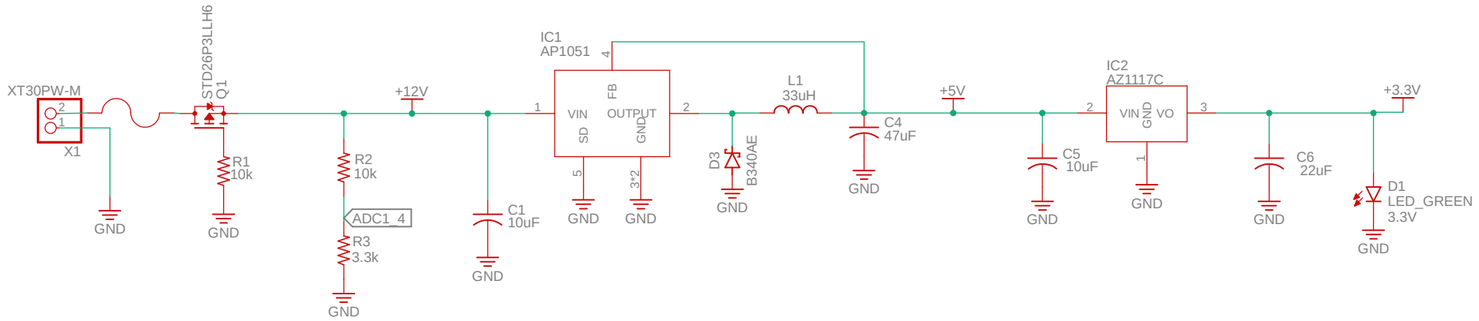
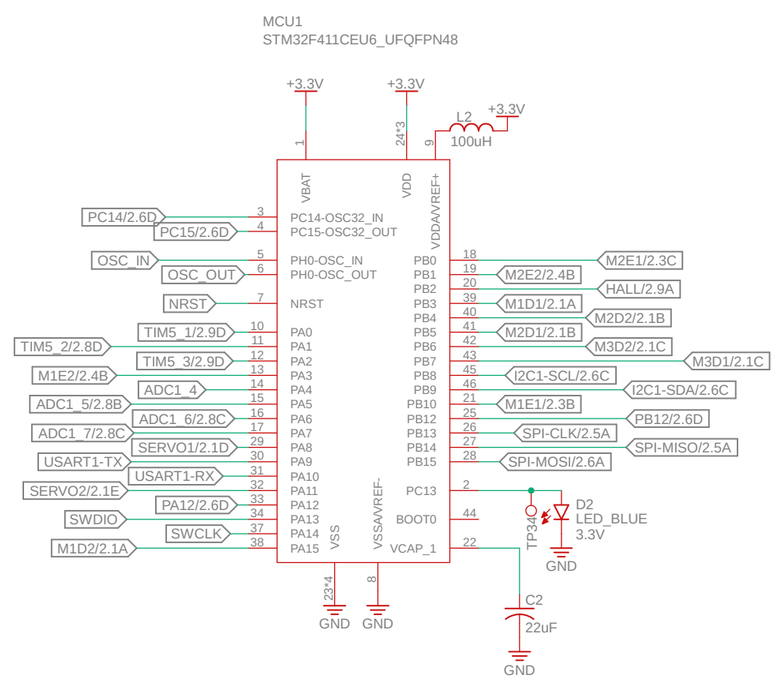
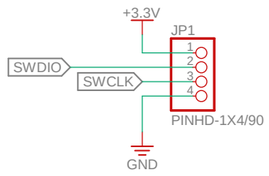
Power Management



MCU Connections

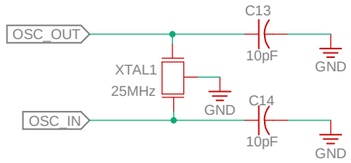


Programming Header

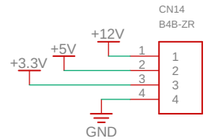


Crystals

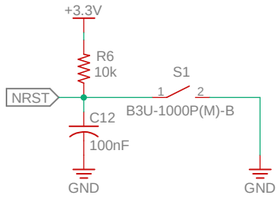
High Speed



Power Bus



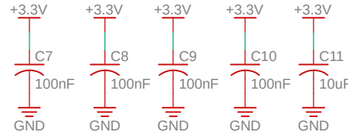
Reset



UART HEADER

Decoupling Capacitors

Place one near each power pair and the 10uF near the input



NOTES:

NOTE 1: EXPECTED TEMPERATURE RISE ON IC1 IS
PDISP = (1/e-1) x VOUT x IOUT
= (1/0.8-1) x 5V x 1.8A
= 2.25 W
TRISE = PDISP x RJB
= 2.25 W x 6 C/W
= 13.5 C

NOTE 2: EXPECTED TEMPERATURE RISE ON IC2 IS
VDROP = VIN - VOUT
= 5V - 3.3V
= 1.7V
PLOSS = VDROP X IOUT
= 1.7V x 0.3A
= 0.51 W
TRISE = PLOSS x RJB
= 0.51 W x 10 C/W
= 5.1 C

NOTE 3: CAPACITOR SIZING FOR OSCILLATORS
High Frequency Oscillator
C1,C2 = 2 x CL-2 x Cstray
= 2 x 10pF - 2 x 5pF
= 10 pF
Low Frequency Oscillator
C1,C2 = 2 x CL - 2 x Cstray
= 2 x 12.5pF - 2 x 5pF
= 15 pF

NOTE 4: RESISTOR DIVIDER FOR BATTERY MONITORING
VR2 = R2/(R1+R2) x VIN
3.3V = R2/(10K+R2) x 12.6
R2 = 3.5k
USE R2 = 3.3k

NOTE 5:
ALL CAPACITORS ARE CERAMIC TYPE

CAL POLY M.E.

TITLE:	Electronics Schematic v34		
Drawn By:	Rees V.	REV:	V1
Date:	5/5/2023 10:28 PM	Sheet:	1/2