

*If Not Specified, Supplied By Same Rail As MCU Or FPGA

Digital

Analog

EEProm
SD Card
Flash Storage

ARM MCU

SPI Isolator
W/ 3 IO Pins

ICE-40 FPGA

EEProm

Temperature
Sensor

Current Shunt
Input

Keypad
Connector

Display
Connector

Analog
Frontend

Fuel Guage

Power Switch
Controller

+3.3 to +5v
Isolated Supply

+3.3v And +1.2v
Voltage Regulator

Battery

Battery Charger
&
Voltage Regulator
Controller

+7v/-2v Regulator

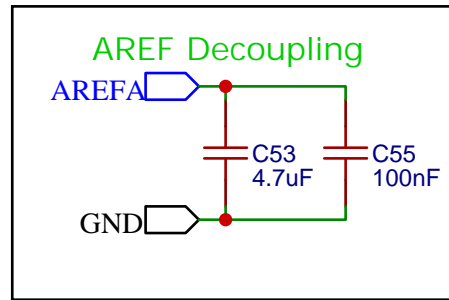
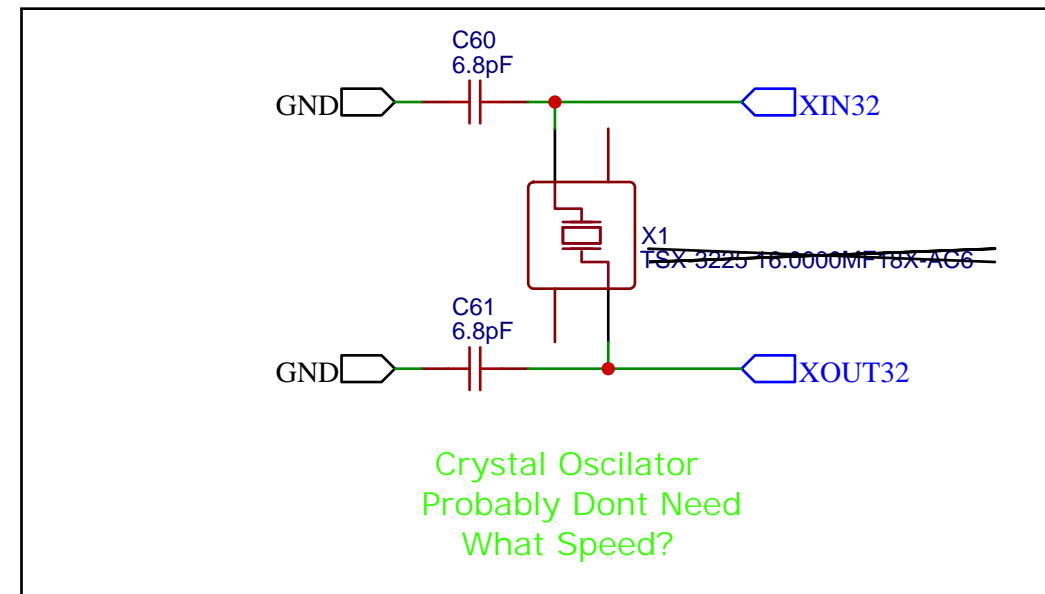
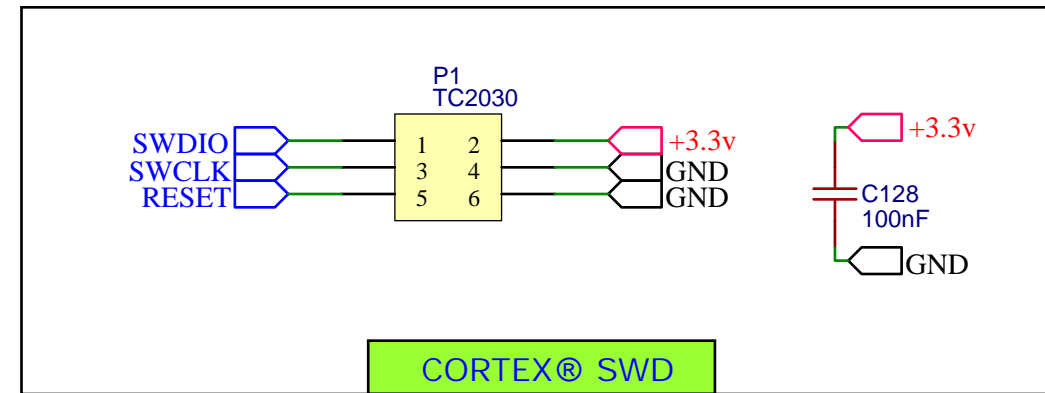
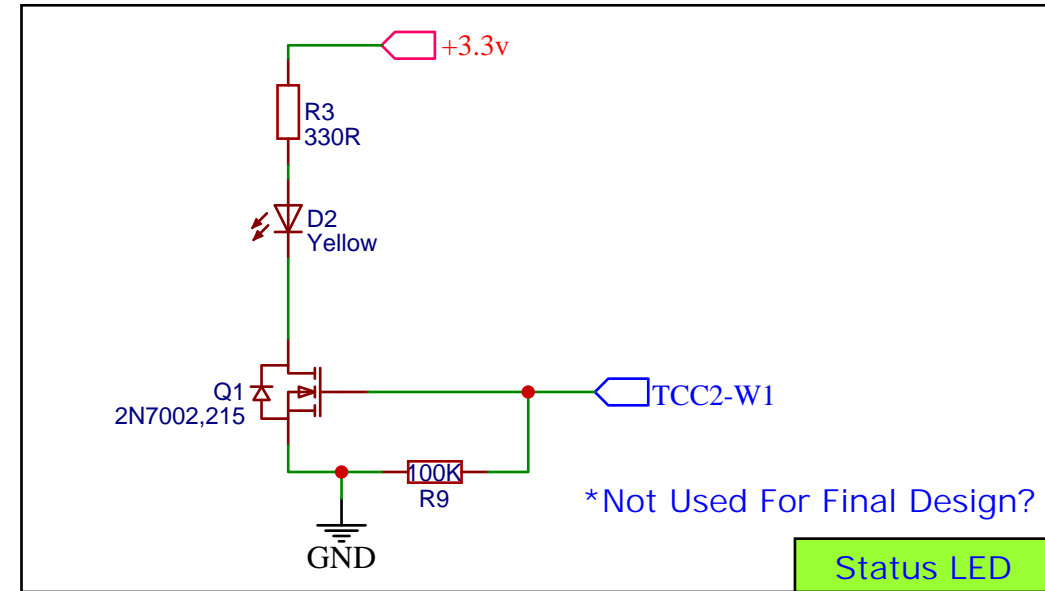
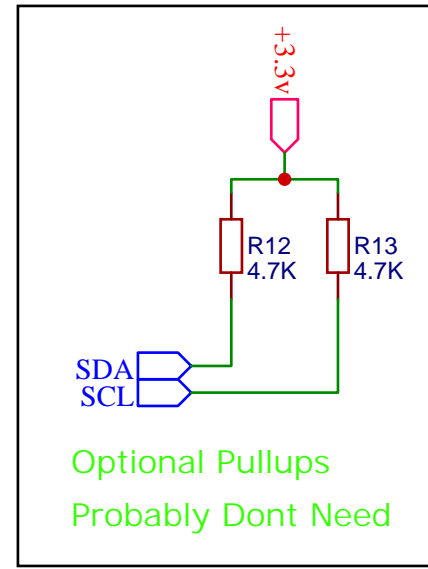
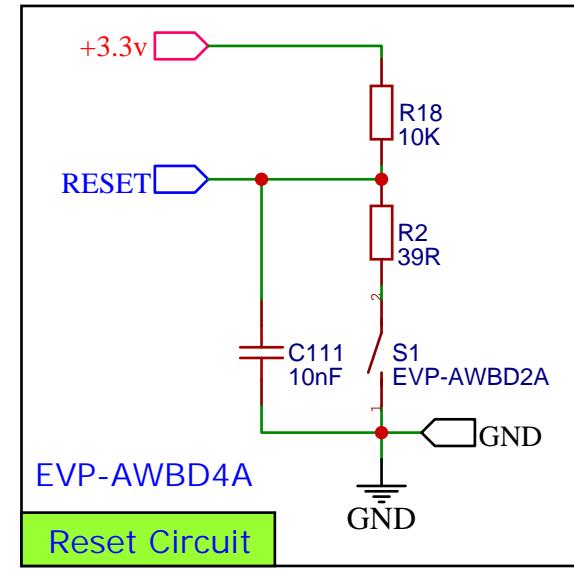
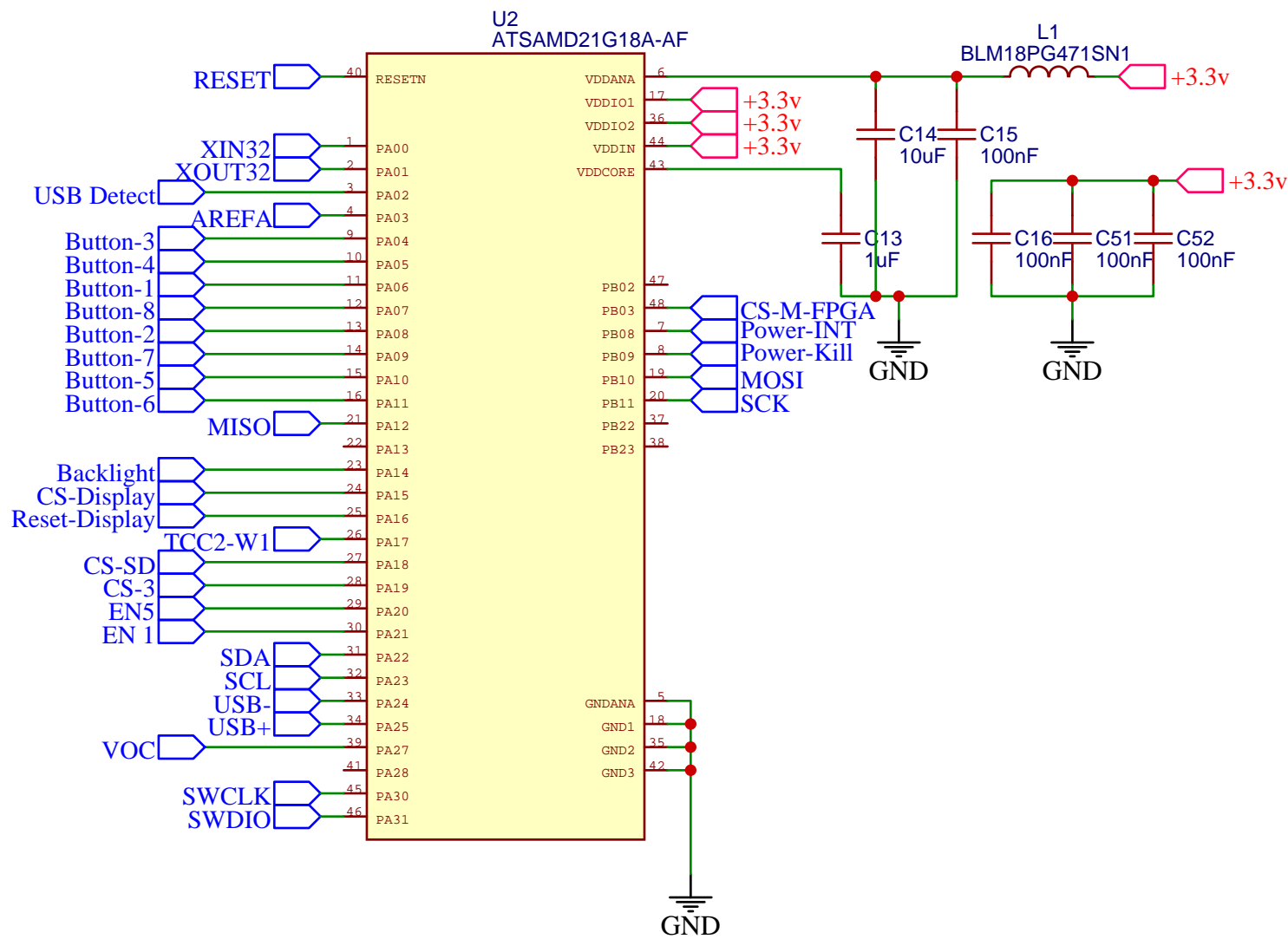
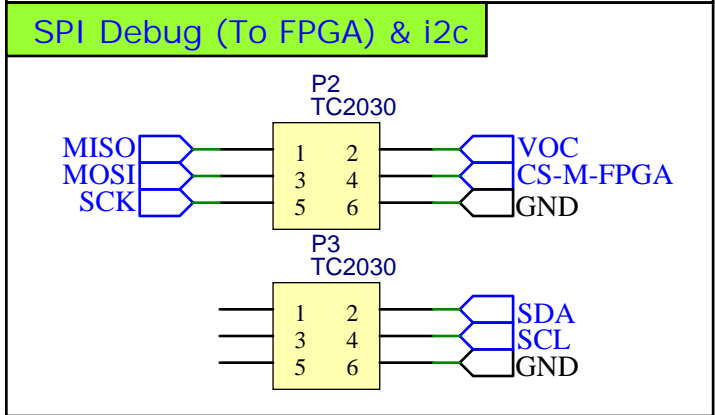
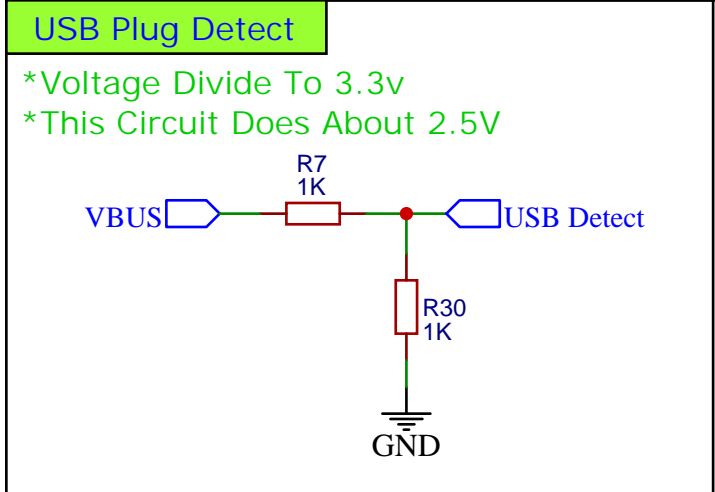
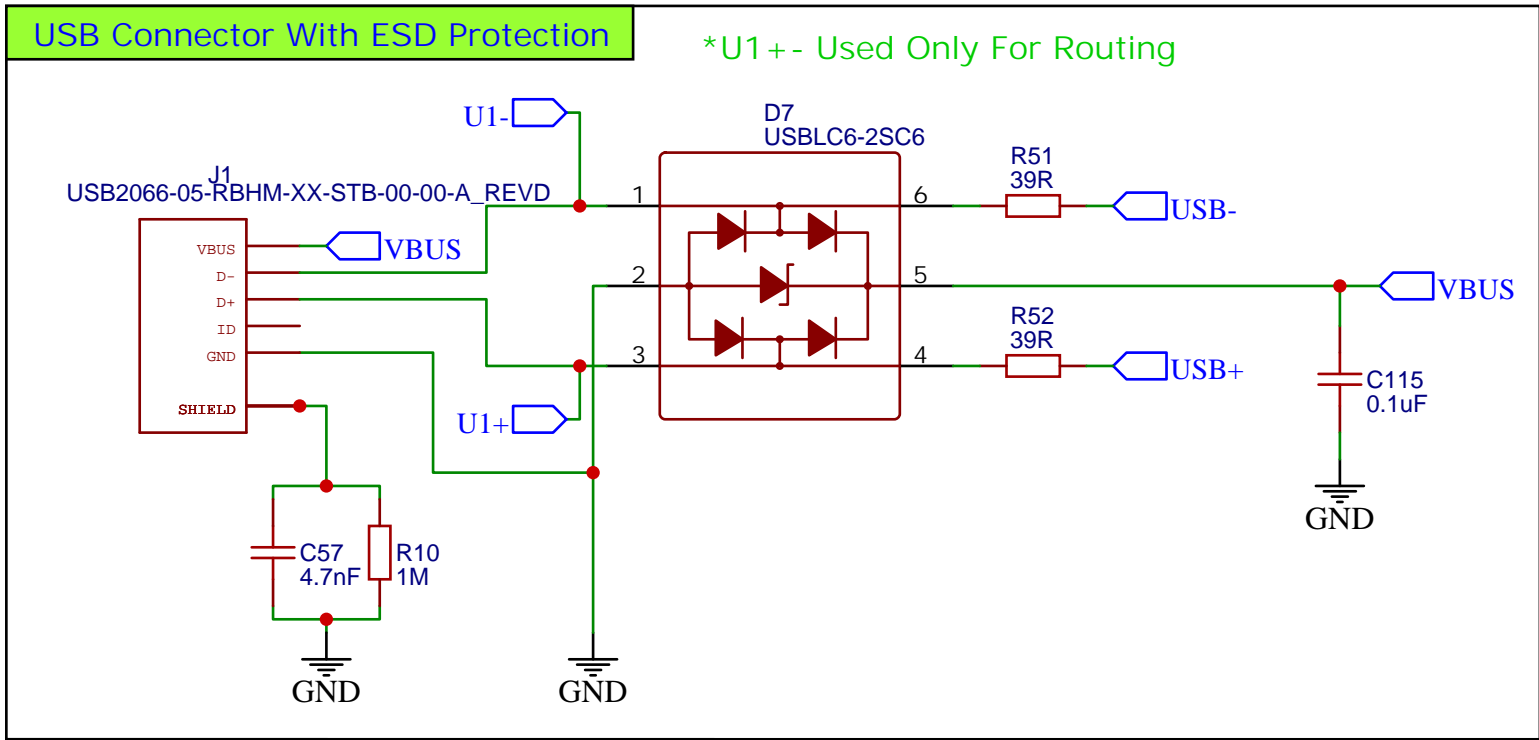
USB
Connector

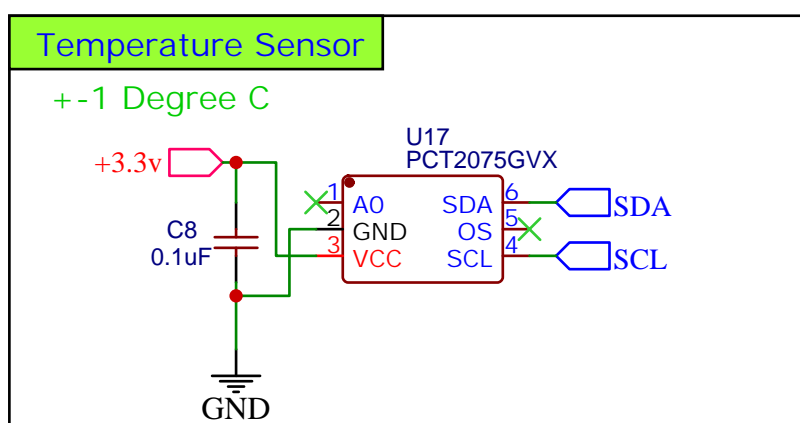
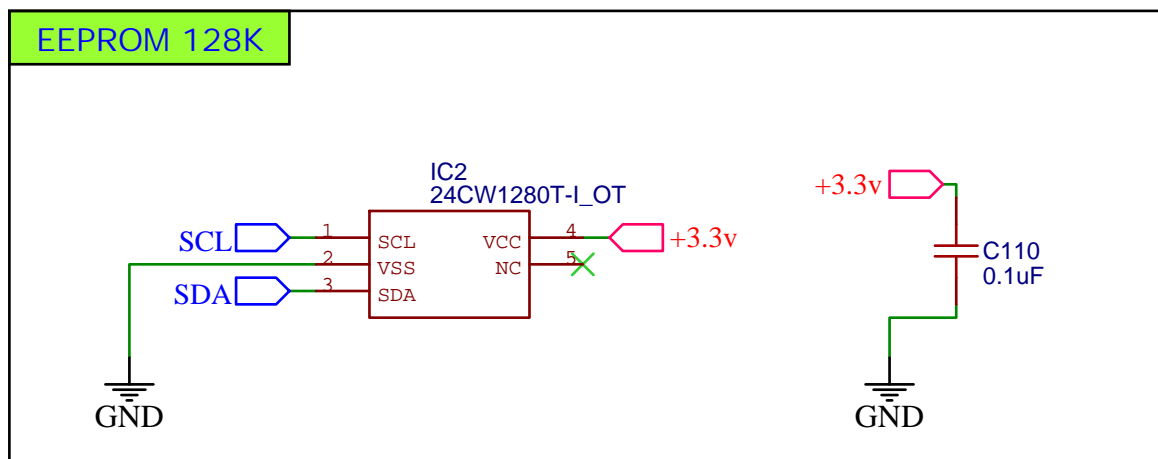
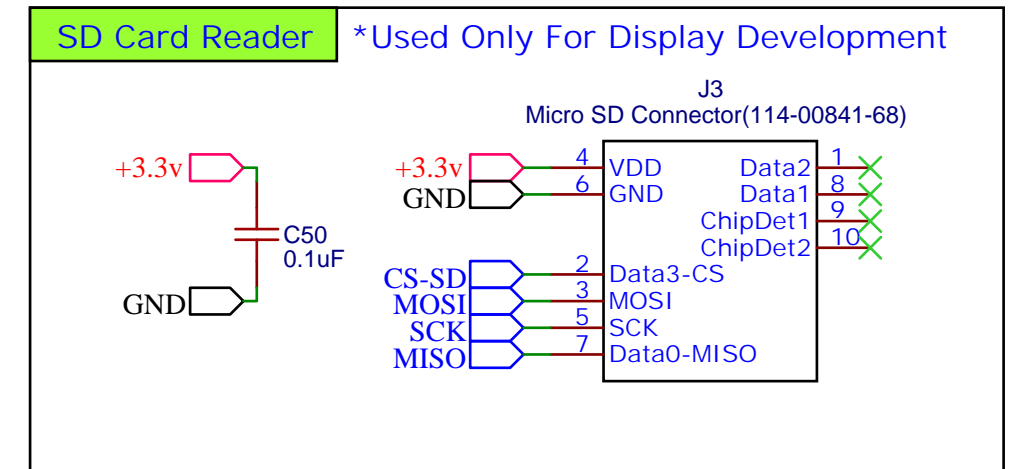
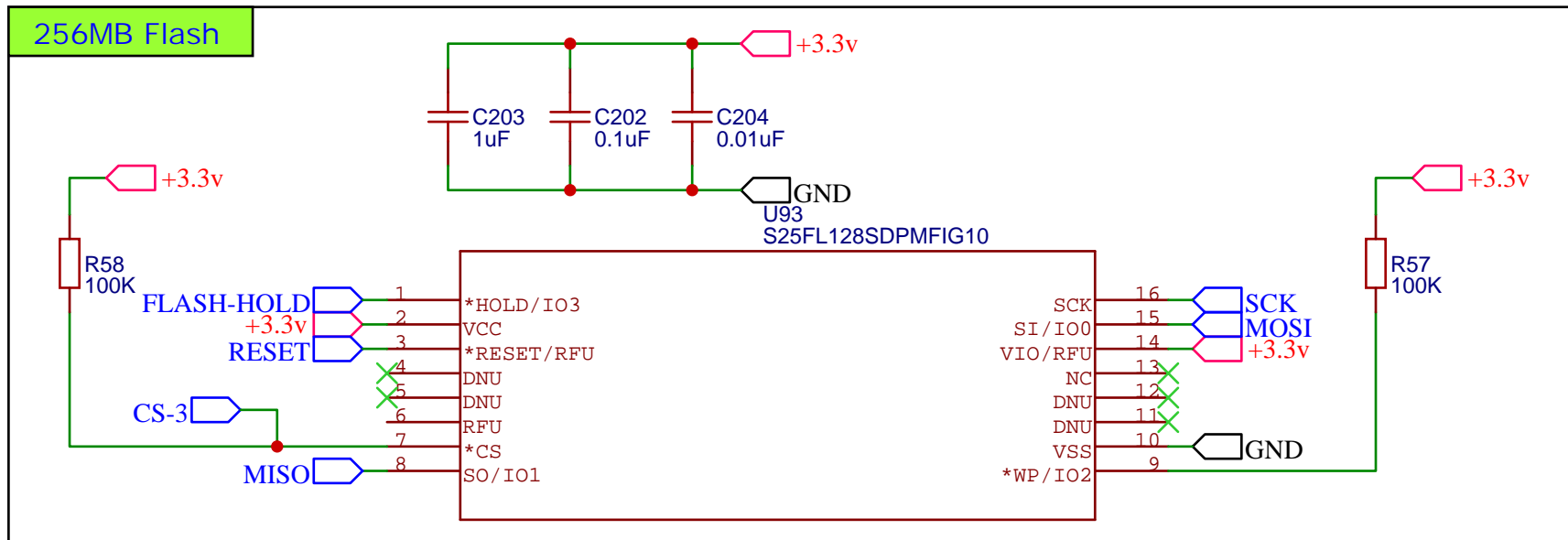
+3.3v To
Dual Supply 9v
Isolated Supply

+5v Low Noise
Voltage Regulator

+2.5v Precision
Voltage Refrence

TITLE: High Level System Diagram		REV: 1.0
	Company: Jacob Gaming Co.	Sheet: 1/10
	Date: 2021-01-15 Drawn By: Jacob Soucek	





*Probably Wont Be Used, Analog FPGA Has One Too

TITLE: Digital Section		REV: 1.0
	Company: Jacob Gaming Co.	Sheet: 3/10
	Date: 2021-01-15 Drawn By: Jacob Soucek	

2.048V Reference (Vocm)

4.096 Reference (ADC)

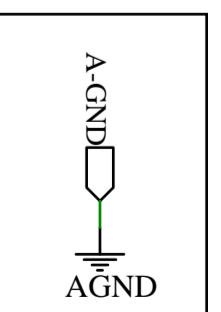
No Filtering, Precision Low Noise Regulator

R38 precision Resistor

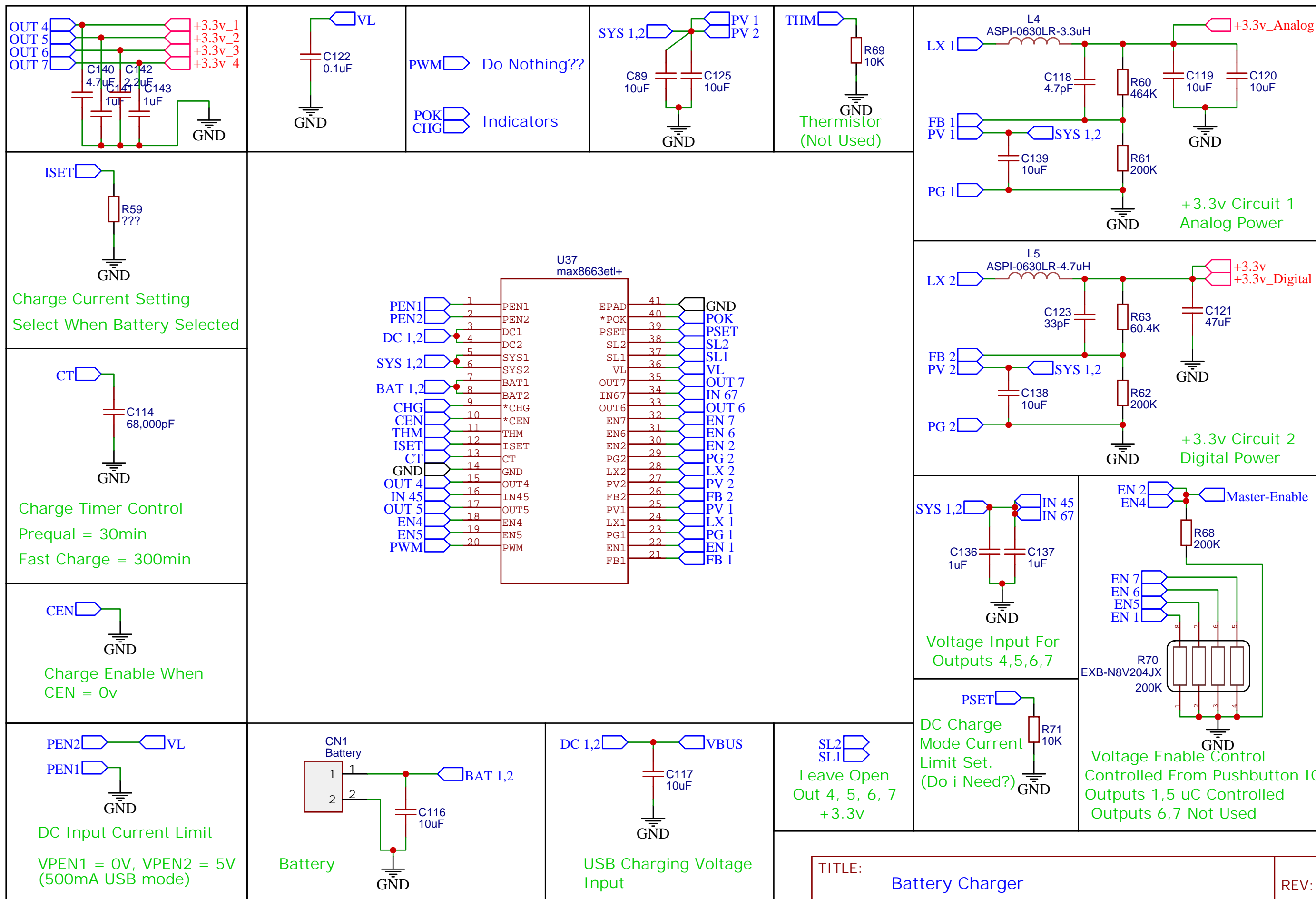
(Low ESR)

(Low ESR)

Optocoupled Relay Control
Helps Prevent Analog Noise



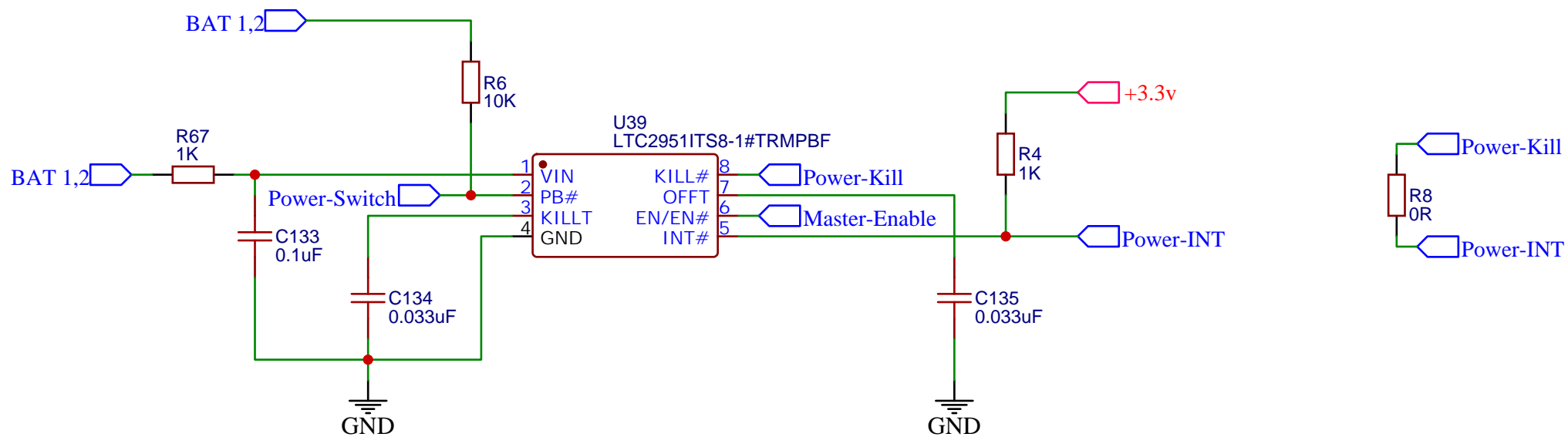
TITLE: Analog Power Supply / Isolation		REV: 1.0
	Company: Jacob Gaming Co.	Sheet: 4/10
	Date: 2021-01-21	Drawn By: Jacob Soucek



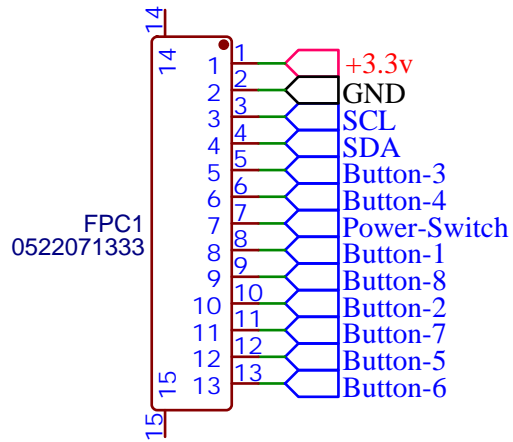
R6 Not Used, Only There In Case I Need It.

R67 Reverse Battery Protection, Might Fit OR

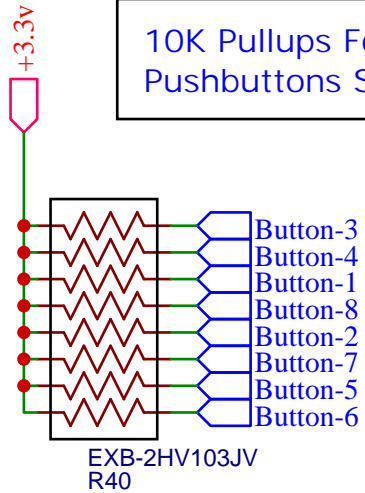
R8 Used When MCU Is Still Being Developed, Forces Kill Override



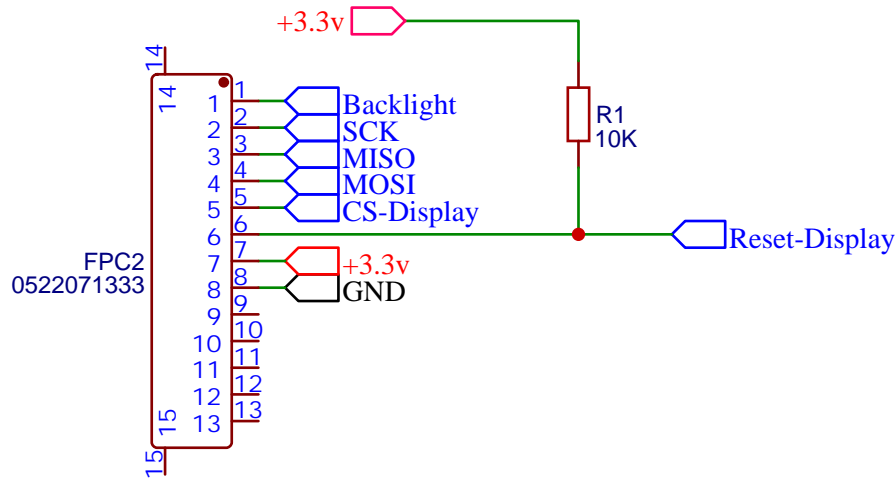
TITLE: Pushbutton Power Switch		REV: 1.0
		Sheet: 7/10
	Company: Jacob Gaming Co.	Date: 2021-02-15 Drawn By: Jacob Soucek



Flat Flex Connector
Keypad

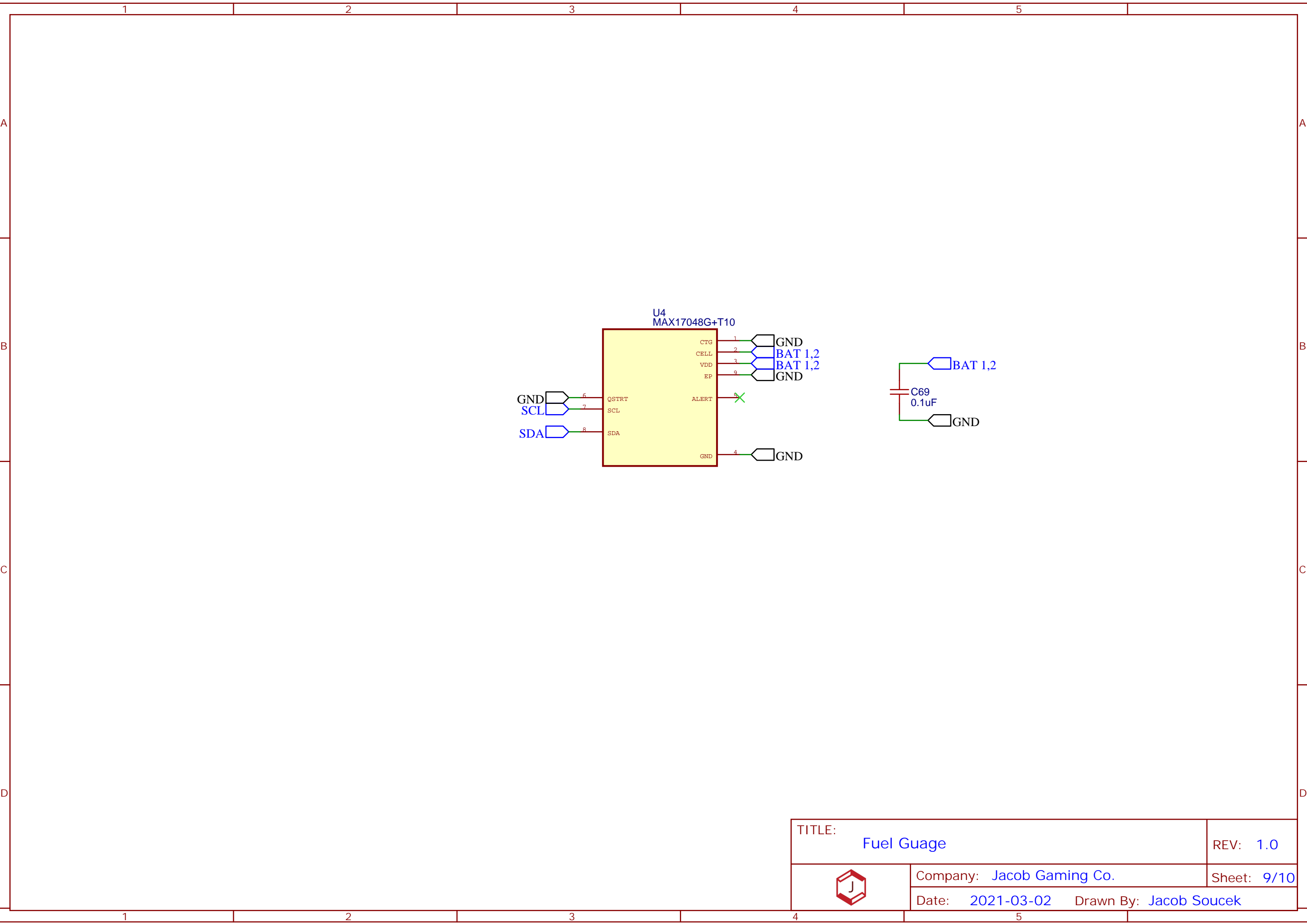



10K Pullups For Pushbuttons
Pushbuttons Short To Ground When Pressed



Flat Flex Connector
Display Module
AMG240160P-G-W6WFDW

TITLE: Connectors		REV: 1.0
	Company: Jacob Gaming Co.	Sheet: 8/10
	Date: 2021-02-21 Drawn By: Jacob Soucek	

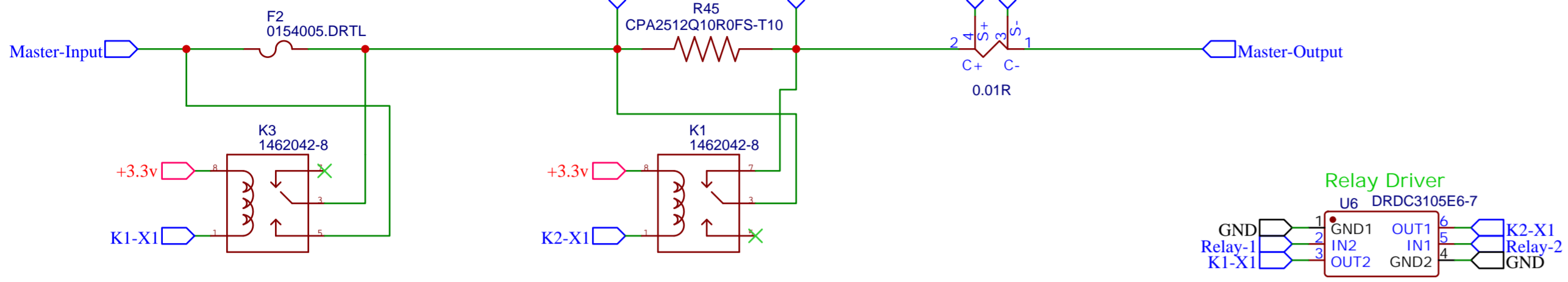


TITLE: Fuel Guage		REV: 1.0
		Sheet: 9/10
	Company: Jacob Gaming Co.	Date: 2021-03-02 Drawn By: Jacob Soucek

SHUNTS

uA/mA
10R

mA/A
0.01R



Allows The Fuse To Be Bypassed For
Ultra Low Dropout Operations. (2A Fuse)

PGA

Programmable Gain Device Sets The Ranges

ADC

24-bit For presicion, 16 bit 1Ms/s For Graphing and ranging
Two 16-bit adc's for simultaneous shunt sensing

RC FILTER

X10 Op Amp Amplification

