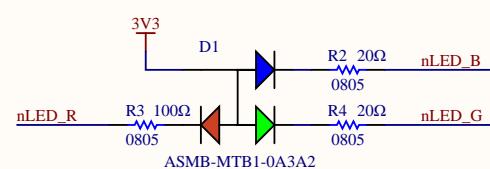


Test LEDs

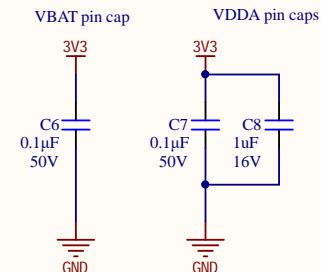
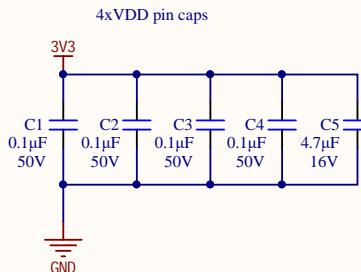


Current Calculations

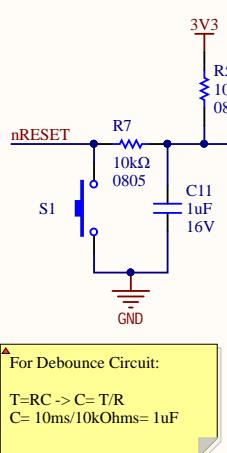
Green LED voltage drop: 2.2V
 $I = (3.3-2.2)/100 = 11\text{mA}$

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

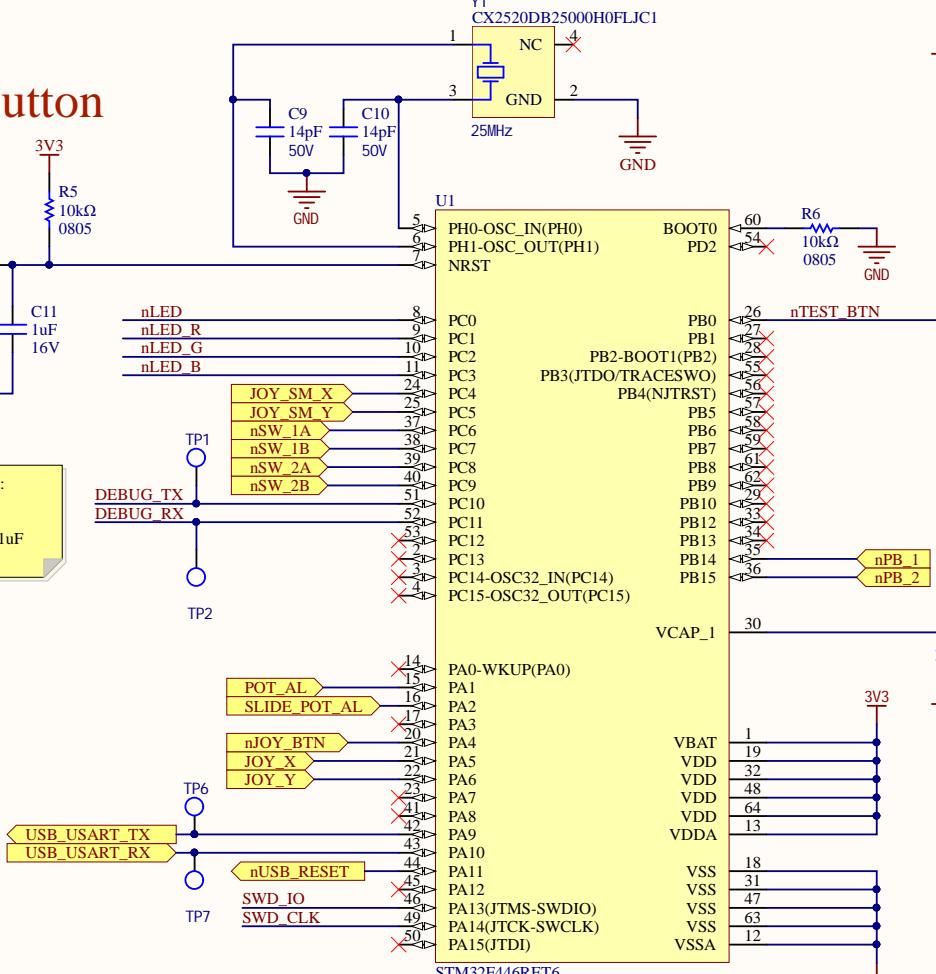


Reset Button

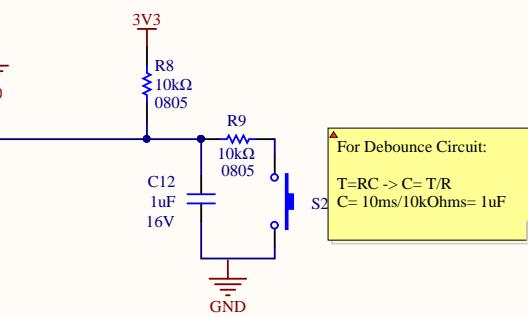


For Debounce Circuit:
 $T=RC \rightarrow C=T/R$
 $C=10\text{ms}/10\text{kOhms}=1\mu\text{F}$

STM32F446RET6

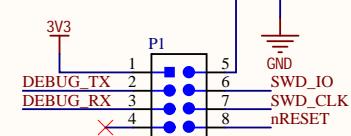


Test Button



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

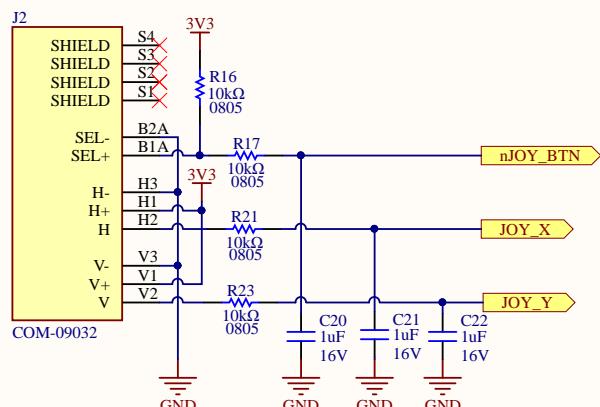
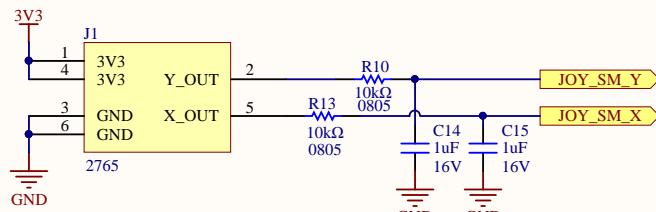
Size: Letter Drawn By: Qi nyang Bao

Date: 2020-06-02

Sheet1 of 4

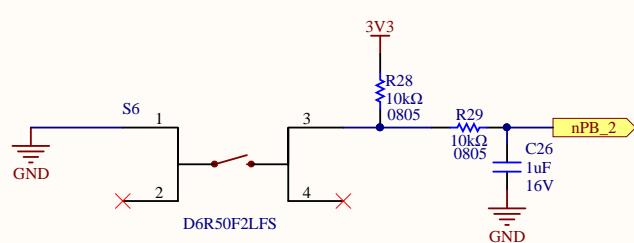
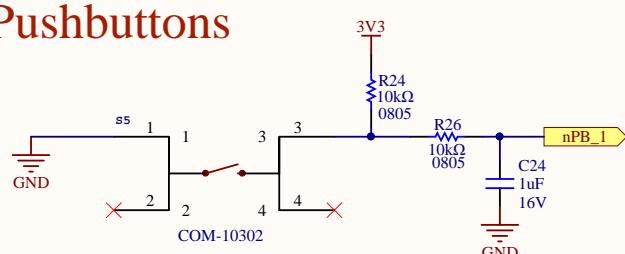
File: C:\Users\pkmn0\Desktop\Document Archive\Other\Electrical Git Repo\MarsRover2020-PCB\Projects\Robot Controller\

2-Axis Joysticks

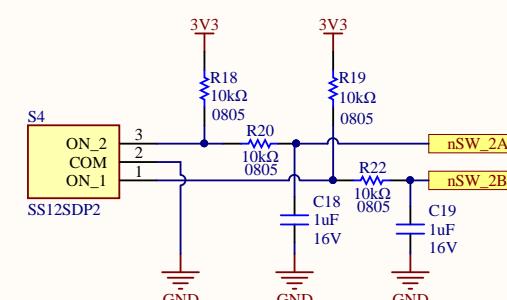
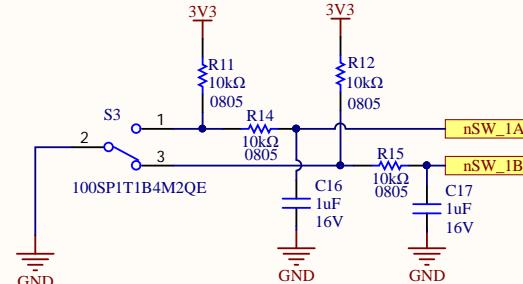


Pushbuttons

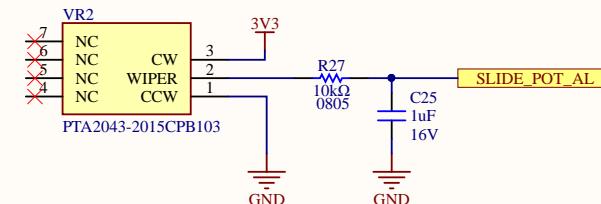
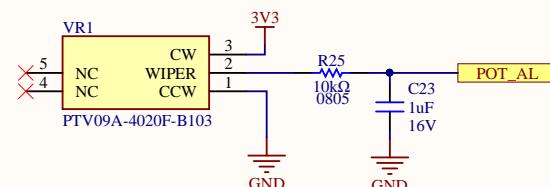
For Debounce Circuits:
T=RC -> C= T/R
C= 10ms/10kOhms= 1uF



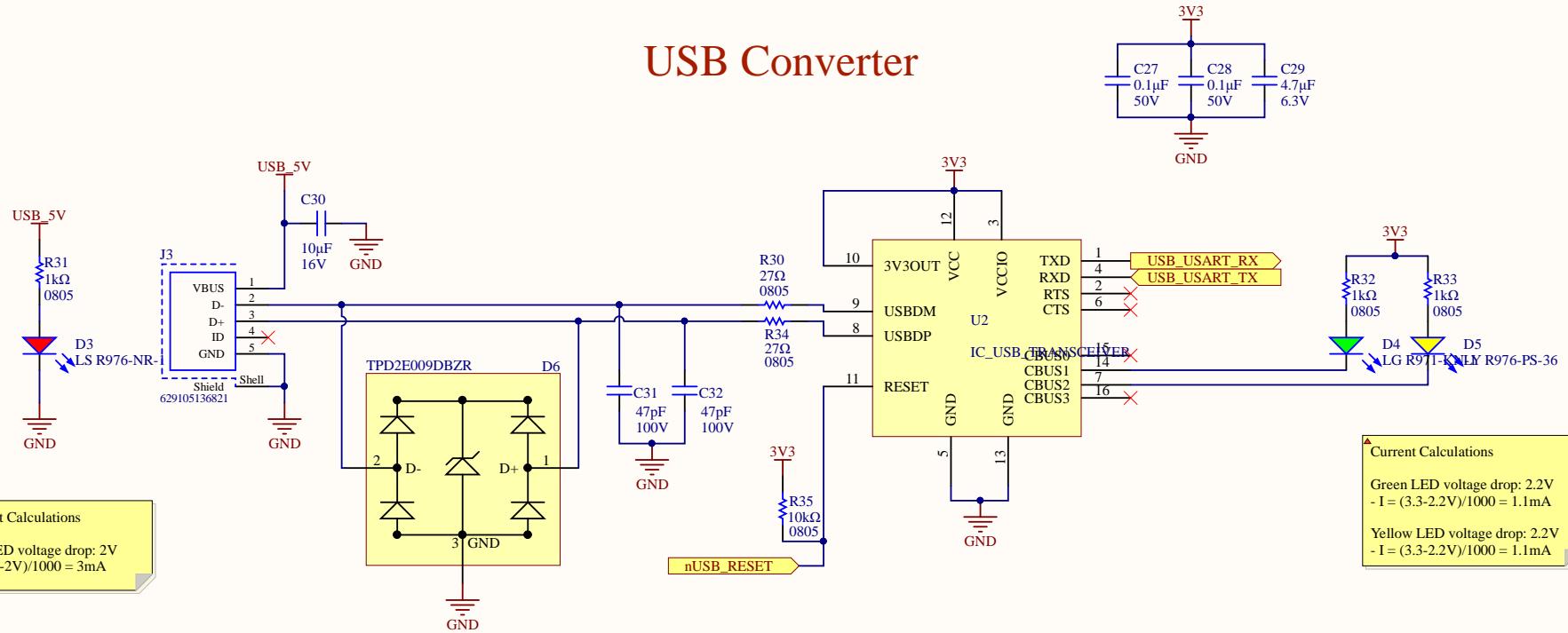
SPDT Switches



Potentiometers



USB Converter



A

A

B

B

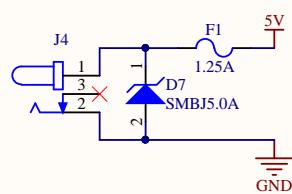
C

C

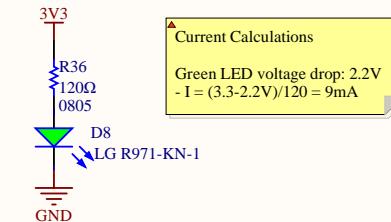
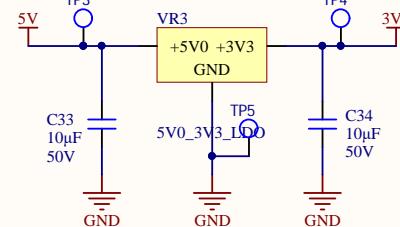
D

D

Power In



5V to 3V3 LDO



Title SH4-POWER		*
Size: Letter	Drawn By: Christopher Arjune	*
Date: 2020-06-02	Sheet 4 of 4	*
File: C:\Users\pkmn0\Desktop\Document Archive\Other\Electrical Git Repo\MarsRover2020-PCB\Projects\Robot Controller\		



