LiPo Charger

VBUS

C3
4.7u

U2
MCP73831-2-OT

R4
1k
D2
Green
Battery Charging Indicator

STAT   PROG

GND

VDD   VBAT

SS

R5
10k

GND

C4
4.7u

GND

J2
LiPo battery

GND

D3
B340A

D4
B340A

C5
4.7u

GND

+BAT

3.3v Linear Regulator

U3
MIC5219-3.3YM5   +3.3V

IN   OUT

EN   BP

GND

GND   GND

C6
470p

Todo:
Add on/off switch to enable line

VBUS

R3
1k
Green
D1
VBUS Indicator

GND

USB Input
Programming and Power

4.5 - 5.5 V

J1
USB_B_Micro

VBUS

Shield   GND

D+
D-

R1 22

R2 22

GND

ID-

Crystal_GND23   X1

Todo:
Spec an actual crystal,
choose footprint,
and verify cap values

C1
22p
C2
22p

GND   GND   GND

JP1

GND

R6
10k

+3.3V

+3.3V   +3.3V   +3.3V

C9
100n
C10
100n
C11
100n
C12
100n

GND   GND   GND   GND

1 bypass cap for each VCC/AVCC pin

Need filter for AVCC if we plan on using ADC
We probably won't though

Todo:
Add bypass caps

VBUS   +3.3V   +3.3V

RESET

XTAL1

XTAL2

AREF

VBUS

D+
D-

UCAP

C7
100n

GND

C8
1u

GND

PB0
PB1
PB2
PB3
PB4
PB5
PB6
PB7

UVCC VCC AVCC

PC6
PC7

PD0
PD1
PD2
PD3
PD4
PD5
PD6
PD7

HWB/PE2
PE6

PF0
PF1
PF4
PF5
PF6
PF7

UGND GND

U1
ATmega32U4-A

GND

SCL
SDA

10k
R7

GND

SW1
SW2
SW3
SW4
SW5
SW6

User Input Buttons

Add pullups?

Todo:
Spec Buttons

GND

+3.3V

Verify I2C pullup values

R8
4.7k
R9
4.7k

R10 0

R11 0

Todo:
Add ICSP pins

Qwiic Connector
To External Controller

+3.3V

J3
Conn_01x04

GND

Qwiic Connector
To Display

+3.3V

J4
Conn_01x04

Todo:
Spec final display

GND