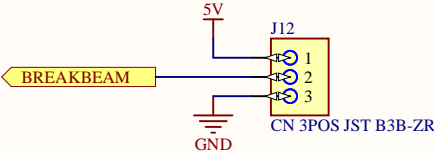
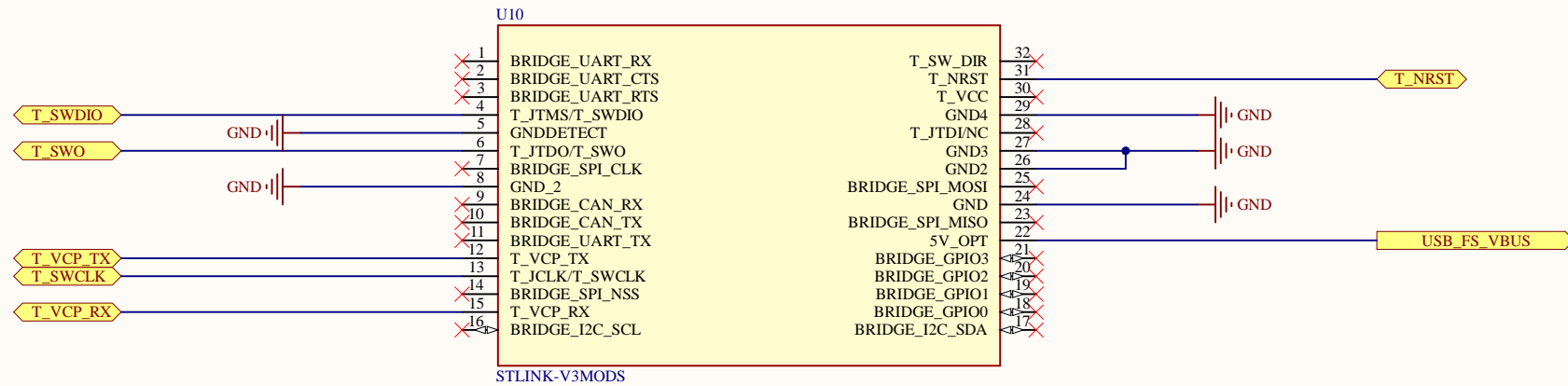


Breakbeam Interface



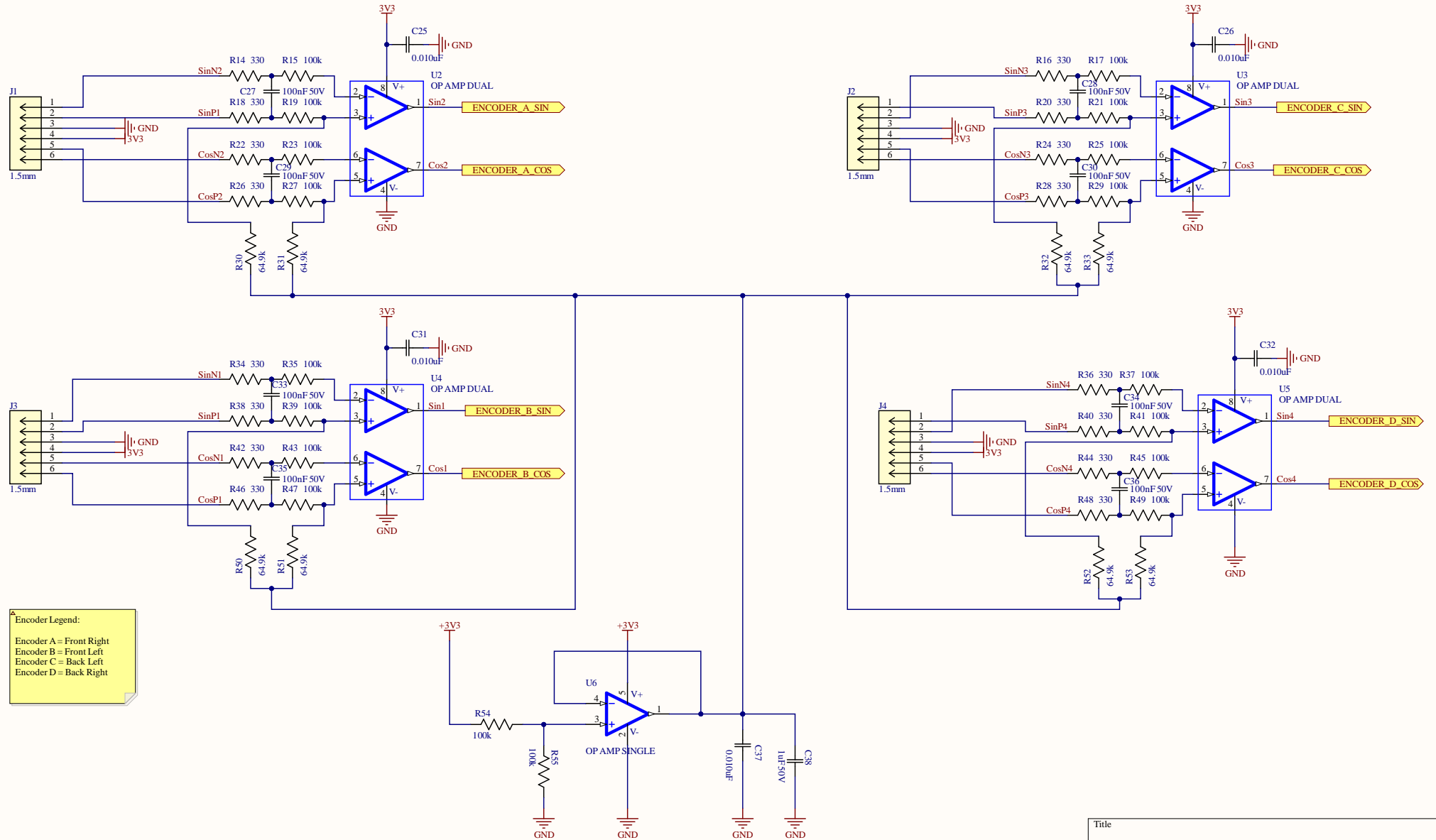
Title		
Size A4	Number	Revision
Date:	2-07-2021	Sheet of
File:	D:\UBC-Thunderbots\...\Mainboard_Breakbeam Interface.SchDoc	

Debug Interface



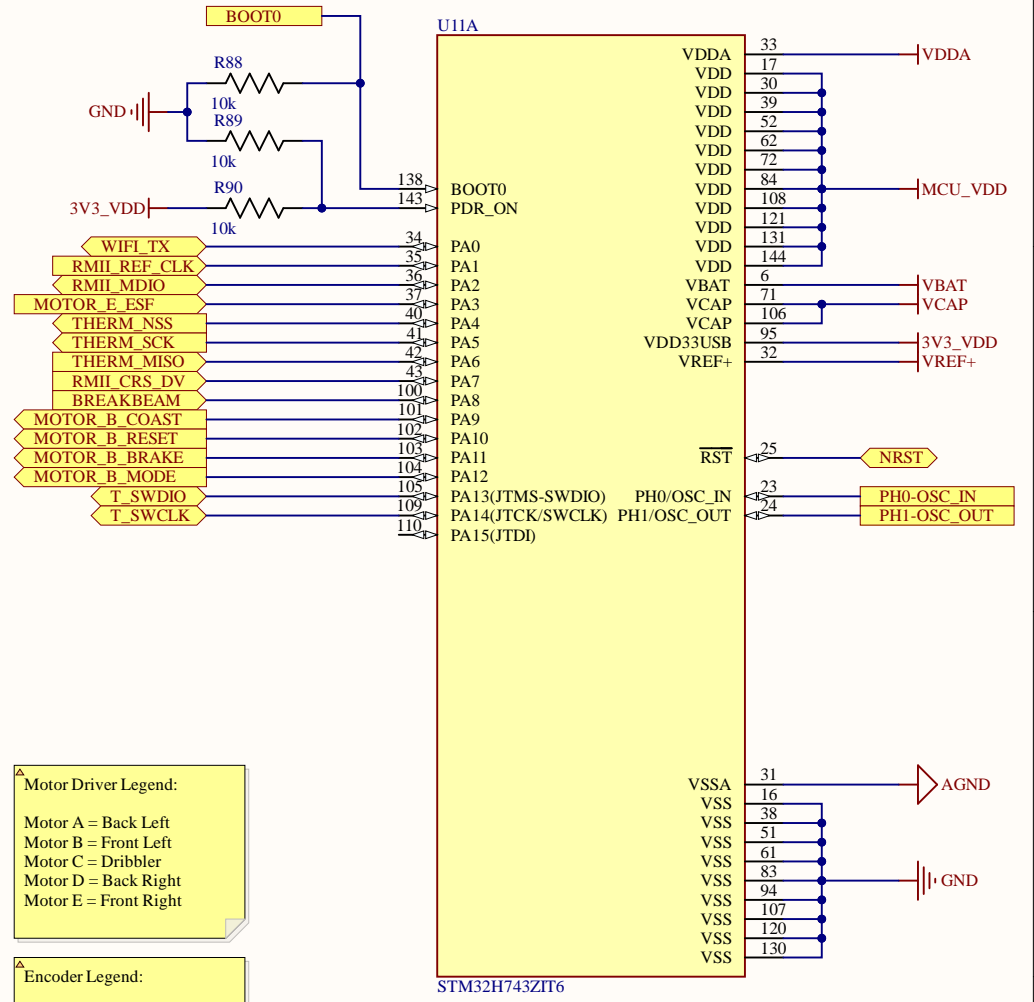
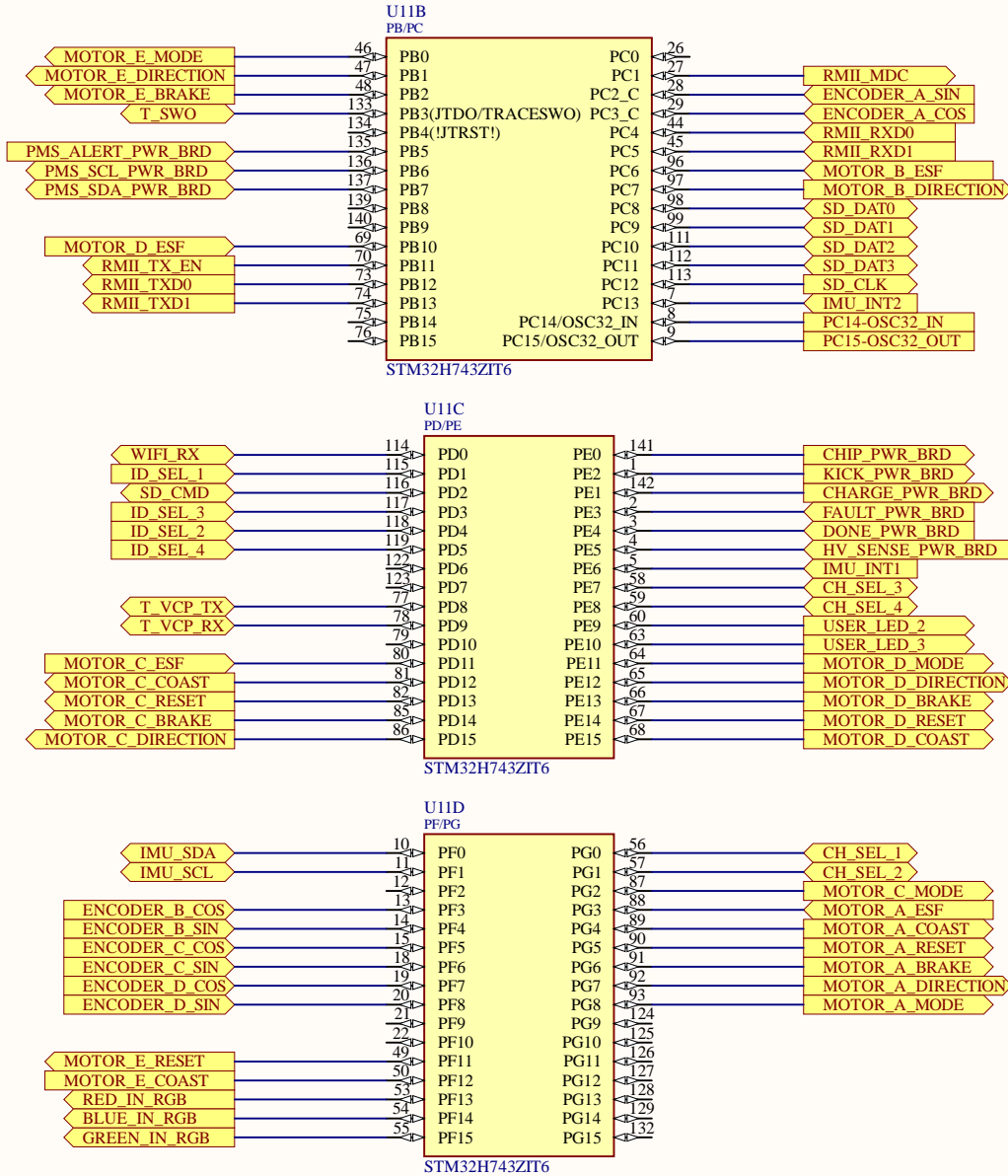
Title		
Size	Number	Revision
A4		
Date:	2-07-2021	Sheet of
File:	D:\UBC-Thunderbots\...\Mainboard_DebugInterface.SchDoc	

Encoder Interface

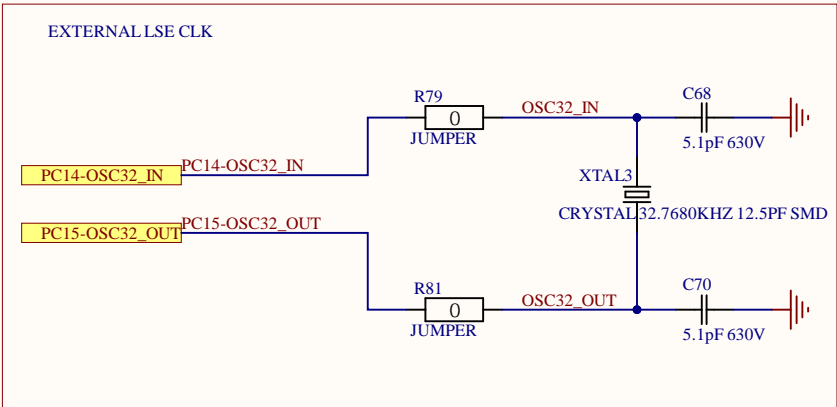
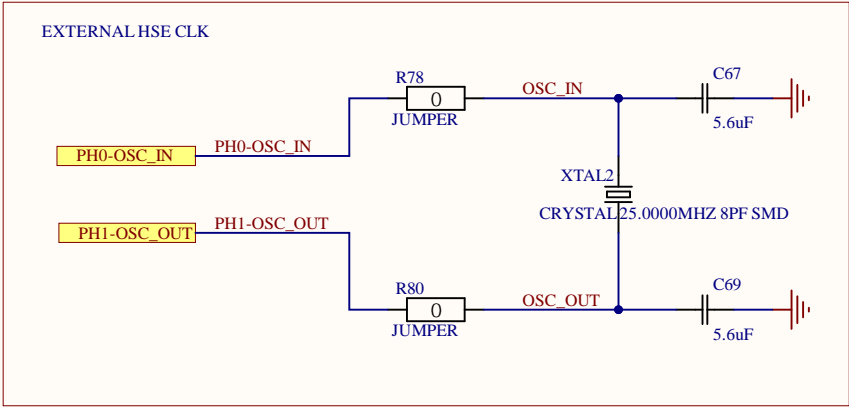
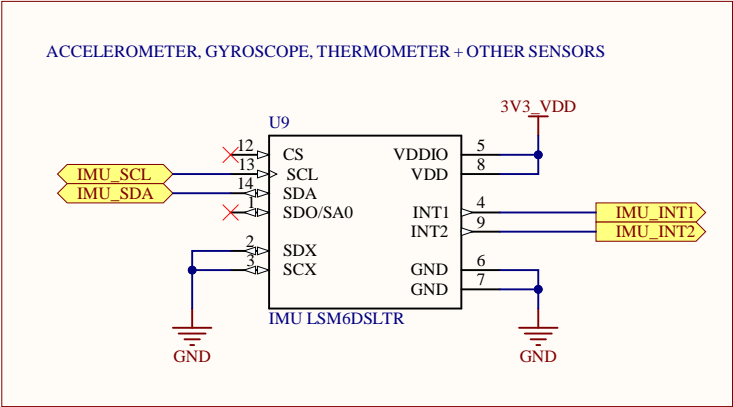
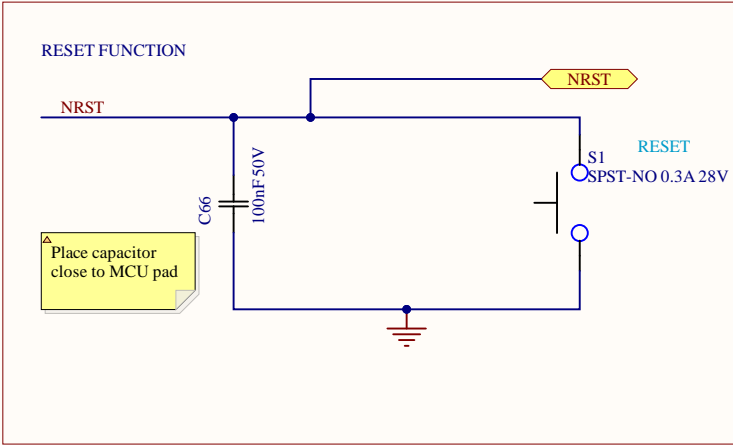


Title		
Size	Number	Revision
A4		
Date:	2-07-2021	Sheet of
File:	D:\UBC-Thunderbots\Mainboard_End-Office-SchDoc	

MCU Breakout



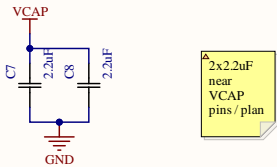
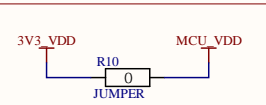
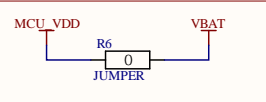
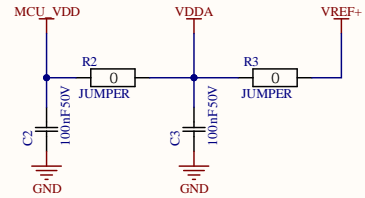
MCU Function



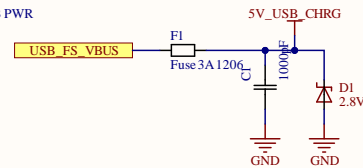
Title		
Size	Number	Revision
A4		
Date:	2-07-2021	Sheet of
File:	D:\UBC-Thunderbots\...\Mainboard_MCU_Function_SchDoc	

MCU Power

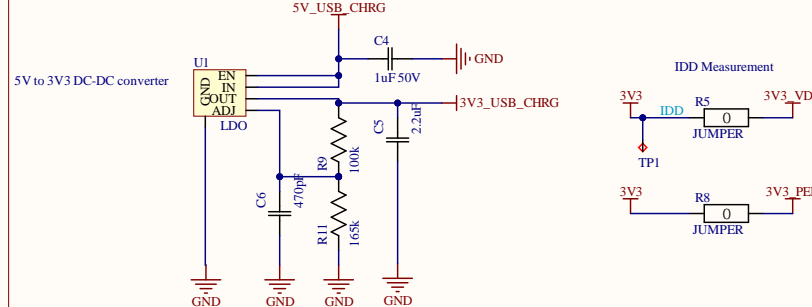
MCU PWR SUPPLIES



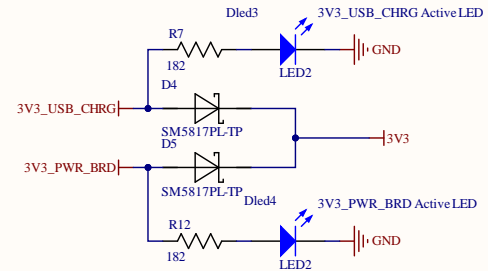
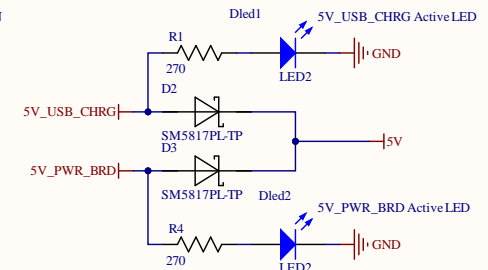
5V USB PWR



3V3 USB PWR



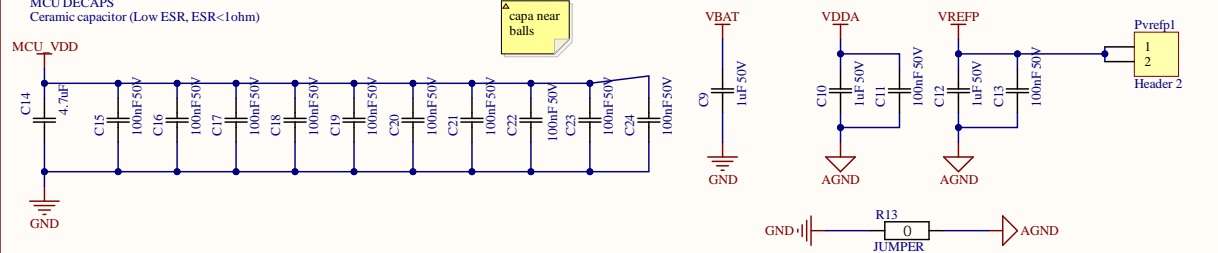
PWR SELECTION



MCU DECAPS

Ceramic capacitor (Low ESR, ESR<1ohm)

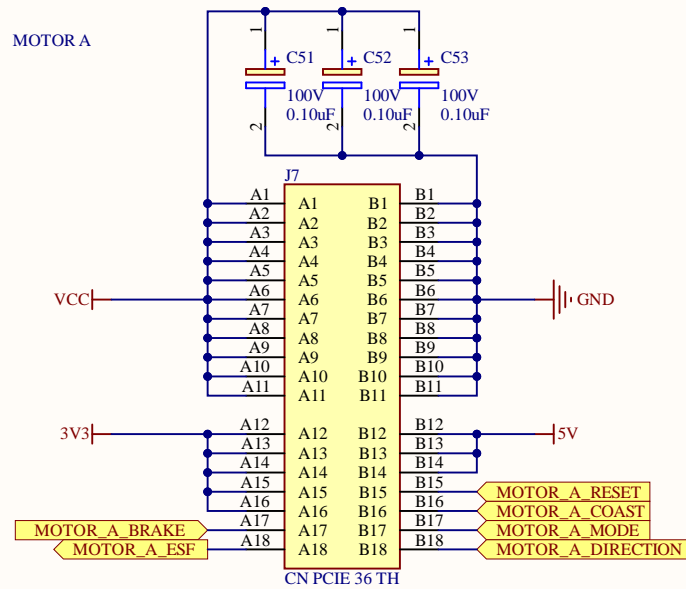
capa near balls



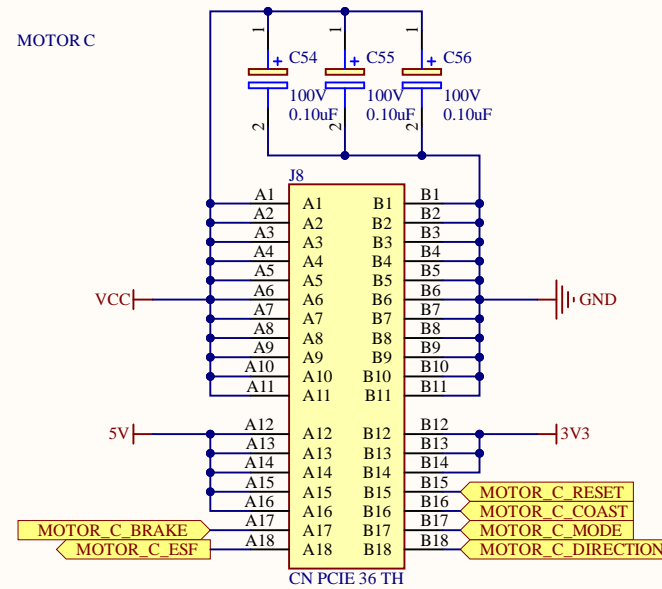
Title		
Size B	Number	Revision
Date:	2-07-2021	Sheet of
File:	D:\UBC-Thunderbots\MainBoard_MCUPowerSchDoc	MCU Power Sch Doc

Motordriver Interface

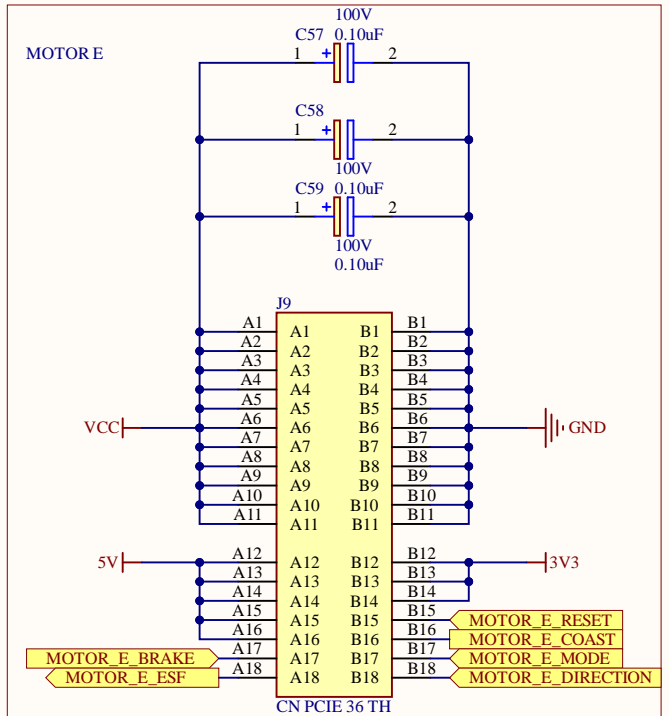
MOTOR A



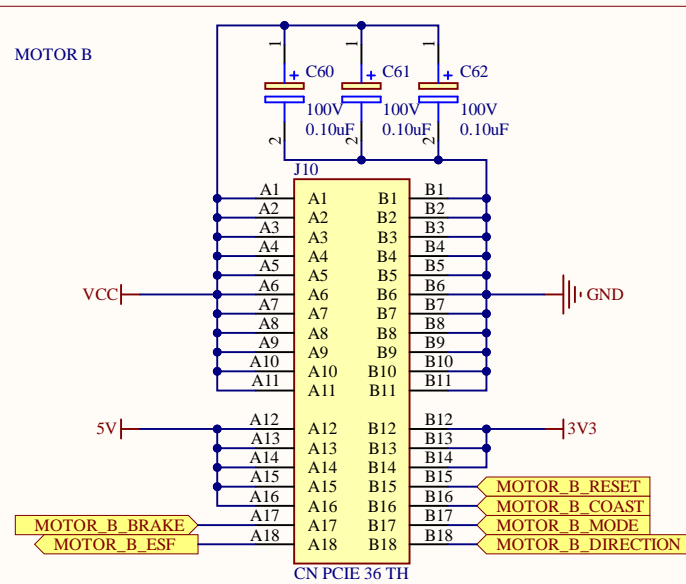
MOTOR C



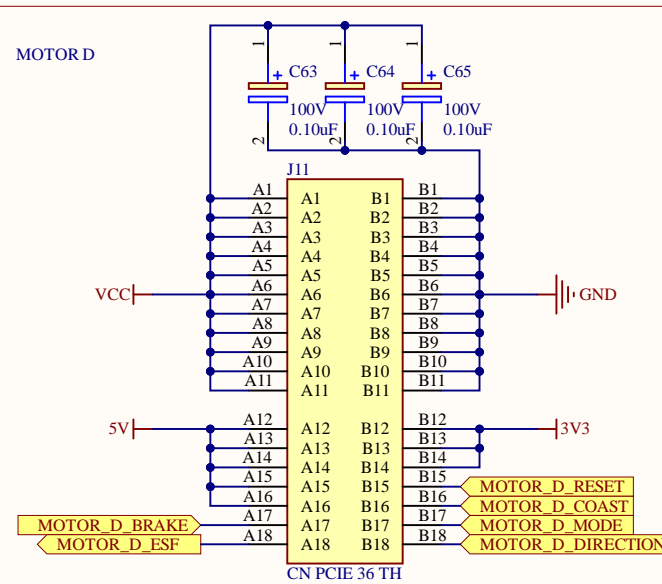
MOTORE



MOTOR B



MOTOR D



Motor Driver Legend:

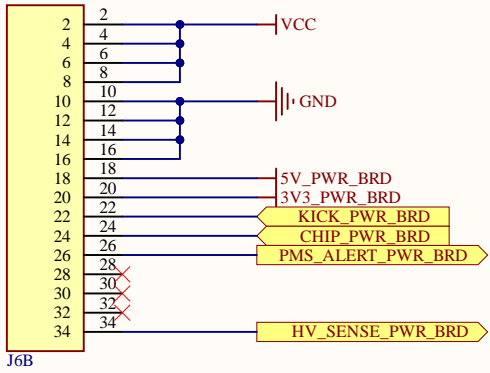
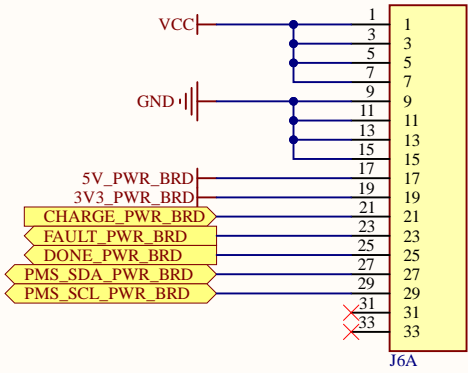
Motor A = Back Left
 Motor B = Front Left
 Motor C = Dribbler
 Motor D = Back Right
 Motor E = Front Right

Title		
Size A4	Number	Revision
Date:	2-07-2021	Sheet of
File:	D:\UBC-Thunderbots\...\Mainboard_MotordriverInterface.SchDoc	

Power Board Interface

CHARGE/FAULT/DONE 3.3V logic signals. From charge control IC. Send to MCU.

PMS_SDA/SCL I2C communication wires. Send to MCU.



Battery voltage for the motordrivers.

KICK/CHIP_PWR_BRD logic level signals. Send to MCU.

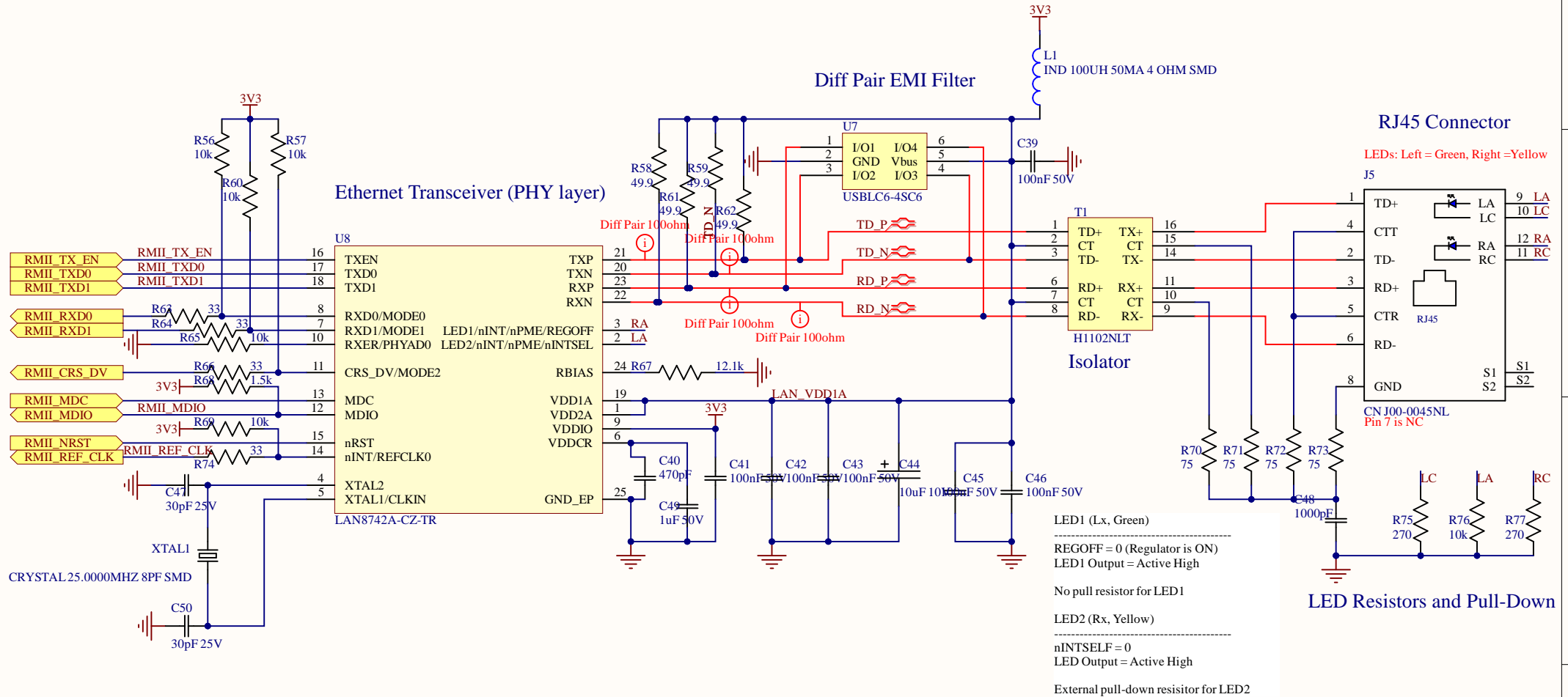
PMS_ALERT_PWR_BRD logic level fault pin. Send to MCU.

HV_SENSE analog feedback from the cap bank voltage (0-3.3V). Send to MCU.

Title		
Size	Number	Revision
A4		
Date:	2-07-2021	Sheet of
File:	D:\UBC-Thunderbots\Mainboard_PowerBoard\Mainboard_PowerBoard_SchDoc	

RMII Interface

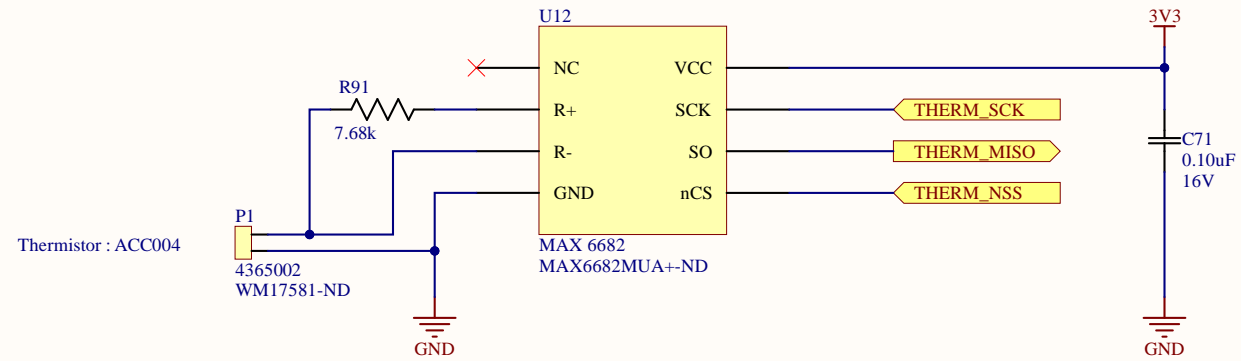
Ethernet Transceiver (PHY layer)



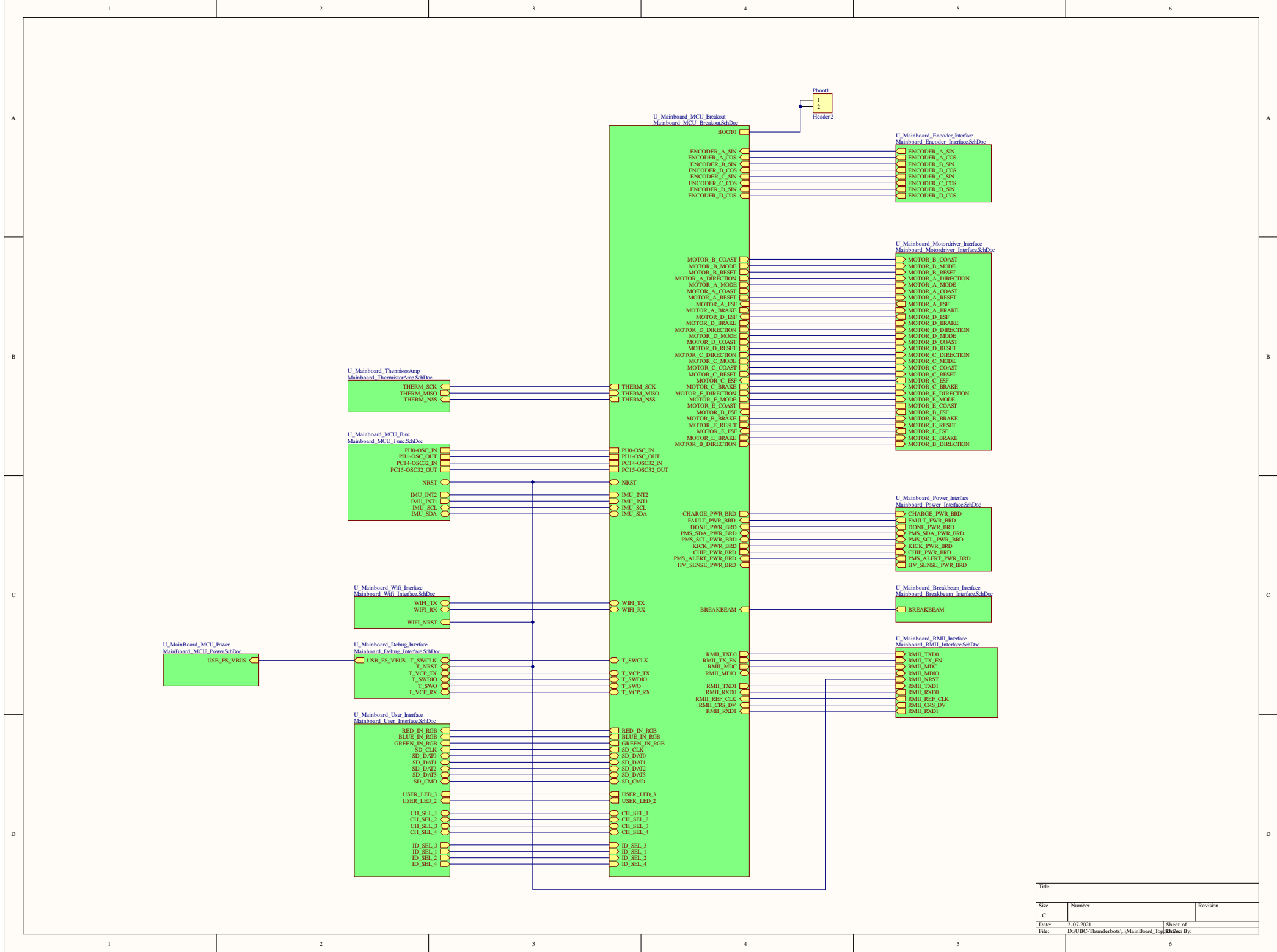
LED Resistors and Pull-Down

Title		
Size	Number	Revision
A4		
Date:	2-07-2021	Sheet of
File:	D:\UBC-Thunderbots\...\Mainboard_RMII Interface SchDoc	

Thermistor Amplifier

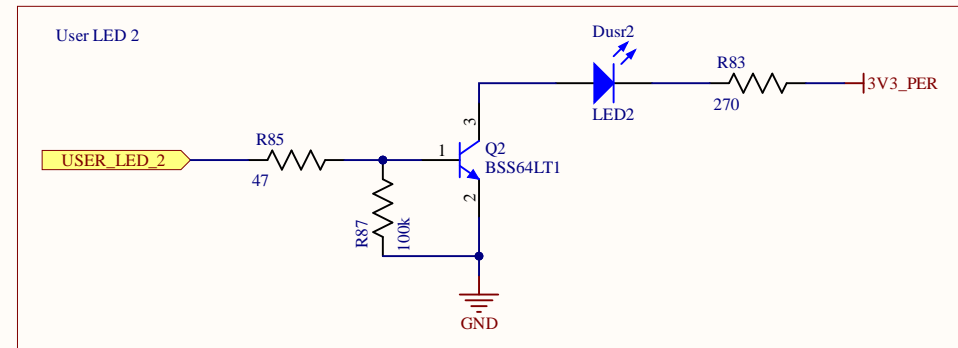
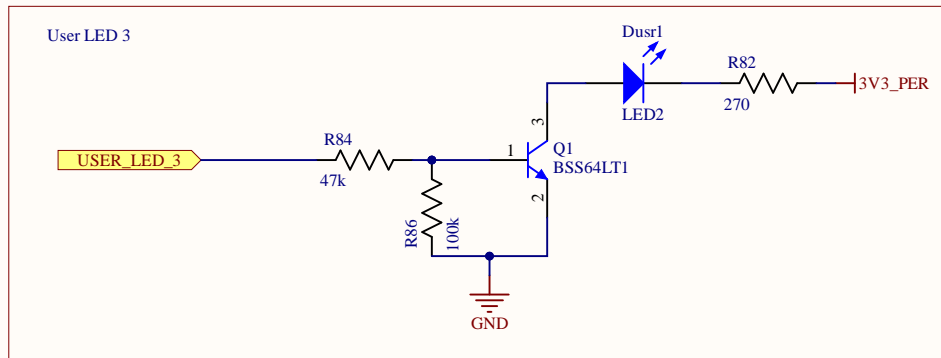
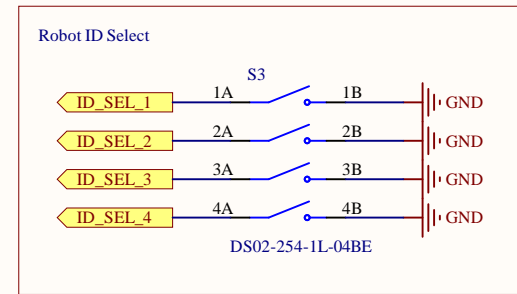
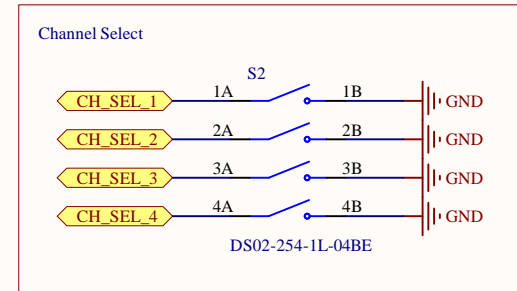
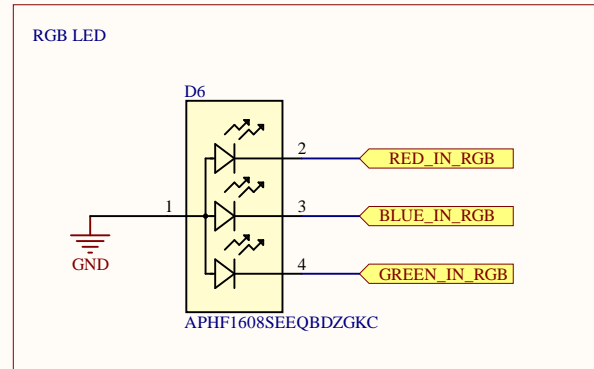
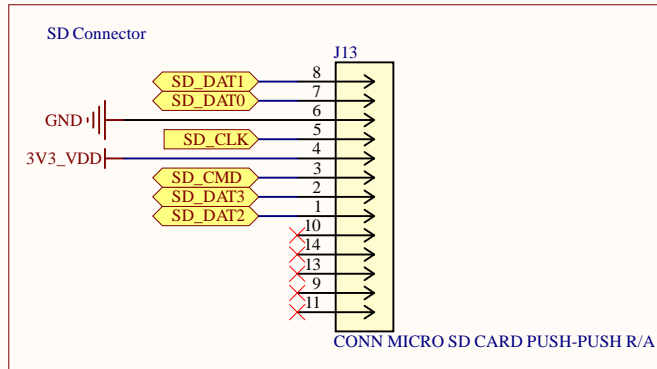


Title		
Size	Number	Revision
A		
Date:	2-07-2021	Sheet of
File:	D:\UBC-Thunderbots\Mainboard_Thermistor\Drawings\Mainboard_Thermistor_SchDoc	



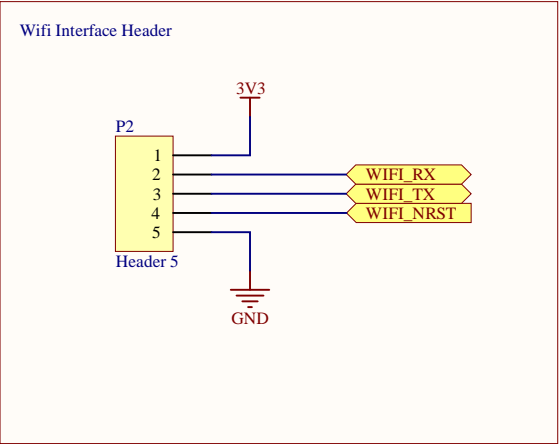
Title		
Size	Number	Revision
C		
Date:	2-07-2021	Sheet of
File:	D:\UBC-Thunderbots\MainBoard_Tags\MainBoard_Tags By:	

User Interface



Title		
Size A4	Number	Revision
Date:	2-07-2021	Sheet of
File:	D:\UBC-Thunderbots\...\Mainboard_User Interface.SchDoc	Drawn by SchDoc

Wifi Interface



Title		
Size A4	Number	Revision
Date:	2-07-2021	Sheet of
File:	D:\UBC-Thunderbots\...\Mainboard_Wifi	Drawn By Sch Doc

