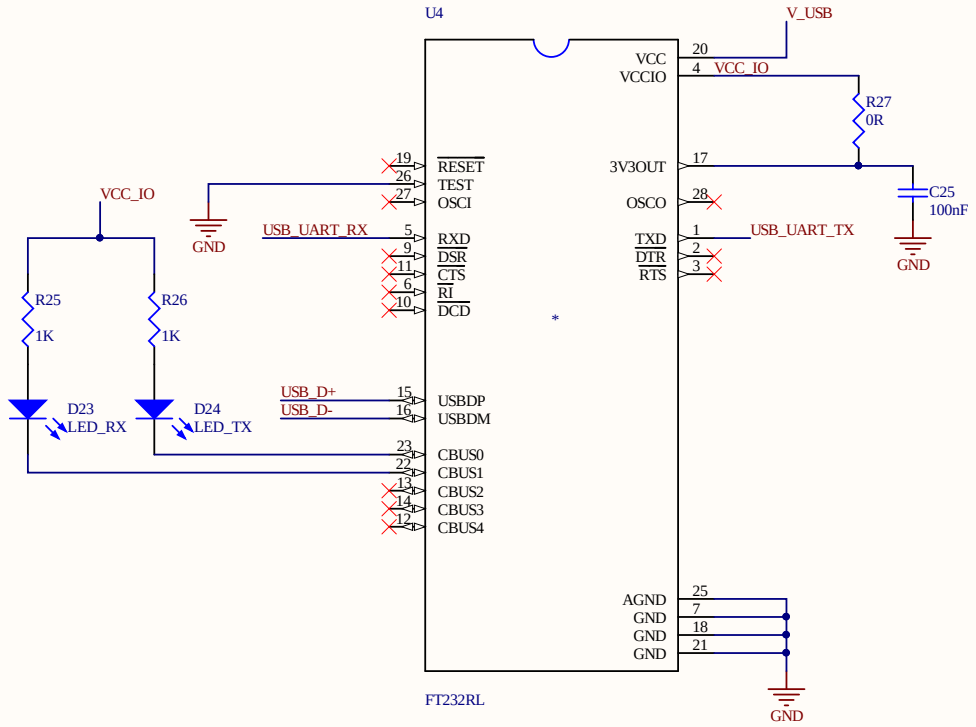
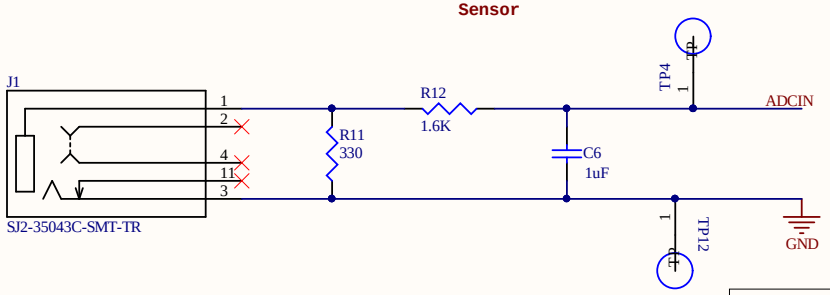
USB UART



Sensor



Title	*Sensor and USB*		*Energy Auditor* *Sensor Node*
Size: A4	Number: 1	Revision: 1	*University of Colorado Boulder*
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File: C:\Users\Preshit\Documents\GitHub\Low-Power-Embedded-Design\BT Mesh\USB.SchDoc			

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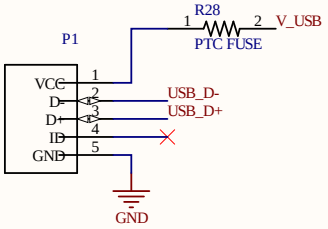
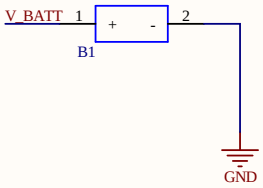
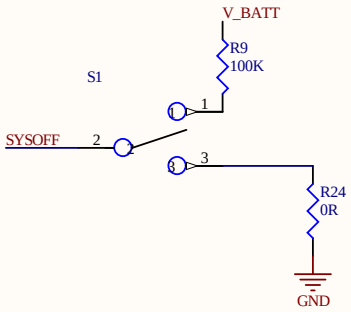
USB Supply Input



Battery Input

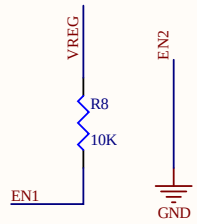


Power Switch



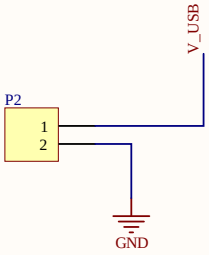
Power ON Circuit. SYSOFF low to Power ON.

Charge Current Select



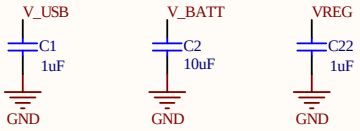
Limiting USB input current to 500mA

Alternate Supply Input

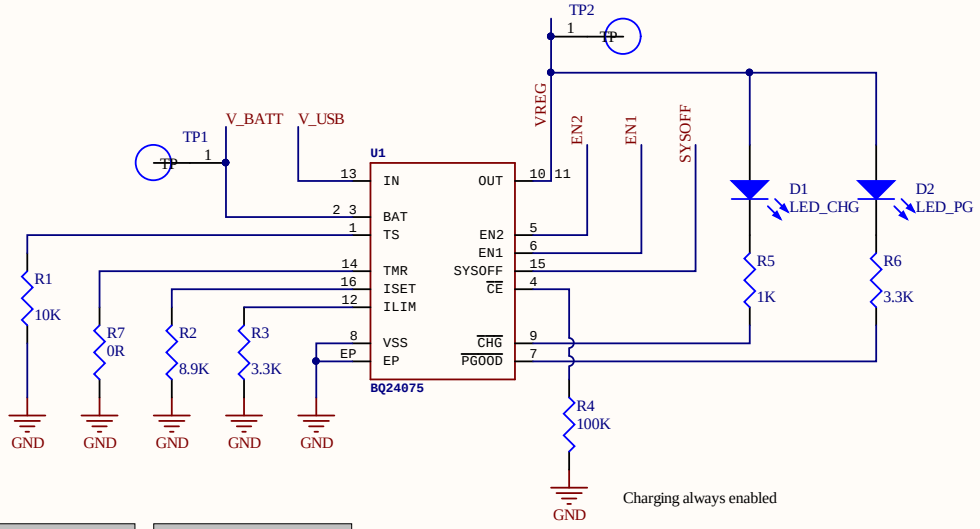


Will populate the header only for debugging

Decoupling Capacitors



PMIC



Charging always enabled

TMR - Safety Timers
Sets precharge and fast-charge safety timers.

- Connect to ground to disable

ISET - Charge Current
I_CHG of Battery is 100mA

Sets fast charge current
- R_SET range: 590-8.9k
- R_SET = ~885/I_CHG
- R_SET = ~885/0.1

- R_SET (R2) = 8.85 kOhm

ILIM - System/Load Current Limit
Limit Current (I_INMAX) to 500mA

- R_ILIM = 1650/I_INMAX
- R_ILIM = 1650/0.5

- R_ILIM (R3) = 3.3K

Title	PMIC		Energy Auditor Sensor Node
Size: A4	Number: 2	Revision: 1	University of Colorado Boulder
Date: 10/23/2018	Time: 12:06:55 PM	Sheet 2 of 5	
File: C:\Users\Preshit\Documents\GitHub\Low-Power-Embedded-Design\BT Mesh\PMIC.SchDoc			

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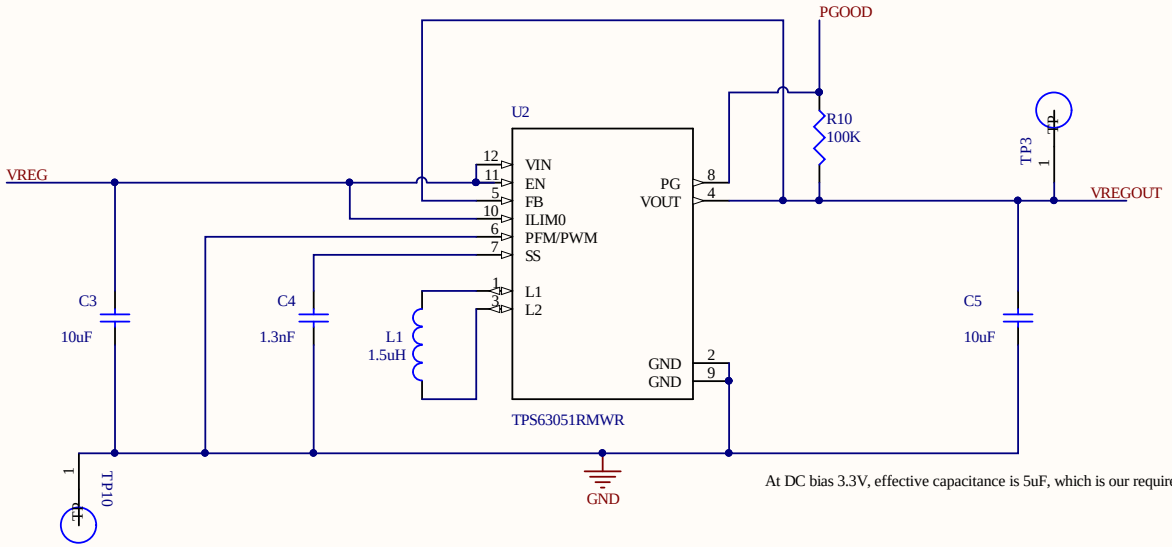
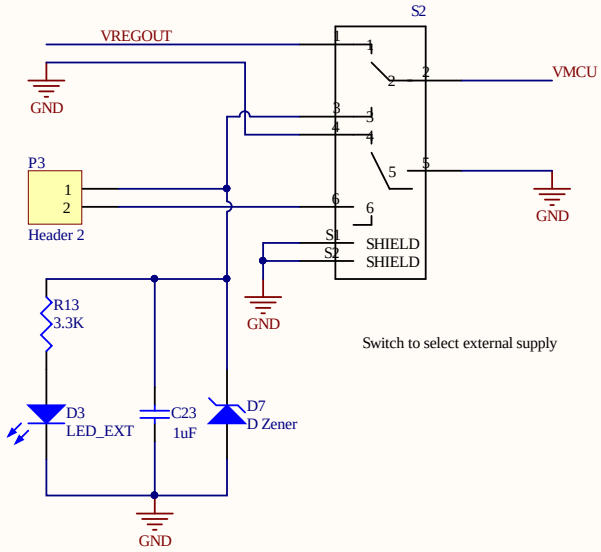
Buck-Boost Converter



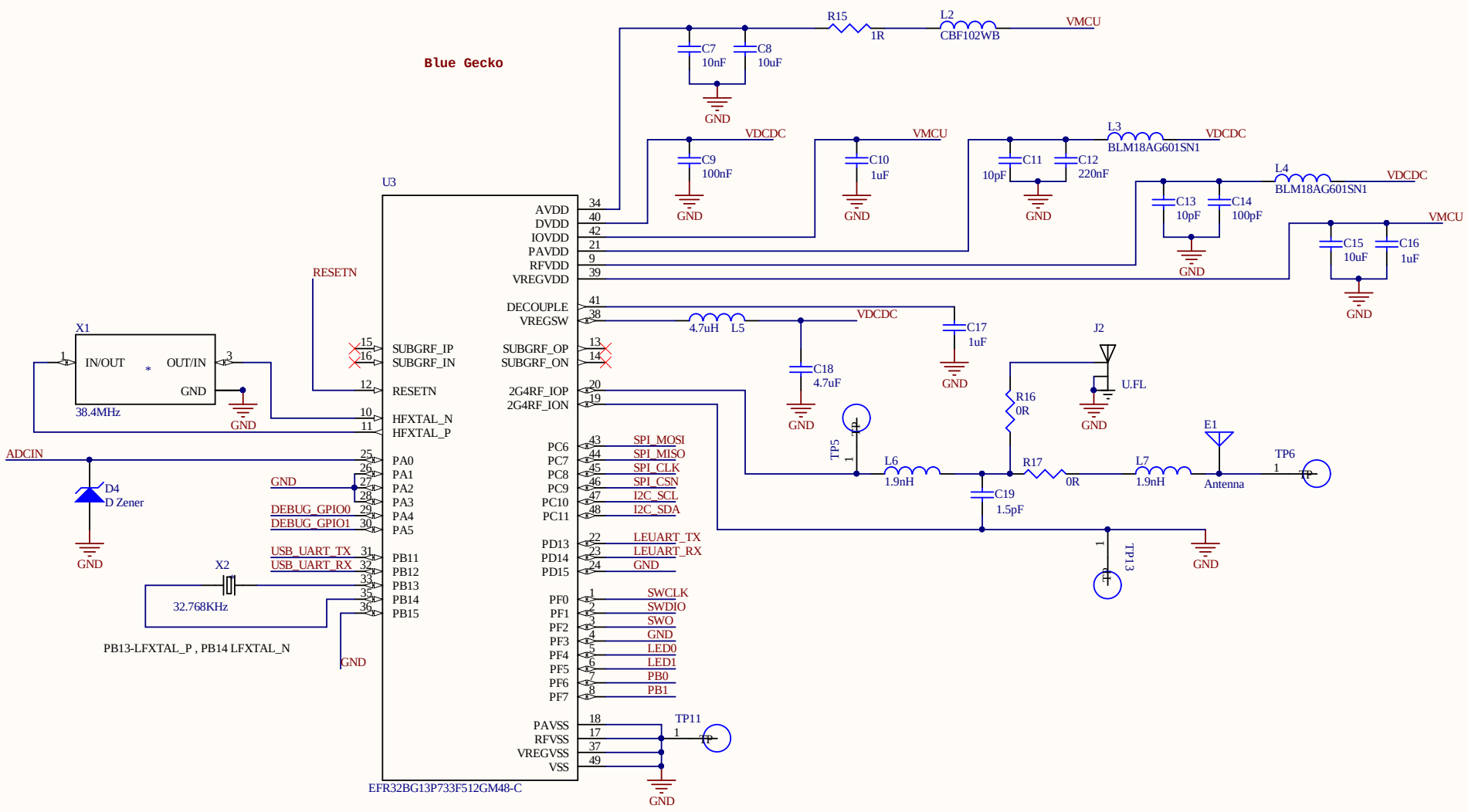
At DC bias 3.3V, effective capacitance is 5uF, which is our requirement

External Input



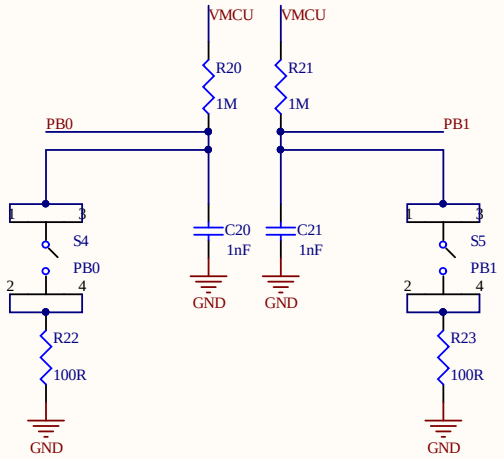
Switch to select external supply

Title	**Regulator**		*Energy Auditor Sensor Node*
Size: A4	Number: 3	Revision: 1	*University of Colorado Boulder*
Date: 10/23/2018	Time: 12:06:55 PM	Sheet 3 of 5	
File: C:\Users\Preshit\Documents\GitHub\Low-Power-Embedded-Design\BT Mesh\Regulator.SchDoc			

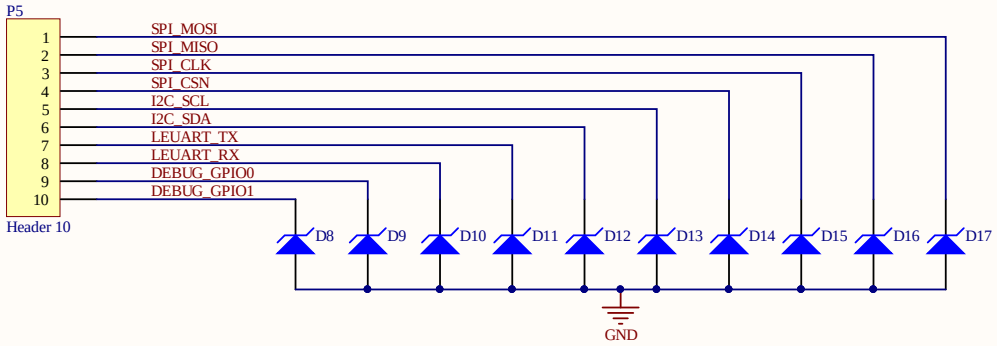


Title	**Blue Gecko**		*Energy Auditor Sensor Node*
Size: A4	Number: 4	Revision: 1	*University of Colorado Boulder*
Date: 10/23/2018	Time: 12:06:55 PM	Sheet 4 of 5	
File: C:\Users\Preshit\Documents\GitHub\Low-Power-Embedded-Design\BT Mesh\Gecko.SchDoc			

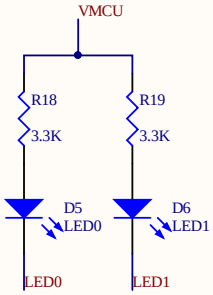
Push Buttons



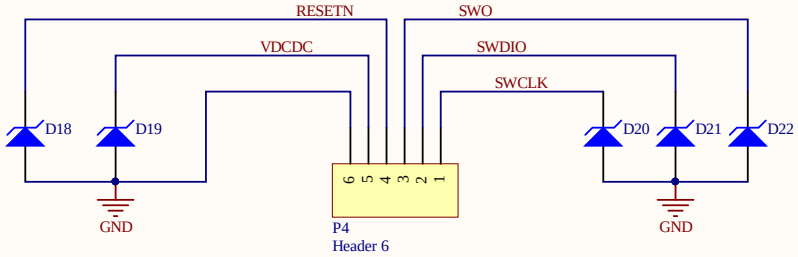
GPIO



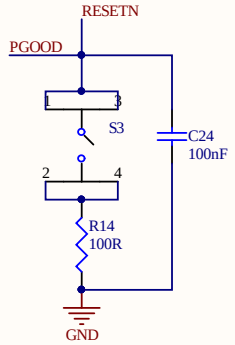
Debug LEDs



Debug Interface



Reset Circuit



RESETN- Active LOW

PGOOD HIGH - S4 OPEN - RESETN HIGH - MCU ON

PGOOD LOW - S4 OPEN - RESETN LOW - MCU RESET

PGOOD HIGH when regulator Vout greater 95% nominal output voltage i.e. 95% of 3.3V

S4 CLOSED - PGOOD don't care - RESETN LOW - MCU RESET

Title	Gecko IO		Energy Auditor Sensor Node
Size: A4	Number: 5	Revision: 1	University of Colorado Boulder
Date: 10/23/2018	Time: 12:06:55 PM	Sheet 5 of 5	
File: C:\Users\Preshit\Documents\GitHub\Low-Power-Embedded-Design\BT Mesh\Gecko IO.SchDoc			

Altium