



Thunderboard Sense

EFR32MG12P332F1024GL125

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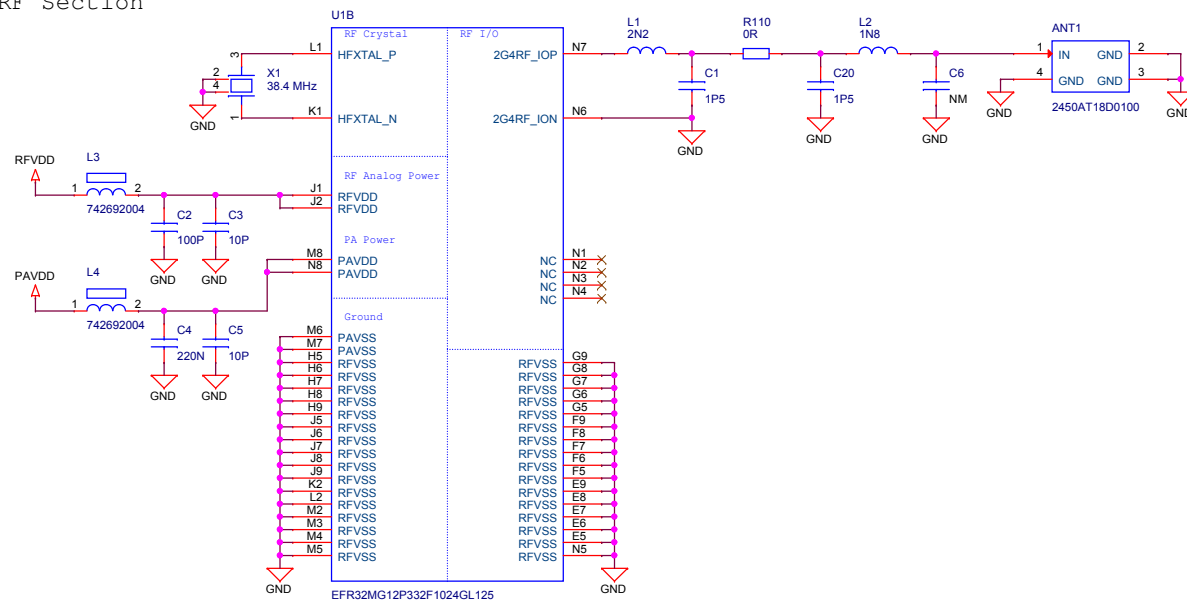
Revision History

Rev.	Description
A00	Initial prototype version.
B00	Updated EFR32 and debugger IC revisions. Replaced analog microphone with an I2S-based digital one.
B01	Changed microphone to Knowles SPH0645LM4H-B
C00	Updated microphone and SPI Flash pinout. Changed to Invensense microphone and 9-axis IMU.
C01	Updated hall effect sensor (Si7210) revision.

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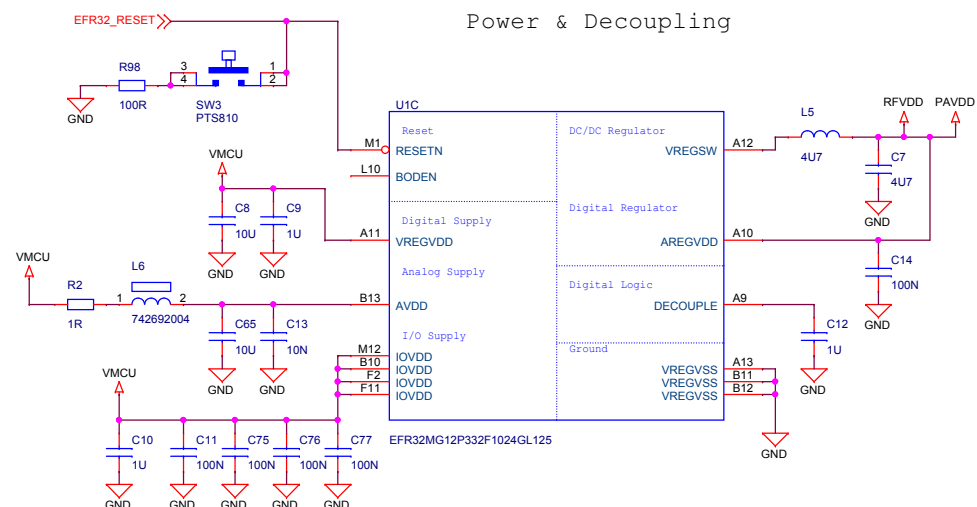


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M1 2.2 MM

M2 2.2 MM



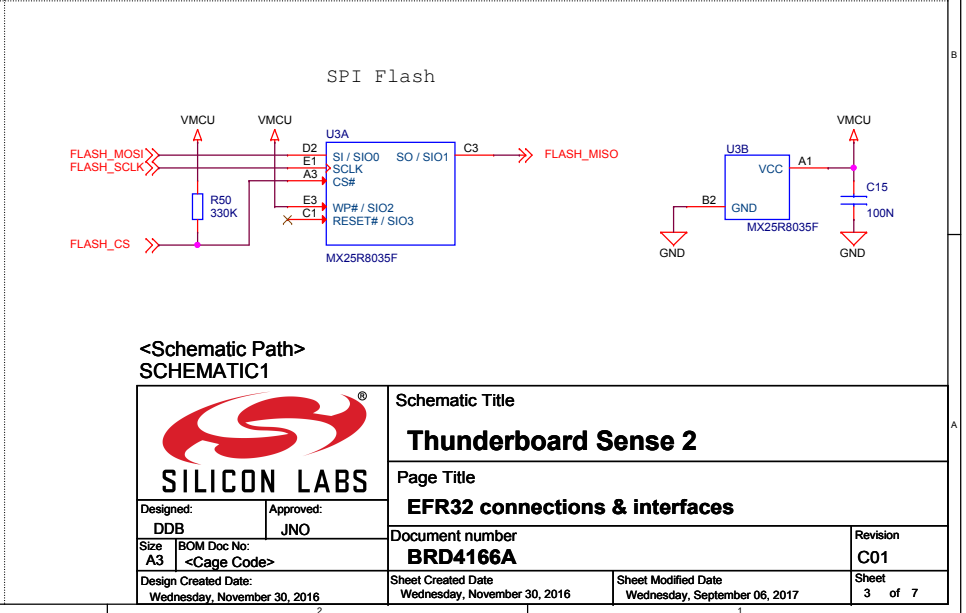
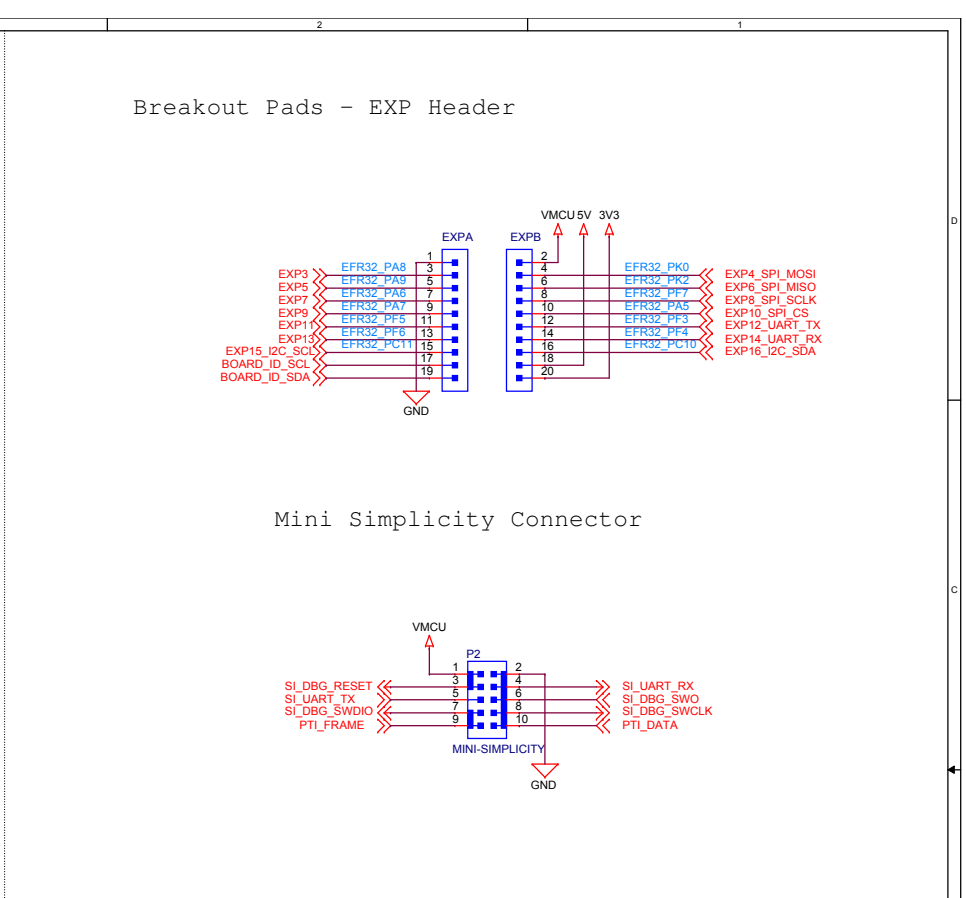
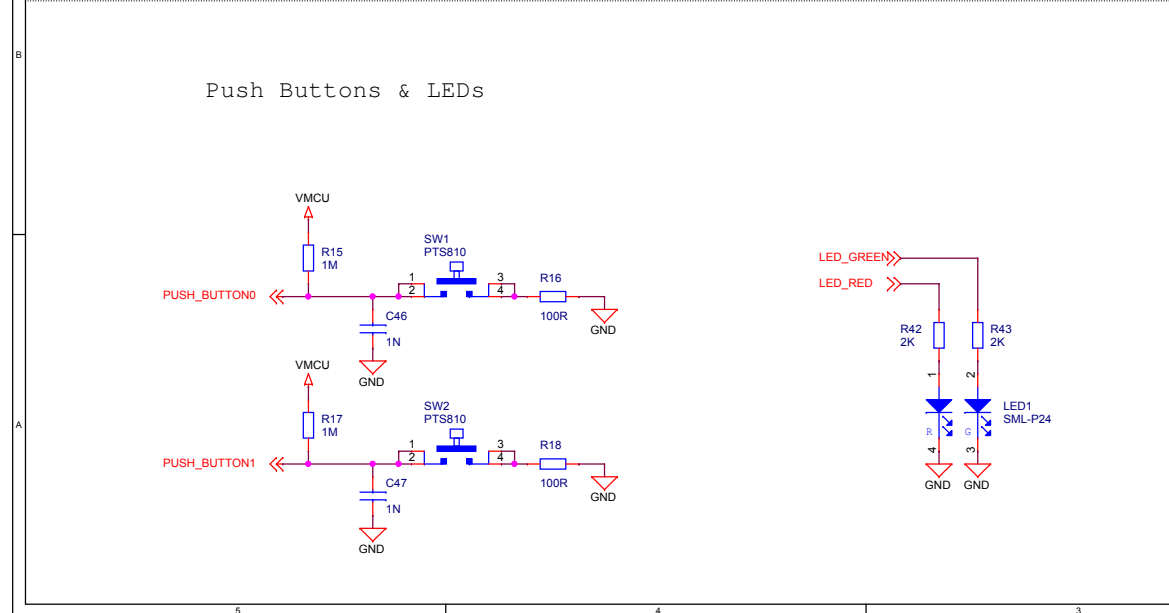
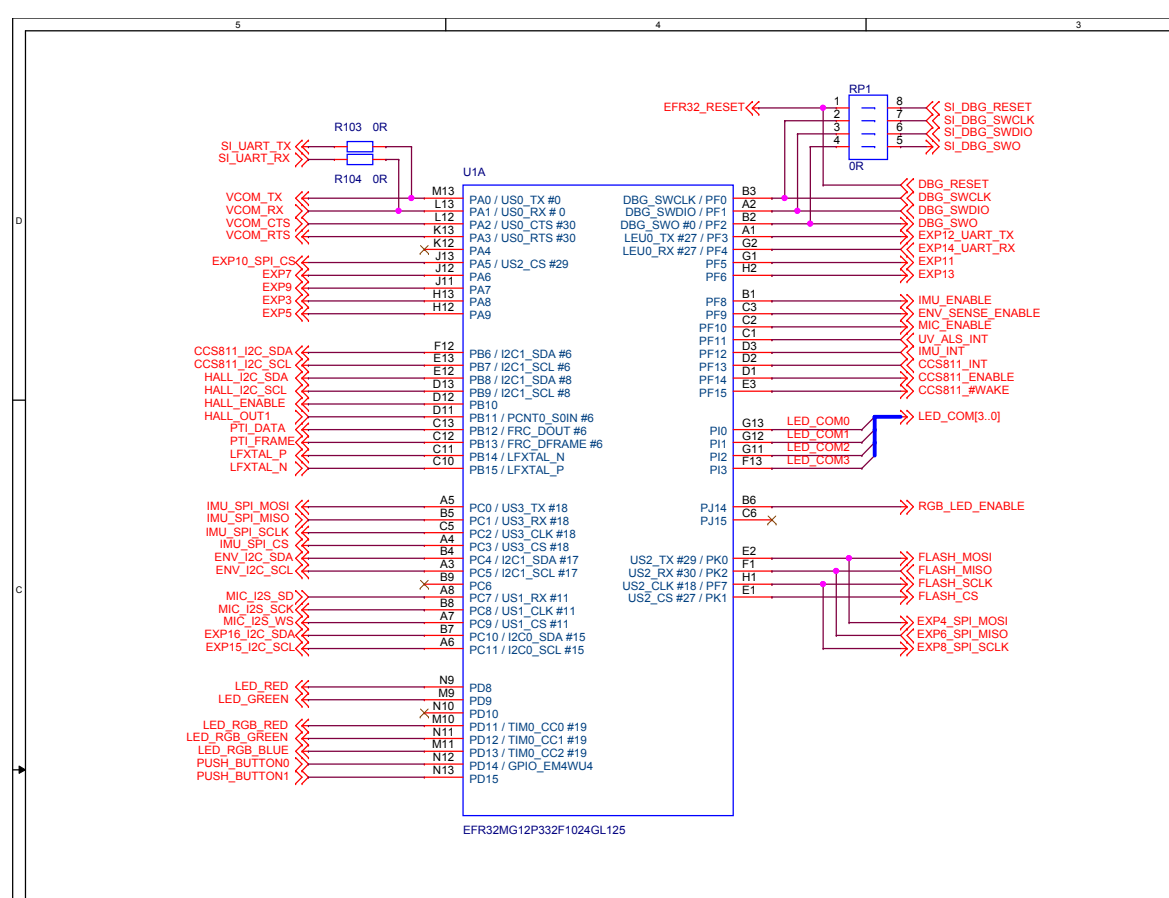
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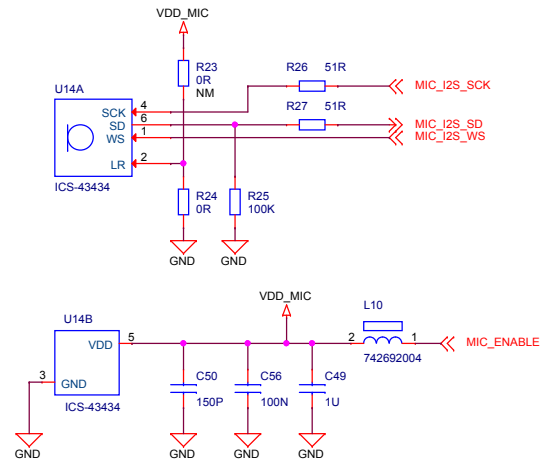
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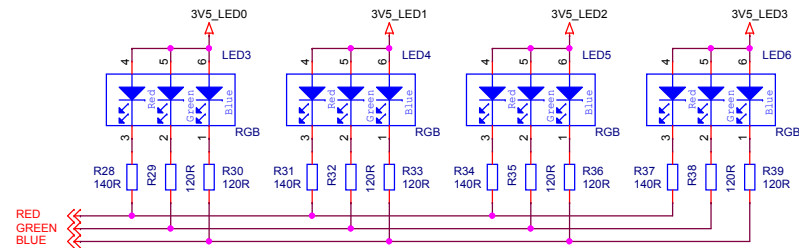
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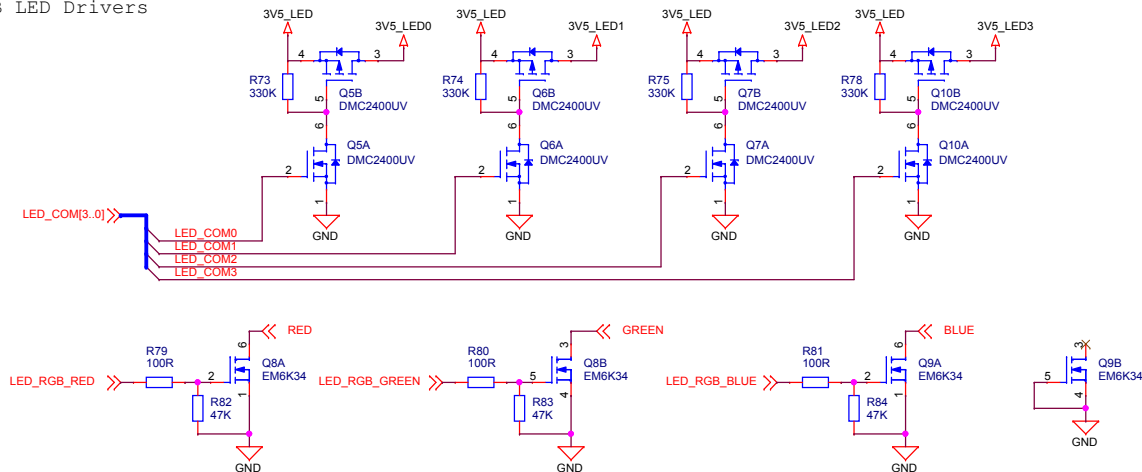
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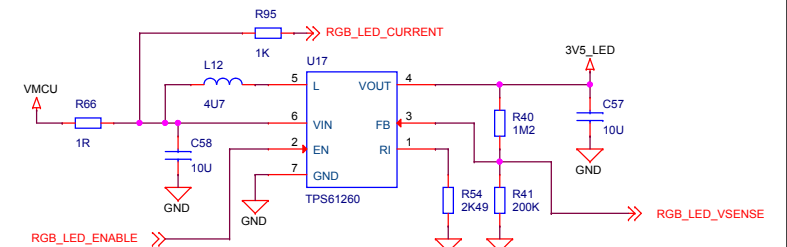
RGB LEDs



RGB LED Drivers



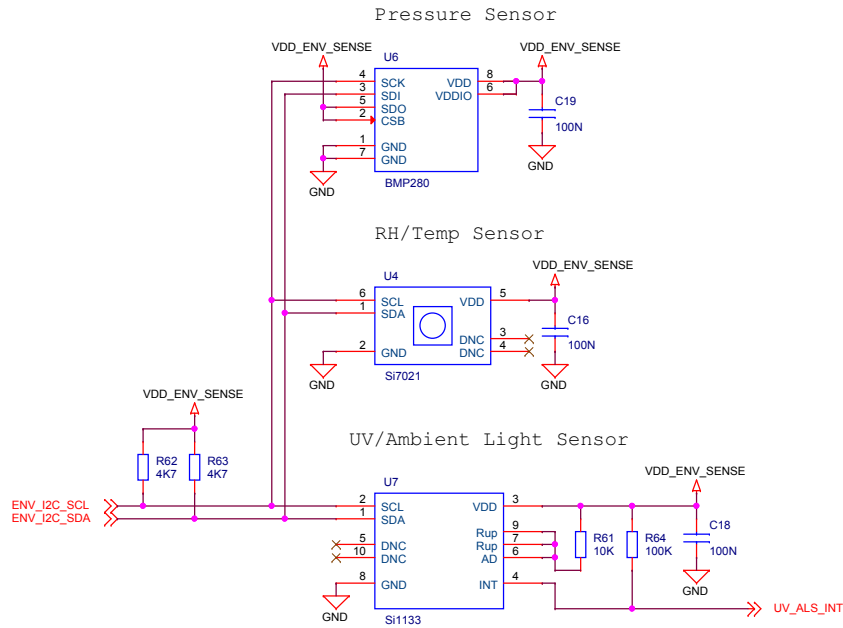
RGB LED power supply



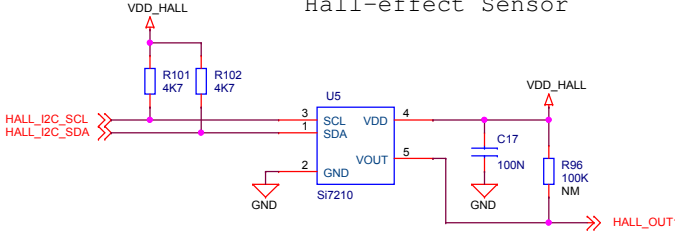
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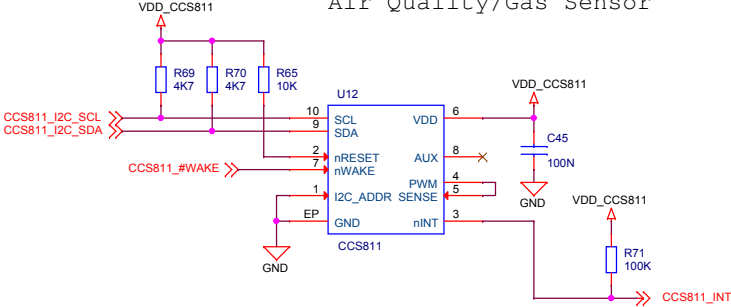
Environmental Sensors



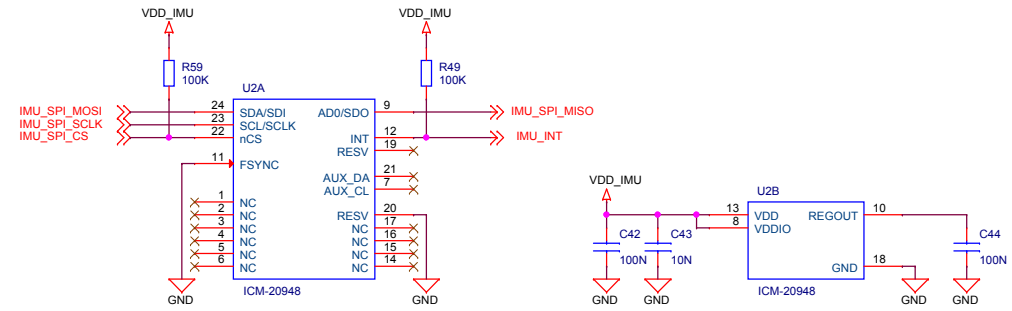
Hall-effect Sensor



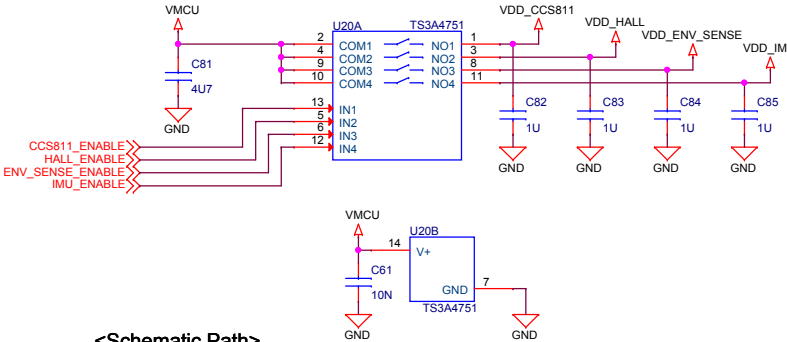
Air Quality/Gas Sensor



9-axis inertial sensor



Sensor Power Control



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SCHEMATIC1

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Debug MCU Connections to Mini Simplicity Header

RP2

1 2 3 4 5 6 7 8

DBGMCU_SWIO DBGMCU_SWCLK DBGMCU_SWO DBGMCU_RESET

SI_DBG_SWIO SI_DBG_SWCLK SI_DBG_SWO SI_DBG_RESET

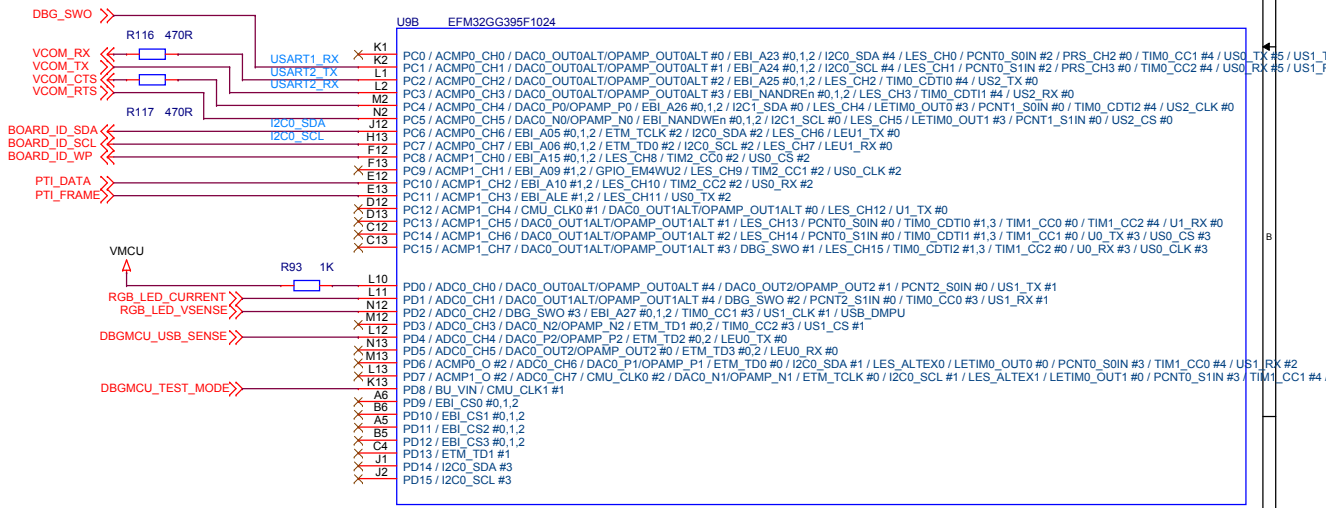
OR NM

R105 OR NM

DBGMCU_TXD DBGMCU_RXD

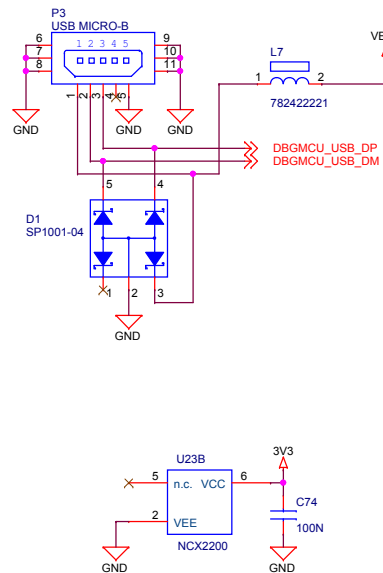
SI_UART_TX SI_UART_RX

R106 OR NM



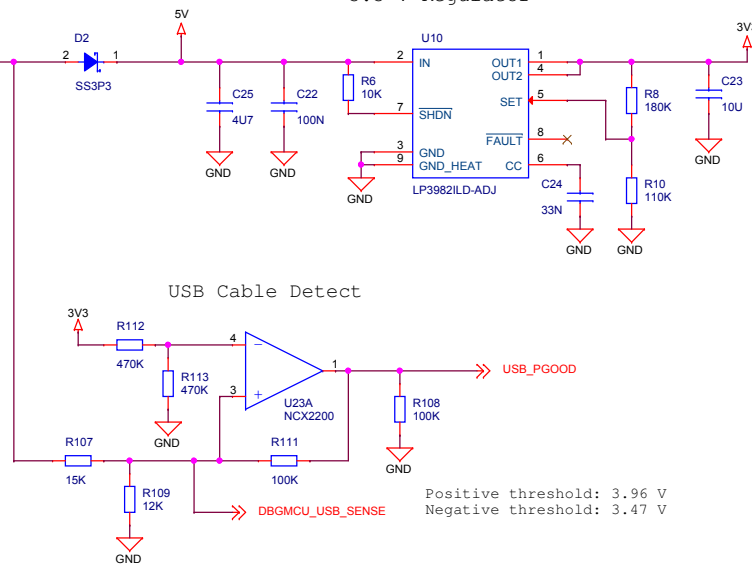
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USB Connector

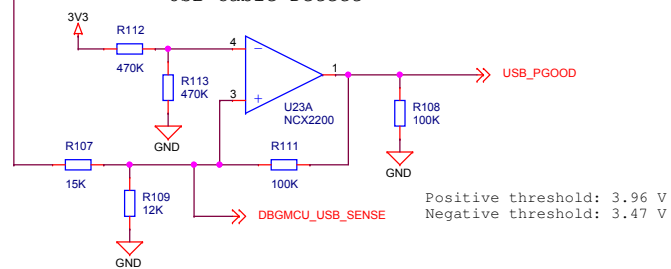


User can supply 3.6 - 5.5 on "5V" pin instead of using the USB cable

3.3 V Regulator

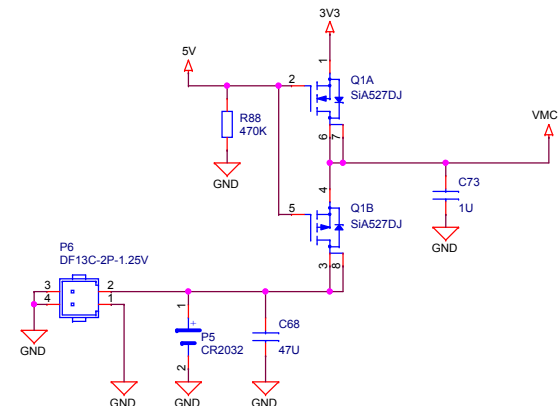


USB Cable Detect



Positive threshold: 3.96 V
Negative threshold: 3.47 V

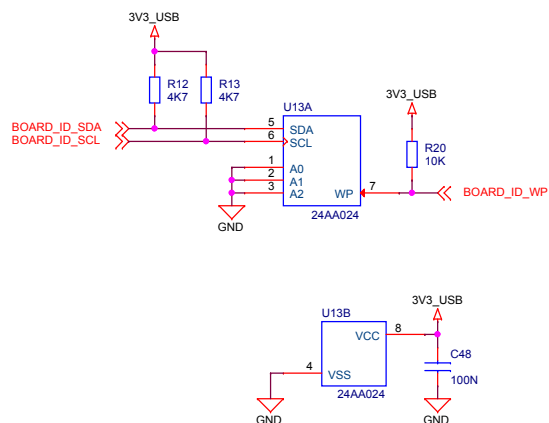
Board power select circuit



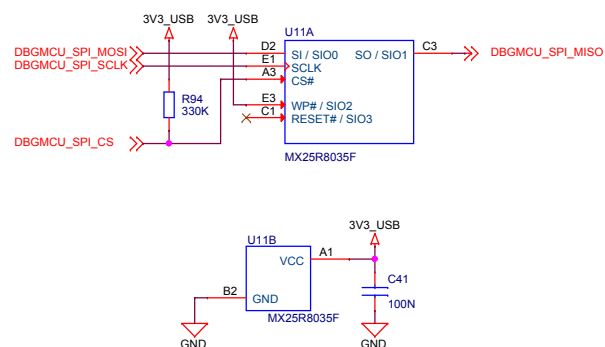
Q1 switches from battery power to USB when USB is plugged in.

Additionally, the Mini Simplicity Debug connector can supply power directly to the target voltage domain.

Board ID EEPROM

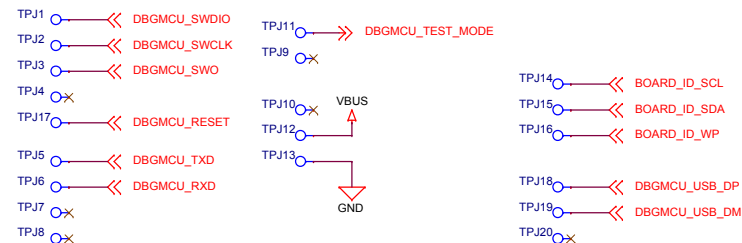


SPI Flash



Note: The SPI flash is only available to the debug mcu when the USB cable is plugged in!

Test Points



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