

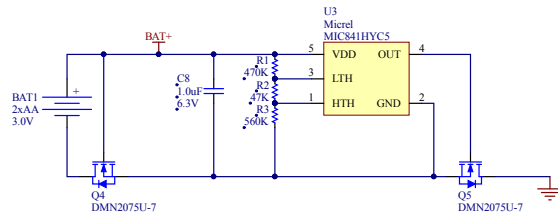
Reverse Voltage Protection and Under Voltage Lockout

Q4 provides protection in case of battery reversal.

Under voltage lockout is set at 2.2V and re-enable will occur at 2.4V. R1, R2, and R3 form a voltage divider that configures U3 as follows:

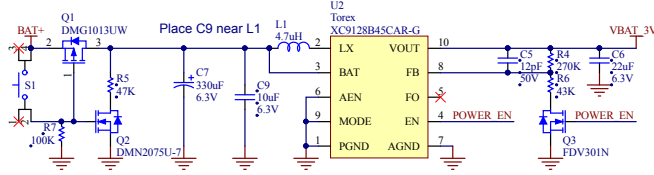
$$V_LOCKOUT = 1.24 * (R1 + R2 + R3) / (R2 + R3)$$

$$V_ENABLE = 1.24 * (R1 + R2 + R3) / R3$$

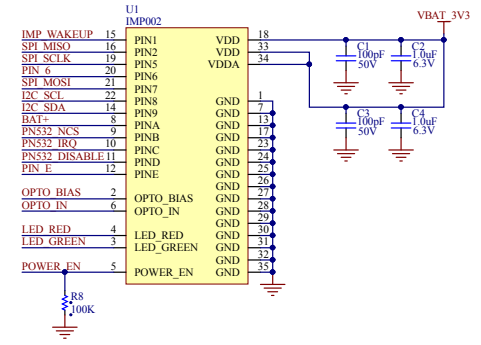


Power Supply

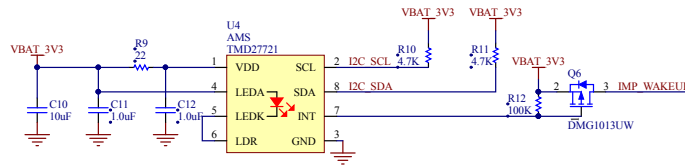
To save power when disabled we use Q3 to turn off the leakage path through the FB network. Alkaline batteries can have a very high output impedance so we recommend at least 220uF on the battery input to support high current peaks. R5 is a bleed resistor that is sized to drain C7 when the reset button is pressed.



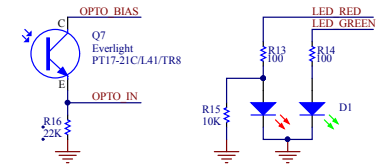
Imp Module



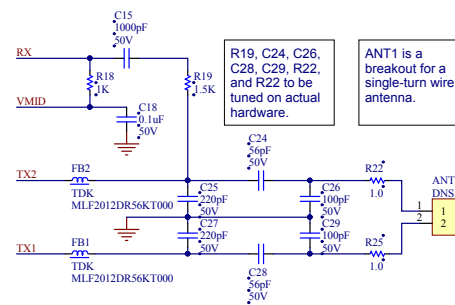
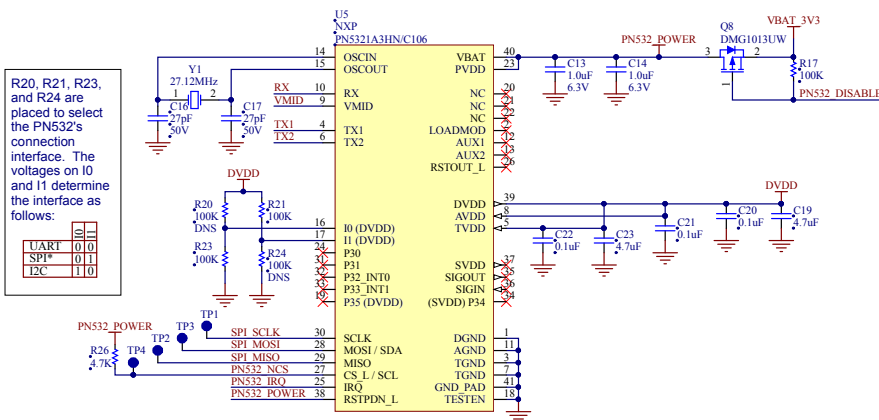
Ambient Light/Proximity Sensor



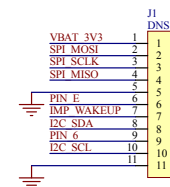
BlinkUp Components



PN532 Module



Expansion Header



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