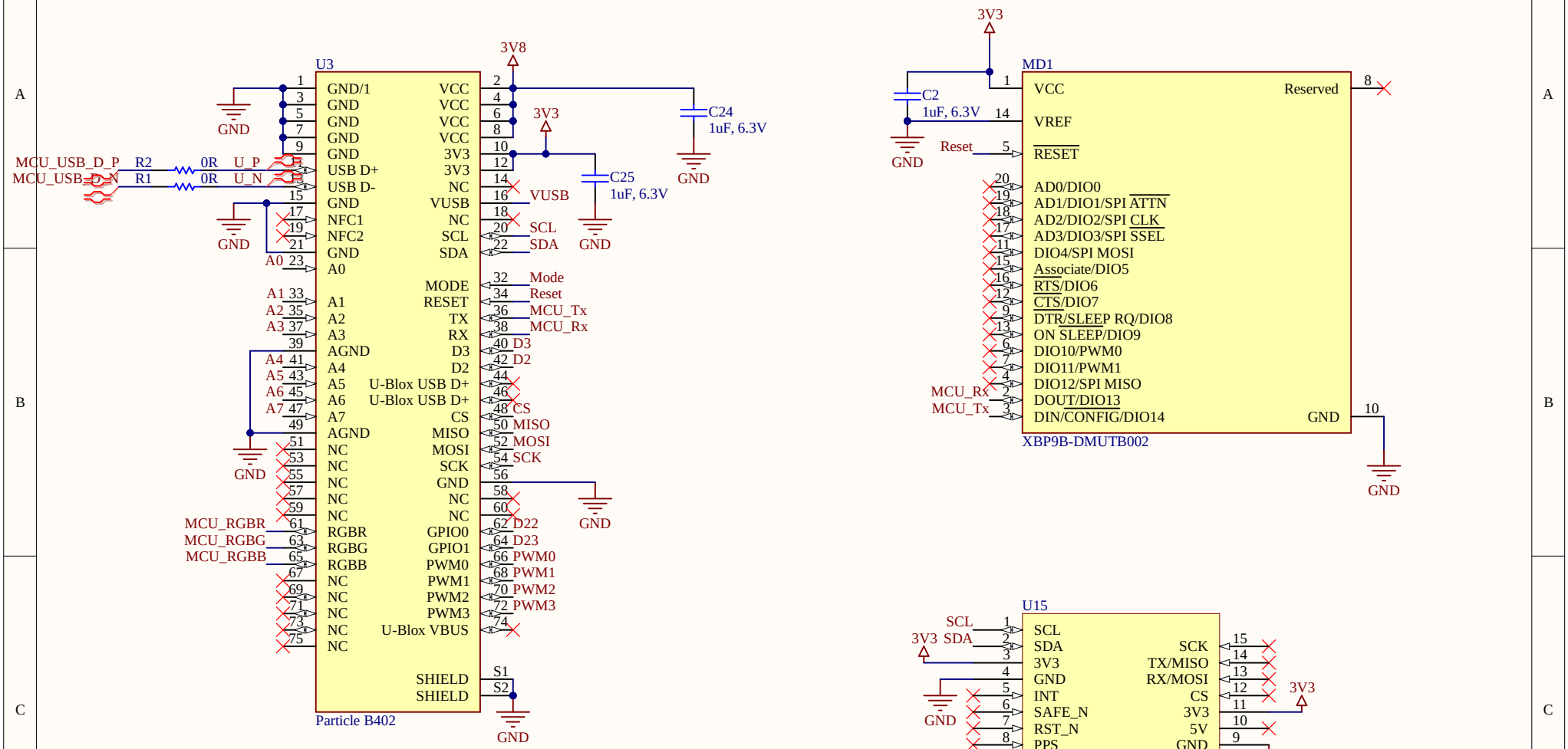
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GND
GND
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USB D-
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A0
A1
A2
A3
AGND
A4
A5
A6
A7
AGND
NC
NC
NC
NC
NC
NC
RGBR
RGBG
RGBB
NC
NC
NC
NC
NC
VCC
VCC
VCC
VCC
3V3
3V3
NC
VUSB
NC
SCL
SDA
MODE
RESET
TX
RX
D3
D2
U-Blox USB D+
U-Blox USB D+
CS
MISO
MOSI
SCK
GND
NC
NC
GPIO0
GPIO1
PWM0
PWM1
PWM2
PWM3
U-Blox VBUS
SHIELD
SHIELD
3V8
3V3
C24
1uF, 6.3V
C25
1uF, 6.3V
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SDA
Mode
Reset
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MCU_Rx
D3
D2
CS
MISO
MOSI
SCK
D22
D23
PWM0
PWM1
PWM2
PWM3
S1
S2
MCU_USB_D_P
MCU_USB_D_N
R2
R1
0R
0R
U_P
U_N
MCU_RGBR
MCU_RGBG
MCU_RGBB
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A1
A2
A3
A4
A5
A6
A7
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MD1
XBP9B-DMUTB002
VCC
VREF
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AD0/DIO0
AD1/DIO1/SPI ATTN
AD2/DIO2/SPI CLK
AD3/DIO3/SPI SSEL
DIO4/SPI MOSI
Associate/DIO5
RTS/DIO6
CTS/DIO7
DTR/SLEEP RQ/DIO8
ON SLEEP/DIO9
DIO10/PWM0
DIO11/PWM1
DIO12/SPI MISO
DOUT/DIO13
DIN/CONFIG/DIO14
Reserved
GND
3V3
C2
1uF, 6.3V
Reset
MCU_Rx
MCU_Tx
U15
U-Blox NEO-M8U Breakout
SCL
SDA
3V3
GND
INT
SAFE_N
RST_N
PPS
SCK
TX/MISO
RX/MOSI
CS
3V3
5V
GND
P17
Header 13X2
PWM3
PWM2
PWM1
PWM0
A1
A2
A3
A4
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A6
A7
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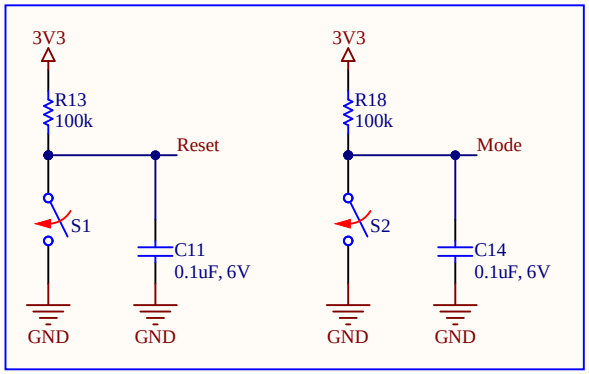
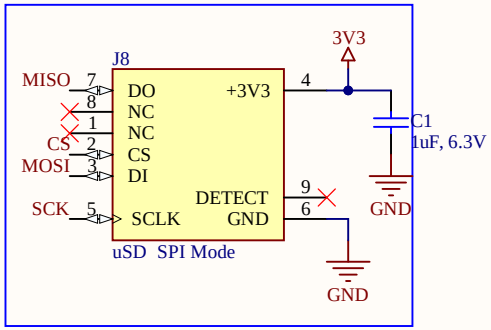
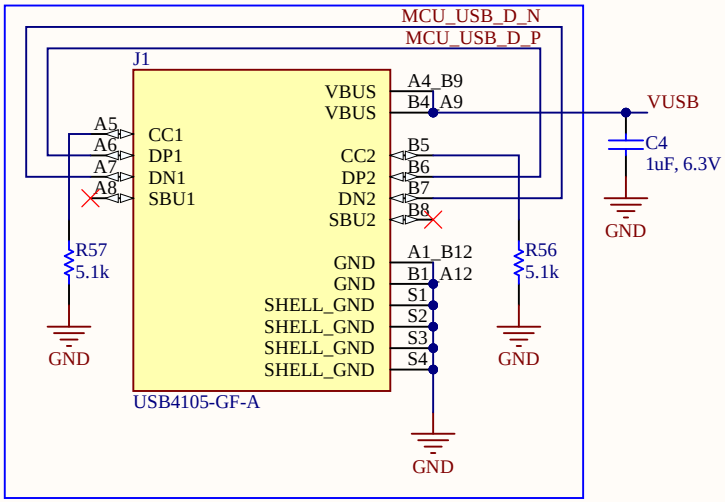


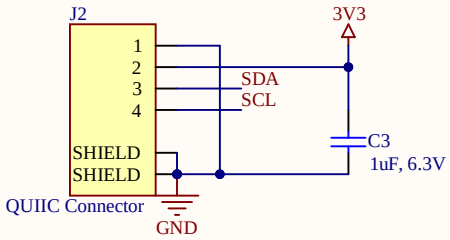
User Buttons



Micro SD Card Reader (SPI)



USB C in 2.0 Mode



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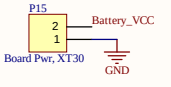
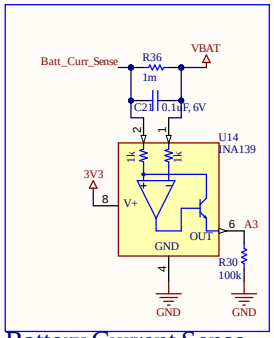
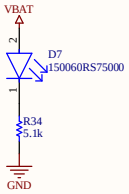
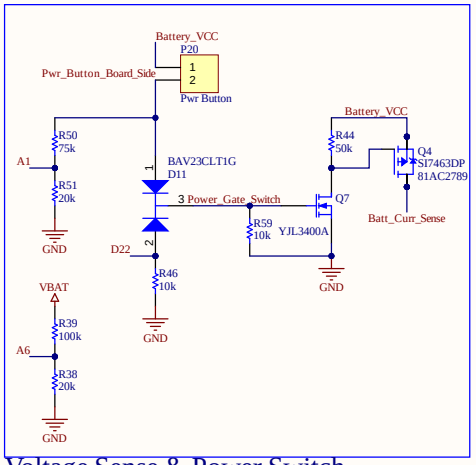


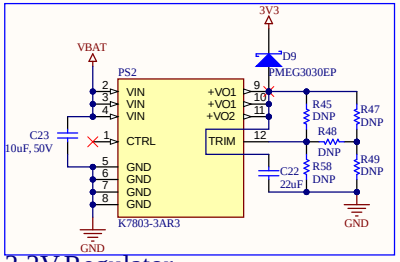


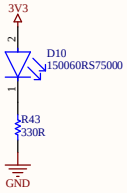
Battery Current Sense



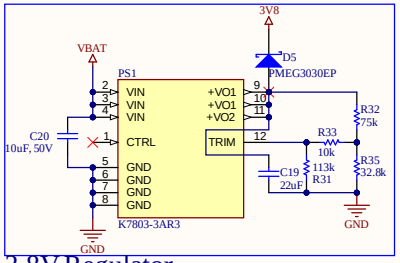


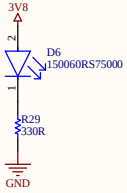
Voltage Sense & Power Switch



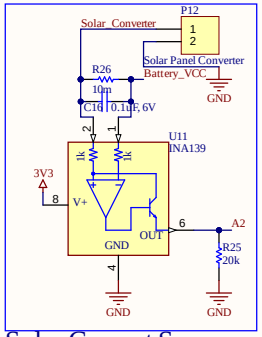


3.3V Regulator

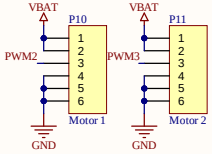


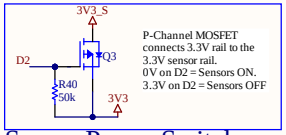


3.8V Regulator

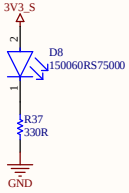


Solar Current Sense





Sensor Power Switch



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PROJECT

Altium

PROJECT REVISION: | DOCUMENT REVISION: | DESIGN ITEM:

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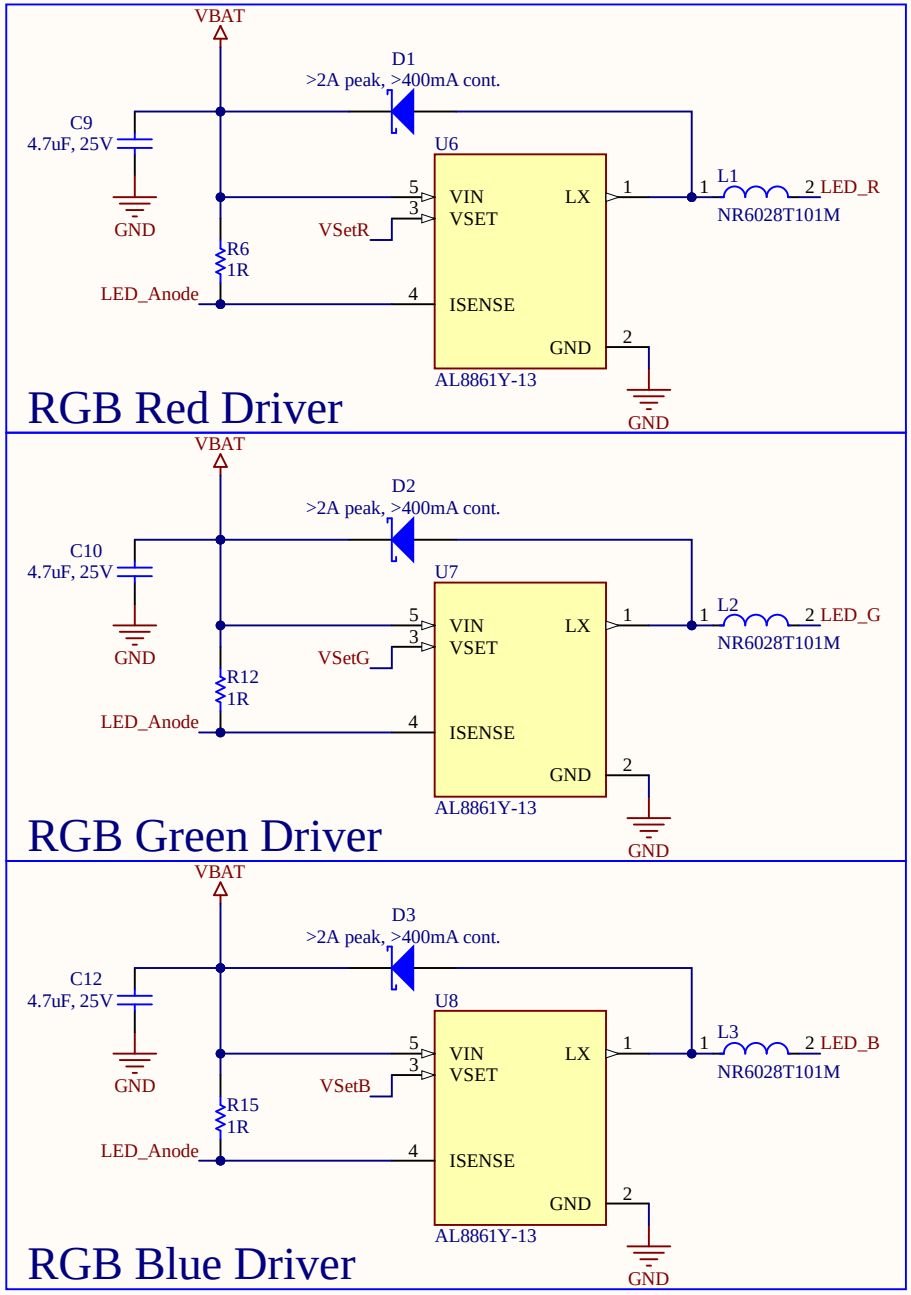
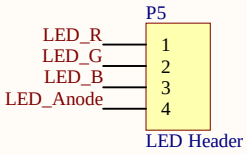
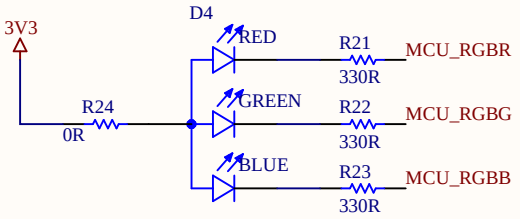
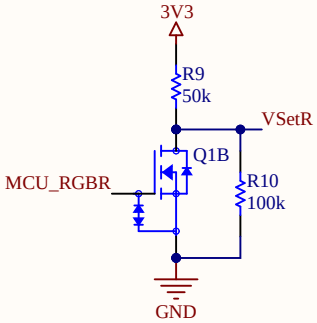
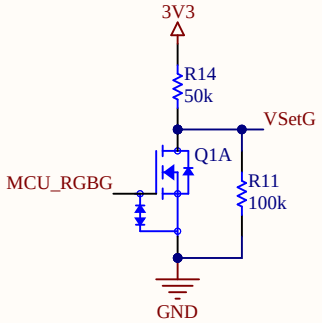


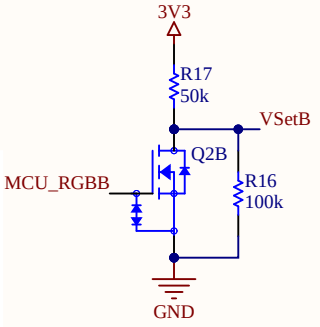
The selected RGB LED has a common anode, so each cathode is connected to its own driver.

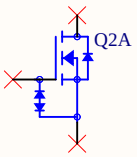












FETs will "invert" the MCU's common-anode LED signal. When the LEDs should be off, MCU_RGBx is 3V3, so VSetx is pulled to GND. When the LEDs are turned on, MCU_RGBx is 0V, so FETs are off and VSetx is pulled to 3V3. Voltage divider resistors (100k for now) are for adjusting final LED brightness

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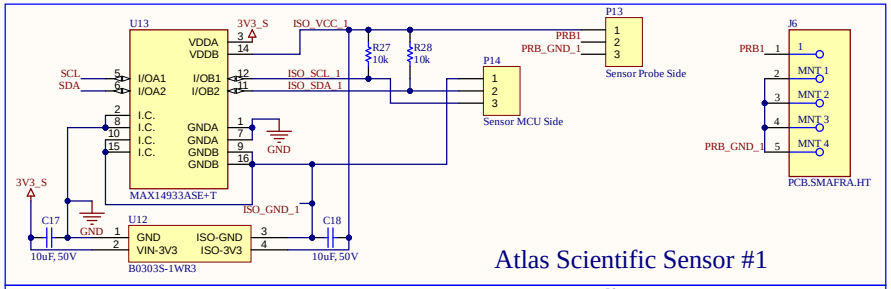
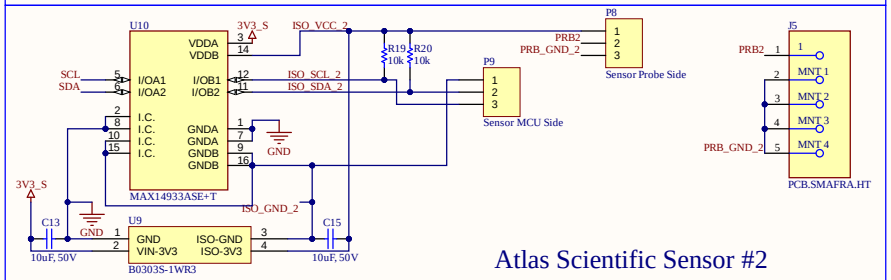


Atlas Scientific Sensor #1



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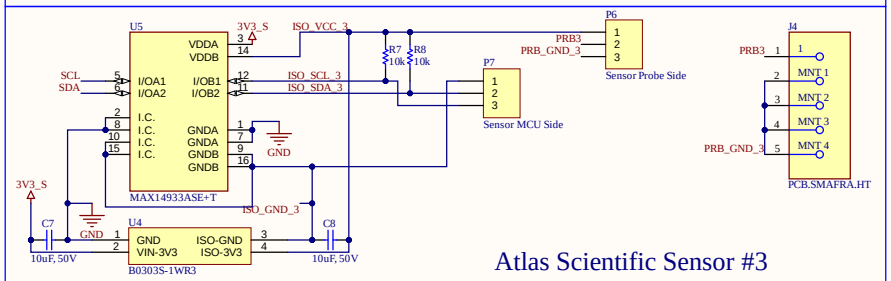

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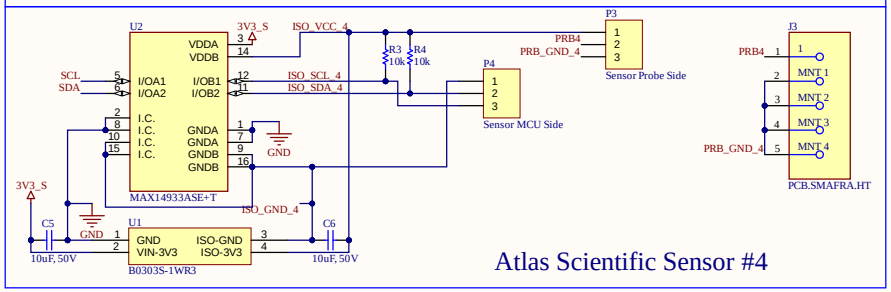

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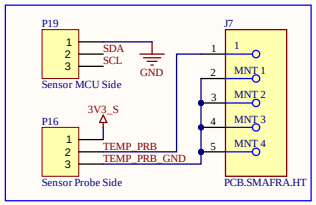
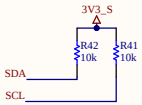
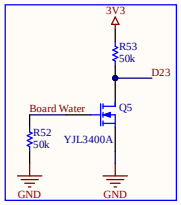
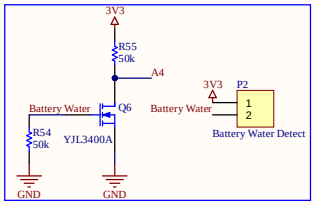


Atlas Scientific Temp Sensor

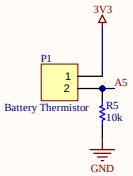






Exposed Copper Water Sensors

Two water sensors, one for each enclosure where water may enter. Put 3V3 trace next to FET's gate trace. When water crosses the traces, digital pin is PULLED LOW to indicate water ingress.



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PROJECT: Altium™

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