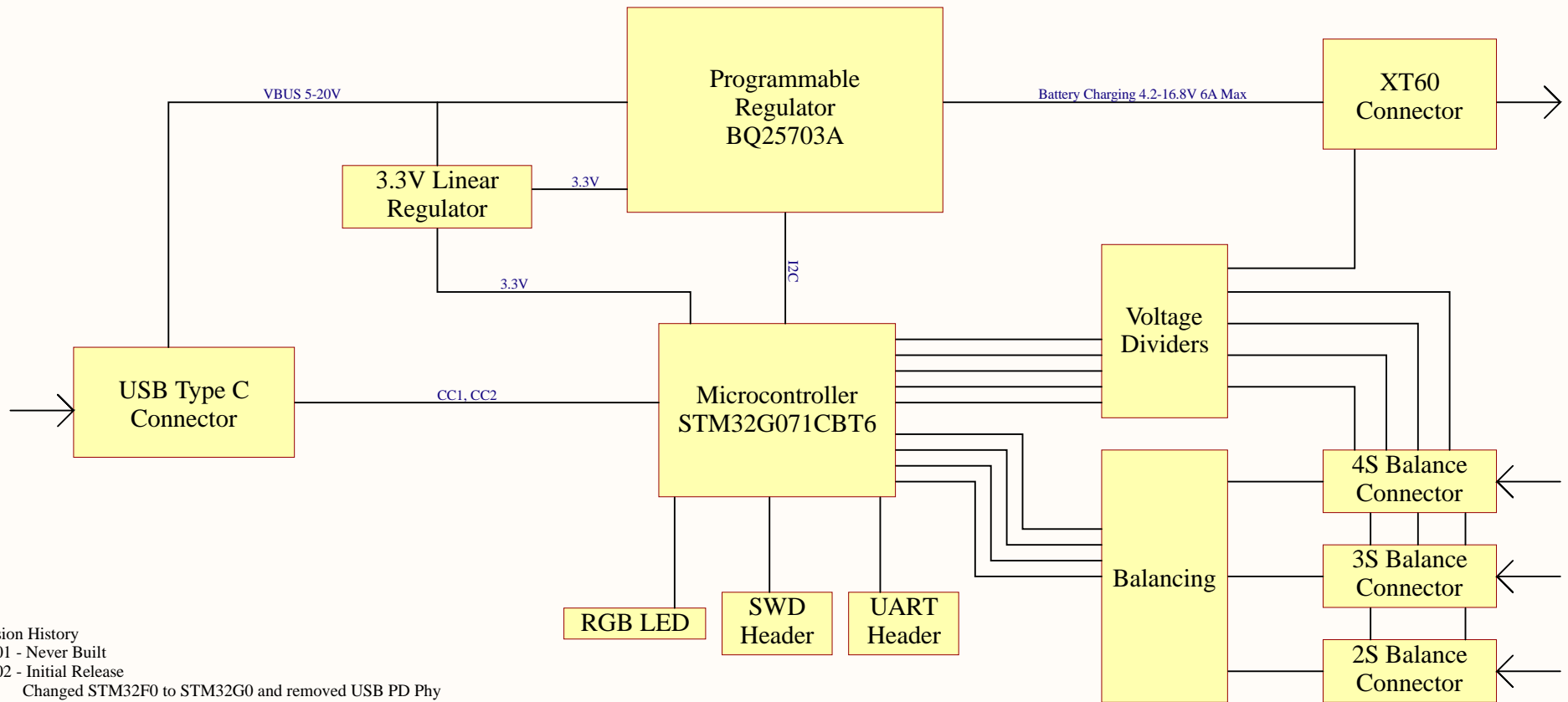


# LiPow - The USB Type C with Power Delivery LiPo Battery Charger



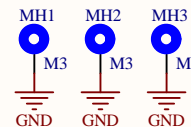
## Revision History

Rev 01 - Never Built

Rev 02 - Initial Release

Rev 03 - Changed STM32F0 to STM32G0 and removed USB PD Phy

- Changed R12 from 10k $\Omega$  to 5.36k $\Omega$  to increase ADC range
- Removed R11 to increase ADC range
- Changed R10 from 3.3k $\Omega$  to 3.57k $\Omega$  to increase ADC range
- Change R9 and R19 from 10k $\Omega$  to 3.57k $\Omega$  and remove R21 and R18 to decrease ADC error
- Changed R51 from 40.2k $\Omega$  to 10k $\Omega$  to increase SYSOVP limit
- Changed R3 and R4 from 3.3k $\Omega$  to 1.2k $\Omega$  to decrease I2C rise time
- Added R44, R48, R58, R59 for USB PD DB
- Added D4, D5, D6, D7, and D8 for balance port ADC ESD protection
- Change R26, R28, R30, and R32 from 100 $\Omega$  to 47 $\Omega$  and increase power rating
- Add Q6, Q7, R2, R11, R18, R21, R22, and R23 to have option for CC input protection and level shifting



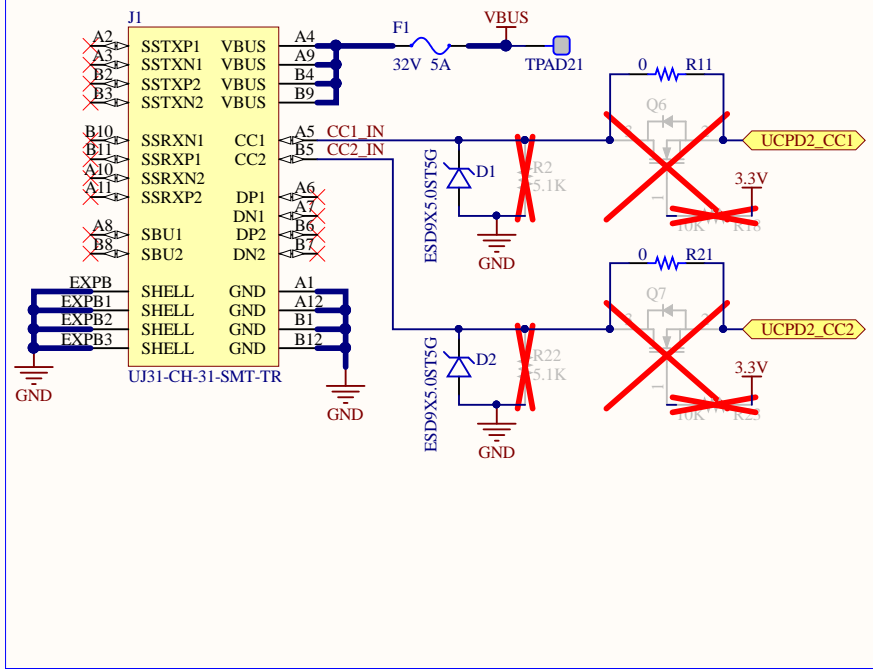
## ARK Electronics LLC

Alex R. Klimaj

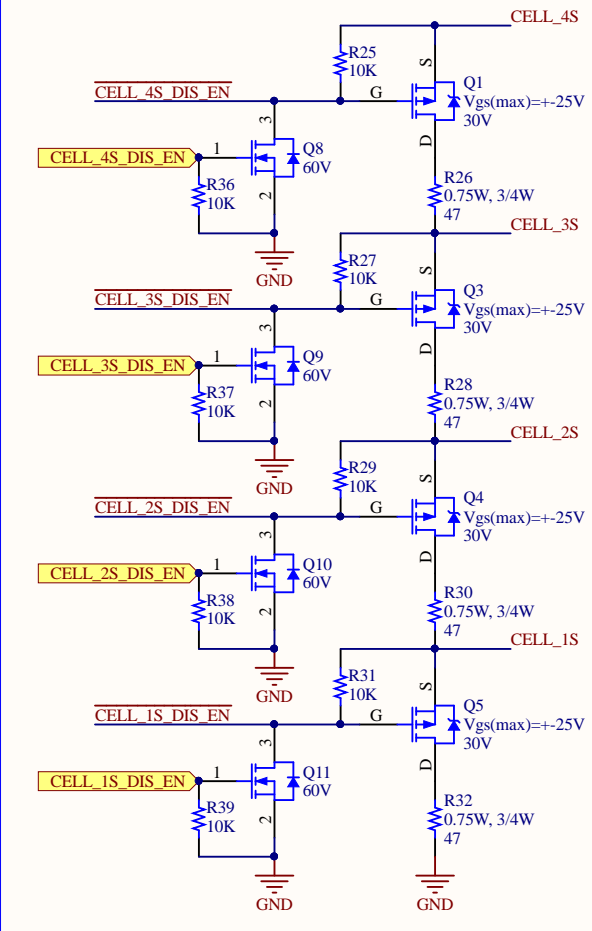
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Project Title: USB Type C PD 3.0 Lipo Charger		Checked By: *	
Date: 5/1/2019		Revision: 3.0	Variant: Production
Time: 10:39:21 AM		Size: LETTER	Sheet 1 of 4

# Connectors, USB PD, and Balancing

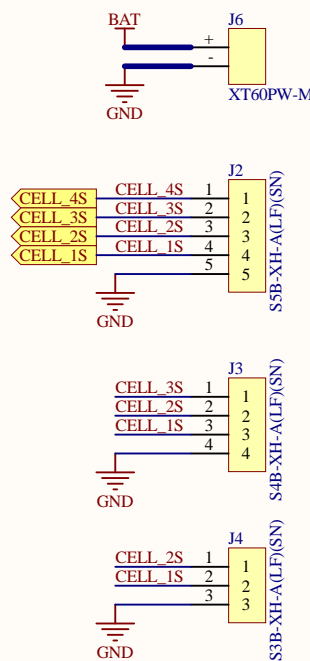
## USB C Connector



## Balancing



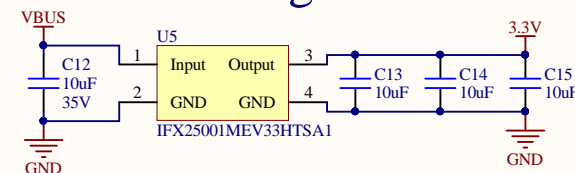
## Battery Connectors



Alternates for Q1, Q3, Q4, and Q5  
RSC002P03T316  
NTR1P02T1G  
DMP510DL-7  
PMV250EPEAR  
Si2347DS

**ARK Electronics LLC**  
Alex R. Klimaj

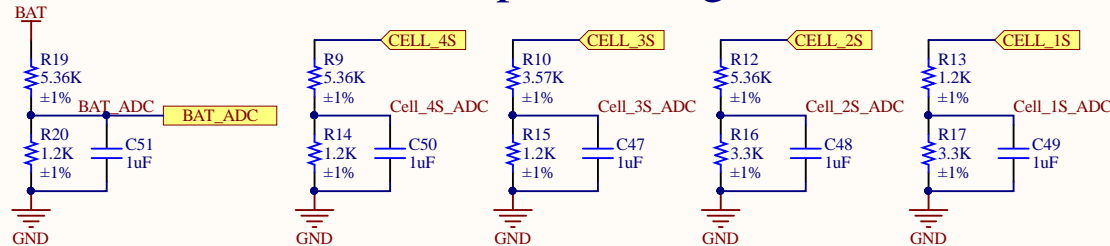
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Size: LETTER		Sheet 2 of 4	



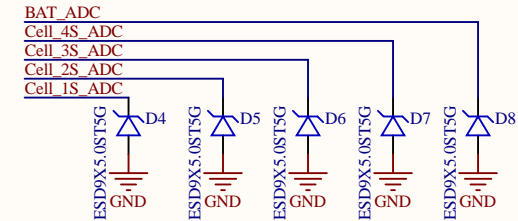
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Project Title: USB Type C PD 3.0 Lipo Charger		Checked By: *	
		Revision: 3.0	Variant: Production
Date: 5/1/2019	Time: 10:39:22 AM	Size: LETTER	Sheet 3 of 4

# Microcontroller

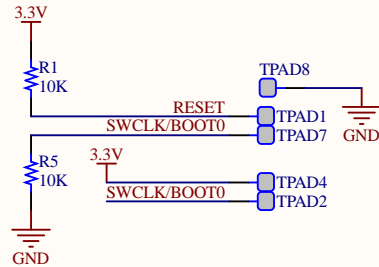
## ADC Input Scaling



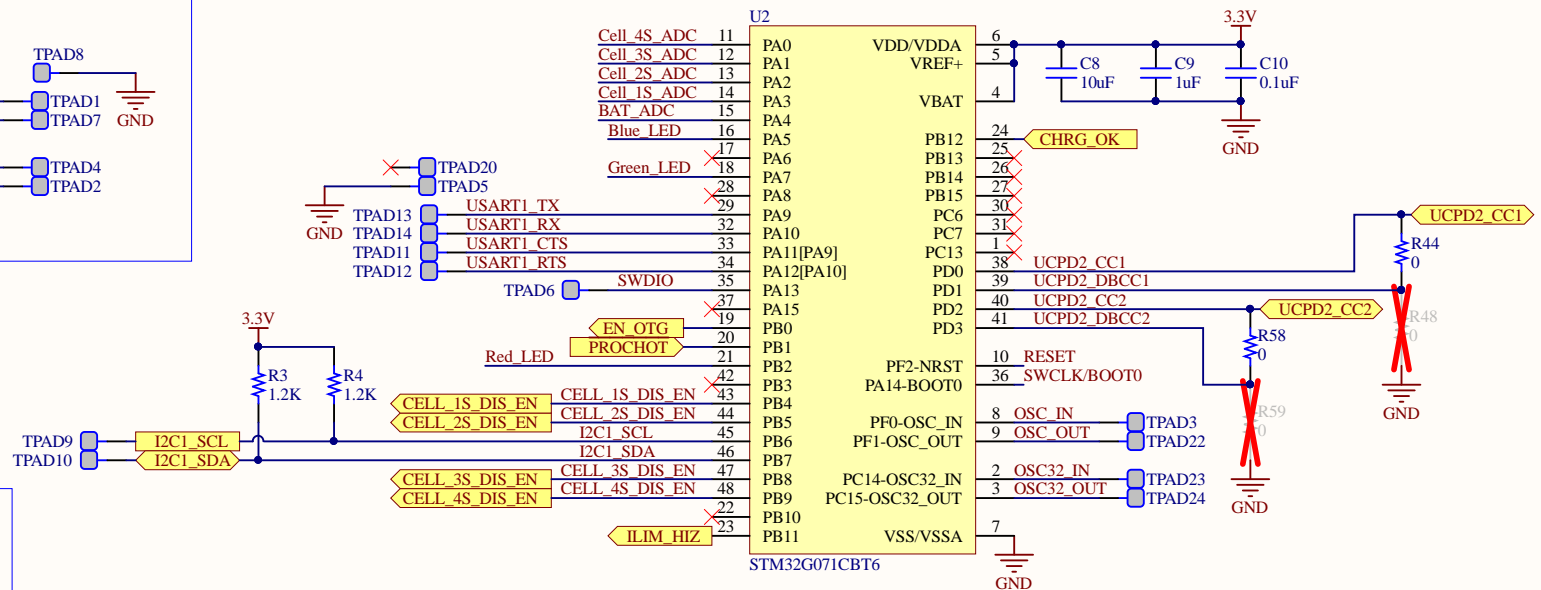
## ESD Protection



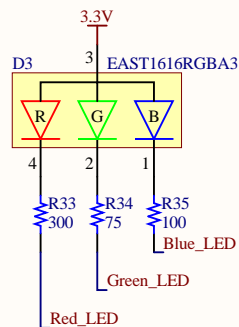
## Programming/Debug



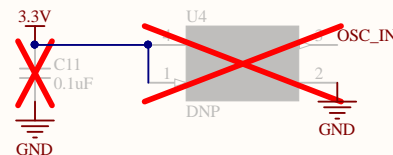
## Microcontroller



## RGB LED



## External Oscillator



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Page Title:  
Microcontroller

Drawn By: Alex Klimaj

Project Title:  
USB Type C PD 3.0 Lipo Charger

Checked By: \*

Date: 5/1/2019

Time: 10:39:22 AM

Revision: 3.0

Variant: Production

Size: LETTER Sheet 4 of 4