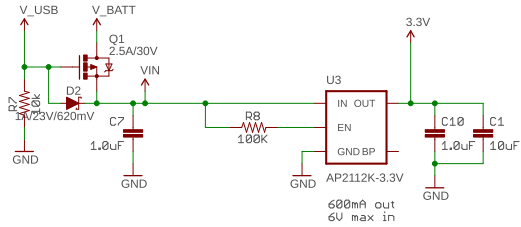


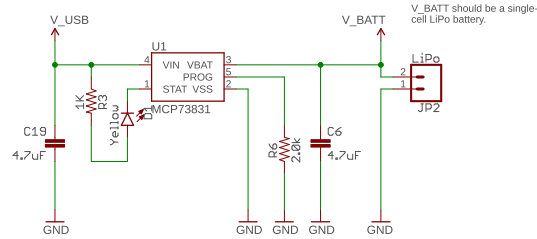
## Voltage Regulator and Battery Charger

V\_USB - 6V MAX  
V\_BATT - Single Cell (4.2V MAX)



600mA out  
6V max in

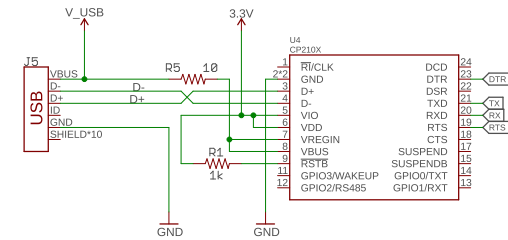
## Lithium-Polymer Battery Charger (1-cell)



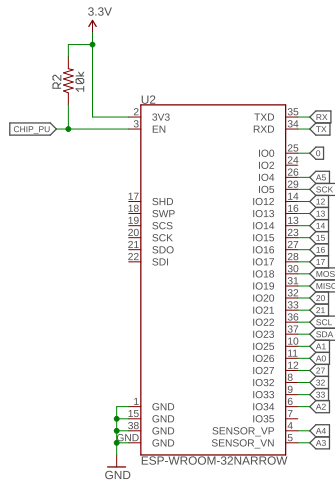
V\_BATT should be a single-cell LiPo battery.

Charge current:  
I\_CHG = 1000 / R\_PROG  
R\_PROG=2k : I\_CHG=500mA

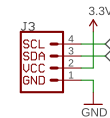
## CP2104/2N (USB-to-Serial Converter)



## Espressif ESP32



## QWIC Connector

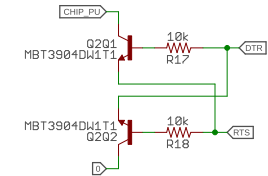


## Auto-Reset

Boot Mode Configuration			
Pin	Default	Boot	Download
GPIO0	1	1	0
U0TXD	1	1	x
GPIO2	0	x	0
GPIO4	0	x	x
MTDO	1	x	x
GPIO5	1	1	x

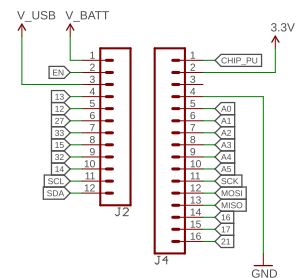
If U0TXD, GPIO2, GPIO5 are floating, GPIO0 determines boot mode

If U0TXD, GPIO2, GPIO5 are floating, GPIO0 determines boot mode



If DTR is LOW, toggling RTS from HIGH to LOW resets to run mode.  
If RTS is HIGH, toggling DTR from LOW to HIGH resets to bootloader.

## Headers



THIS IS A FOUR-LAYER BOARD!

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TITLE: ESP32\_Thing\_Plus

Design by: Mike Hord

Revised by: Alex Wende

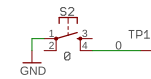
Date: 9/9/2020 12:37 PM

8

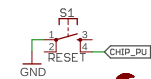
REV:  
v20

Sheet: 1/1

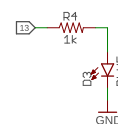
## GPIO0 Button



## Reset Button



## GPIO13 LED



open hardware

sparkfun

Original ESP32 Thing by Jim Lindblom