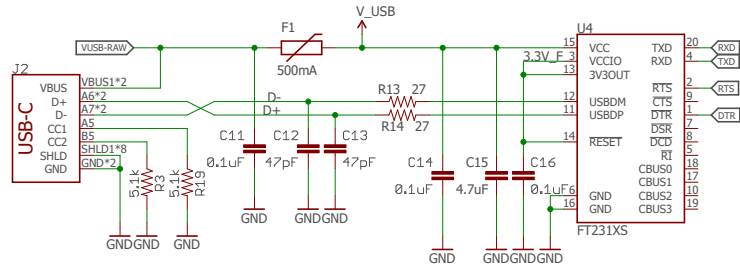
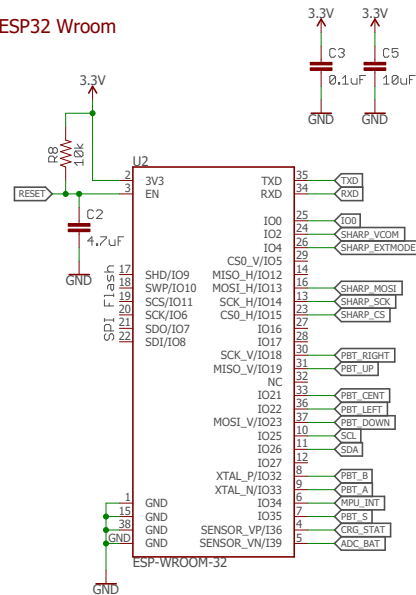


FTDI Adapter

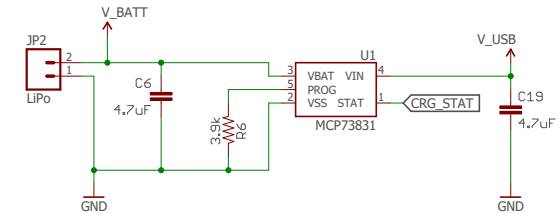


ESP32 Wroom



RTC GPIOs: 0,2,4,12-15,25-27,32-39
usable by ULP, internal Pullups /Pulldowns
ext0 for one pin as wakeup source
ext1 for multiple pins as wakeup source
only for GPIOs: 32-39?
no internal Pullups /Pulldowns

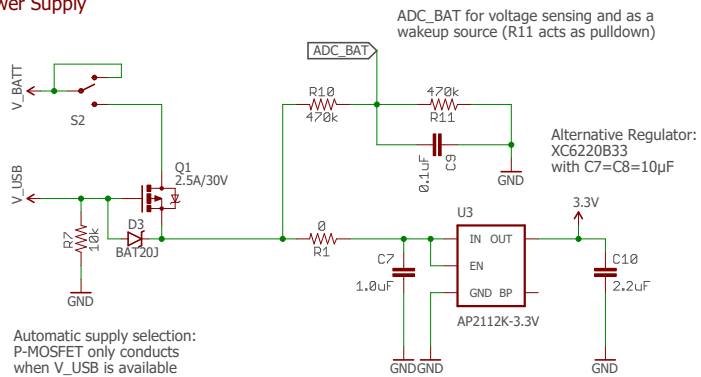
LiPo Charger



Charge current:
 $I_{CHG} = 1000 / R_{PROG}$
 $1000 / 4k\Omega = 256mA$

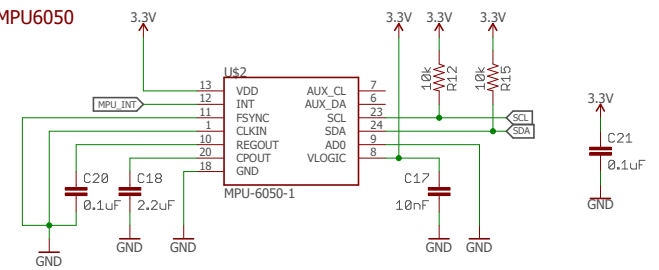
Shutdown - High Z
No Battery Present - High Z
Constant Voltage - Low
Charge Complete - High

Power Supply

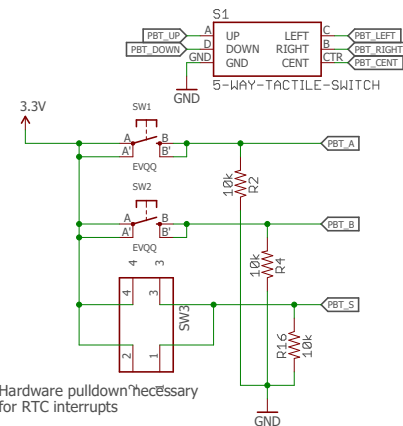


Automatic supply selection:
P-MOSFET only conducts
when V_USB is available

MPU6050



Joystick and Buttons

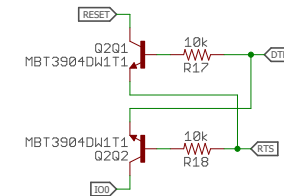


Hardware pulldown necessary
for RTC interrupts

Boot Mode Configuration

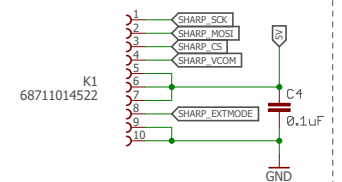
Pin	Default	Boot	Download
GPIO0	1	1	0
U0TXD	1	1	0
GPIO2	0	x	0
GPIO4	0	x	0
MTDO	1	x	x
GPIO5	1	1	x

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



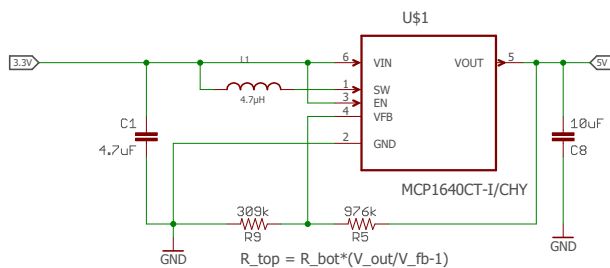
If DTR is LOW, toggling RTS from
HIGH to LOW resets to run mode.
If RTS is HIGH, toggling DTR from
LOW to HIGH resets to bootloader.

Sharp Display Connector



Low Power Handheld REV2
Maximilian Kern
02/2020

5V Charge Pump for LCD



$$R_{top} = R_{bot} * (V_{out} / V_{fb} - 1)$$