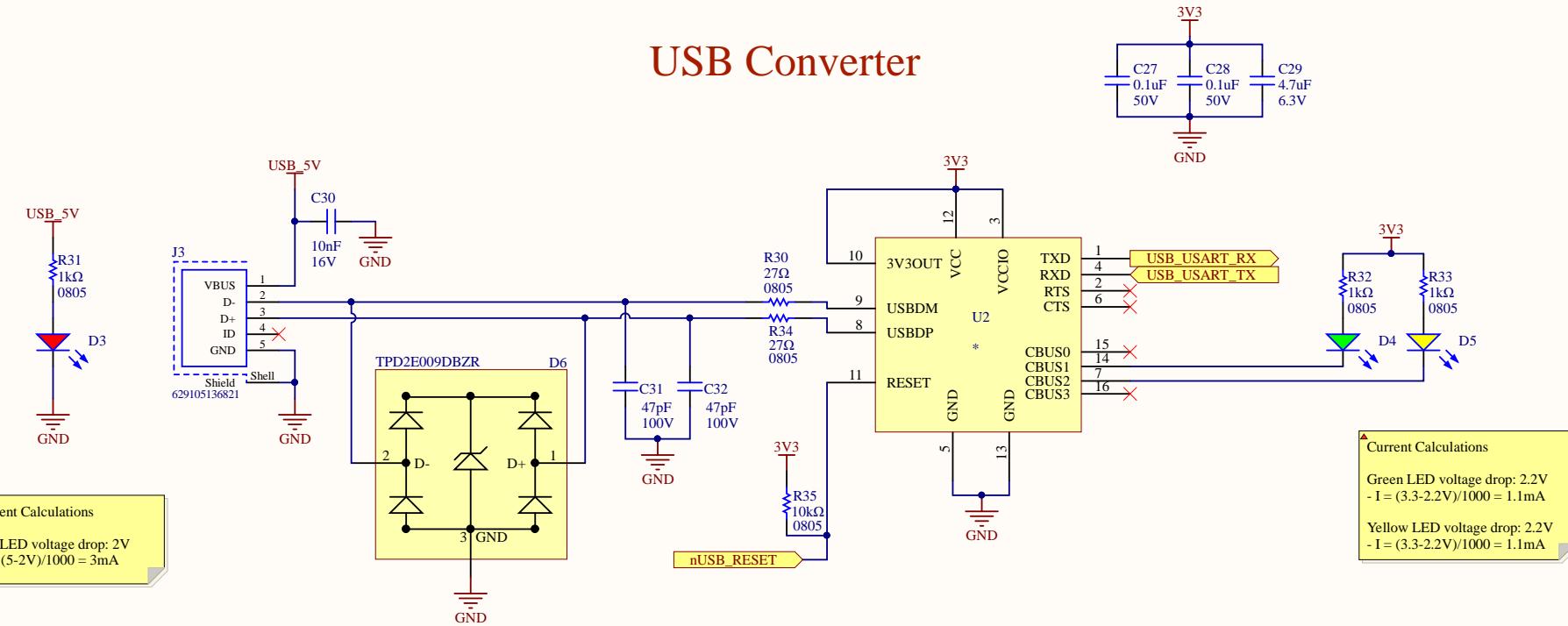
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Size: Letter Drawn By: Qi nyang Bao

Date: 2020-06-01

File: C:\Users\pkmn0\Desktop\Document Archive\Other\Electrical Git Repo\MarsRover2020-PCB\Projects\Robot Controller\

USB Converter



A

A

B

B

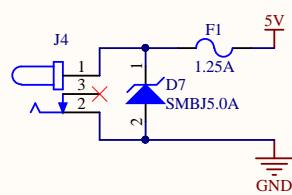
C

C

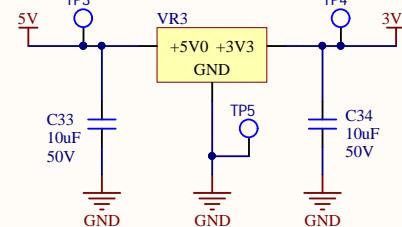
D

D

Power In



5V to 3V3 LDO



Current Calculations
Green LED voltage drop: 2.2V
 $- I = (3.3 - 2.2V) / 120 = 9mA$

Title: SH4-POWER

Size: Letter | Drawn By: Christopher Arjune

Date: 2020-06-01

Sheet 4 of 4

File: C:\Users\pkmn0\Desktop\Document Archive\Other\Electrical Git Repo\MarsRover2020-PCB\Projects\Robot Controller\

