



EFM8UB2 Universal Bee STK

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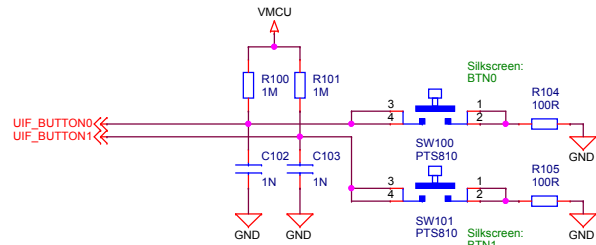
Revision History

Rev.	Description
A01	Update to new STK platform

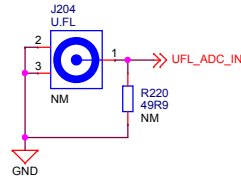


Designed		Approved		Title Page	
ASN		RGU			
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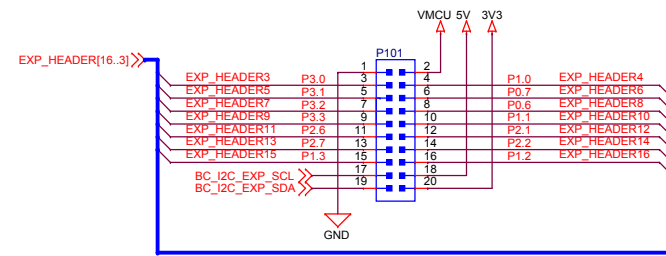
Push Buttons



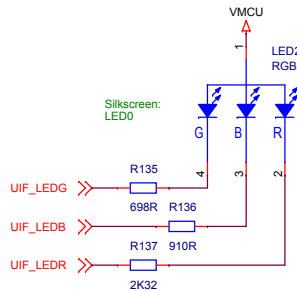
U.FL ADC Connection



EXP Header



RGB LED

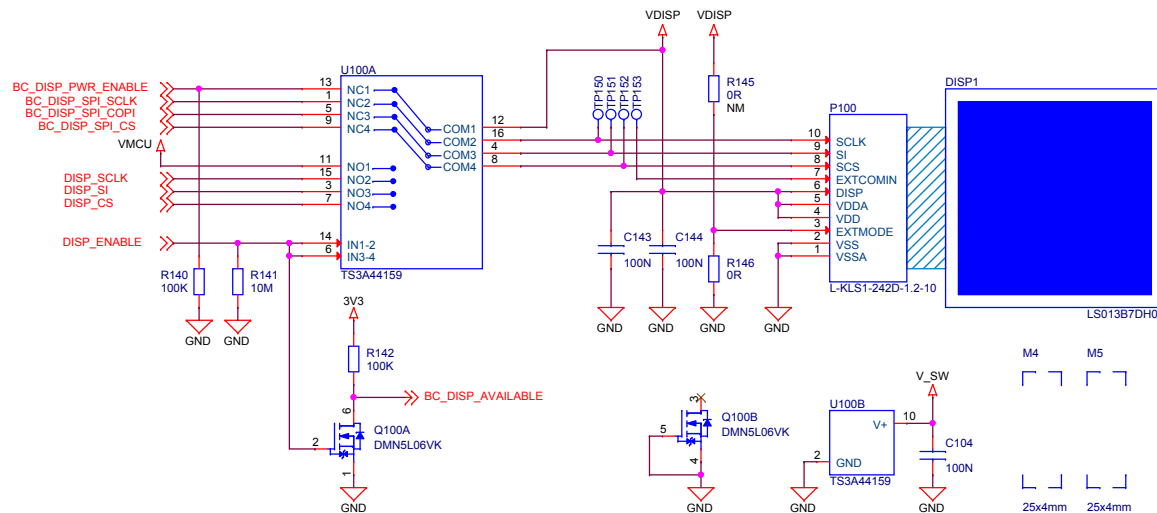


EXP-Header Functionality

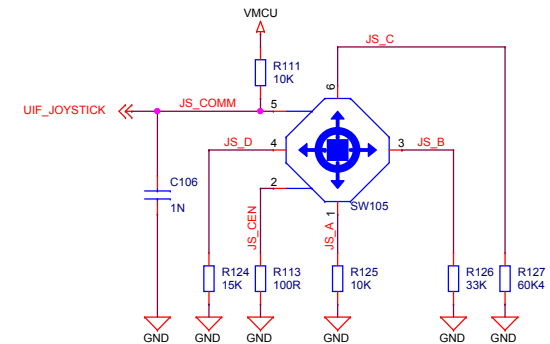
1	GND		
3	P3.0		CMP1.1/ADC0.6
5	P3.1		CMP1.1/ADC0.7
7	P3.2		ADC0.27
9	P3.3		ADC0.28
11	P2.6		CMP0.1/ADC0.5
13	P2.7		ADC0.26
15	P1.3	I2C0_SCL	ADC0.22
17	Reserved for EXP Board Identification		
19	Reserved for EXP Board Identification		

2	VMCU		
4	P1.0	SPI0_MOSI	ADC0.21
6	P0.7	SPI0_MISO	
8	P0.6	SPI0_SCK	
10	P1.1	SPI0_NSS	CMP1.4/ADC0.19
12	P2.1	UART1_TX	CMP0.0/ADC0.1
14	P2.2	UART1_RX	CMP1.0/ADC0.2
16	P1.2	I2C0_SDA	CMP1.4/ADC0.20
18	5V		
20	3V3		

Memory LCD-TFT Display & Multiplexer



Analog Joystick



The EFM8 always controls ownership of the display using the DISP_ENABLE signal.

DISP_ENABLE	Connected	VDISP	BC_DISP_AVAILABLE
1	MCU	VMCU	GND
0	BC	BC_DISP_PWR_ENABLE	3V3

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EFM8UB2 Universal Bee STK

Page Title
User Interface

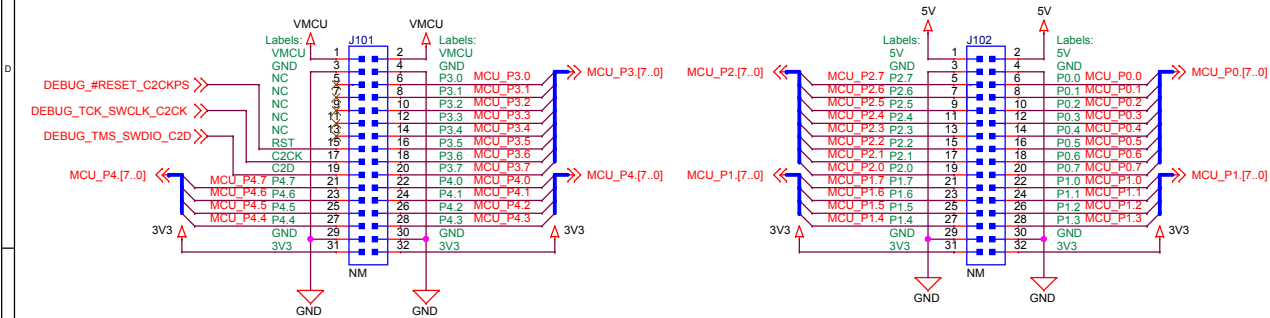
Board Number
BRD5001B

Revision
A01

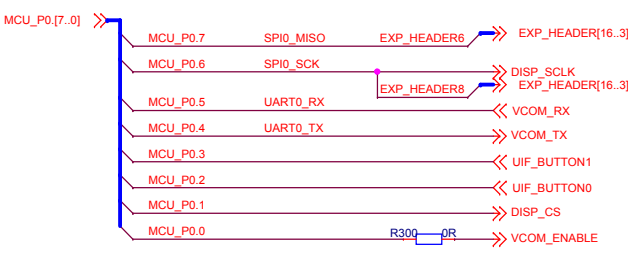
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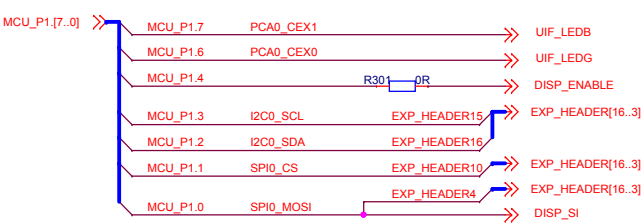
Breakout Connections



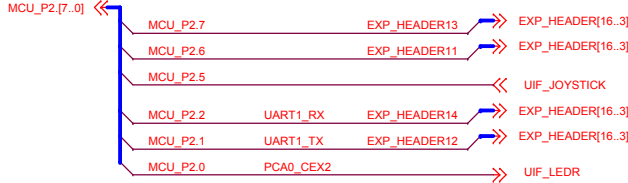
P0 Connections



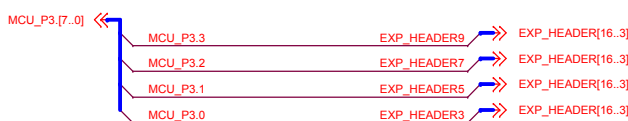
P1 Connections



P2 Connections




P3 Connections



DEBUG Connections





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EFM8UB2 Universal Bee STK

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Signal Assignments

Board Number
BRD5001B

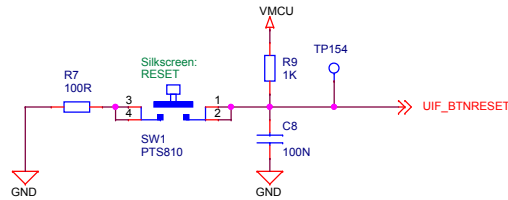
Revision
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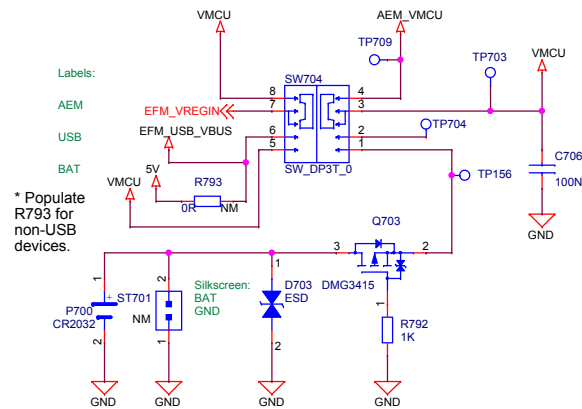
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Reset Push Button

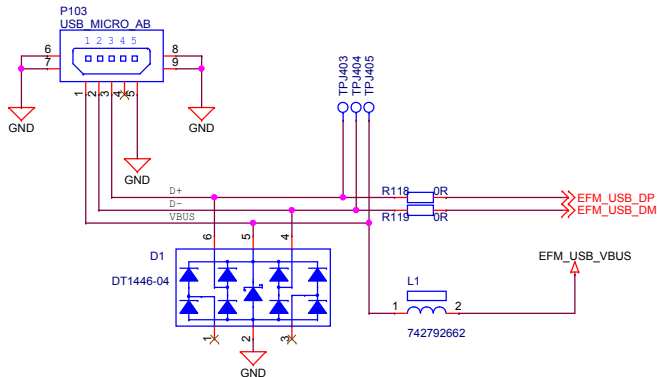


Power Select Switch: AEM/BAT

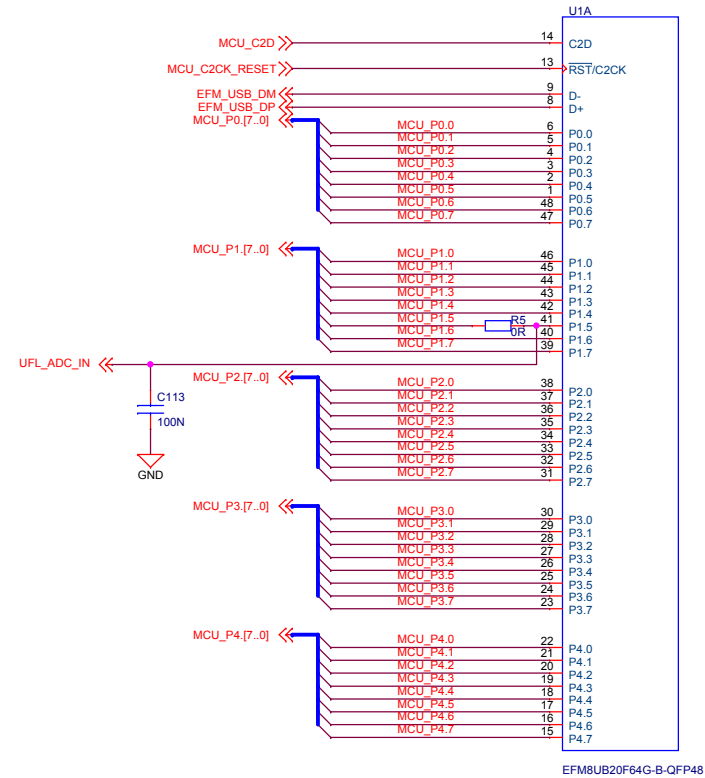
SWITCH POS	MODE DESCRIPTION
AEM	AEM Enabled, VMCU sourced from external 3.3V LDO powered by BC USB 5V supply
USB	AEM Disabled, VMCU sourced from internal 3.3V LDO powered by EFM8 USB 5V
BAT	AEM Disabled, VMCU sourced from external coin-cell battery or external power supply
Layout note	Rotate such that the battery is used when switch is in the left position



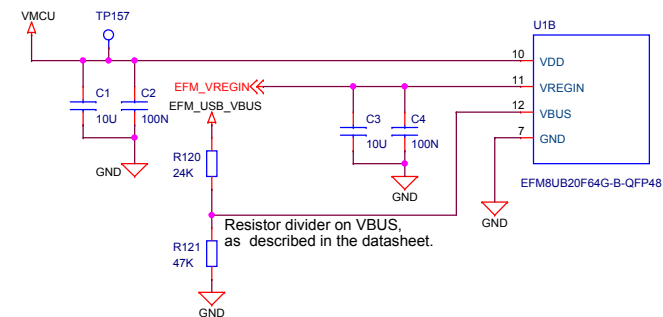
USB Connection and ESD protection




EFM8 I/O

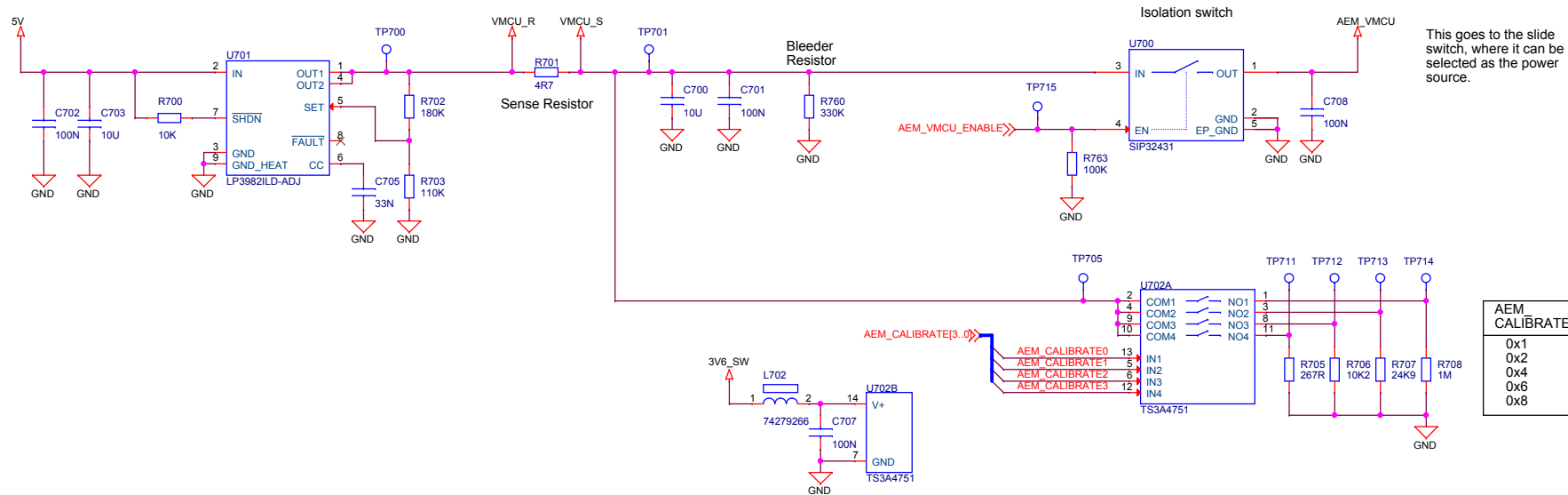


EFM8 Power and Decoupling



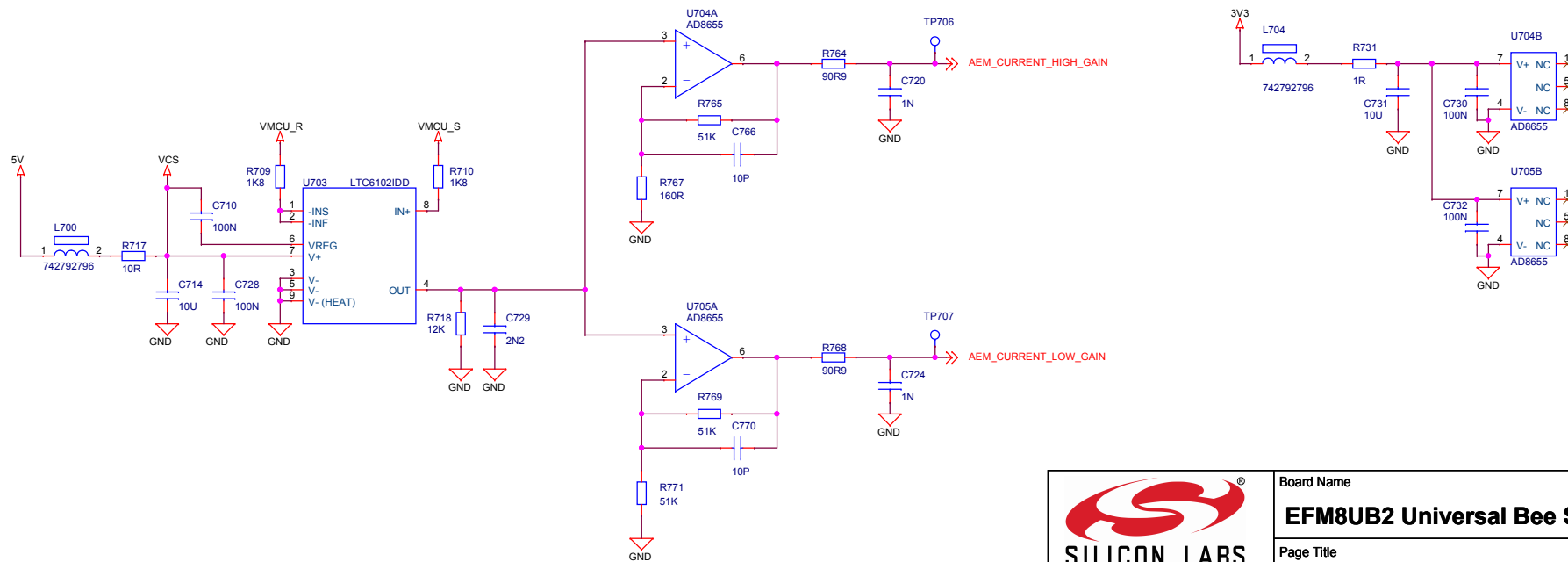
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Designed ASN	Approved RGU	Page Title EFM8 Power & I/O
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MCU Power Regulator



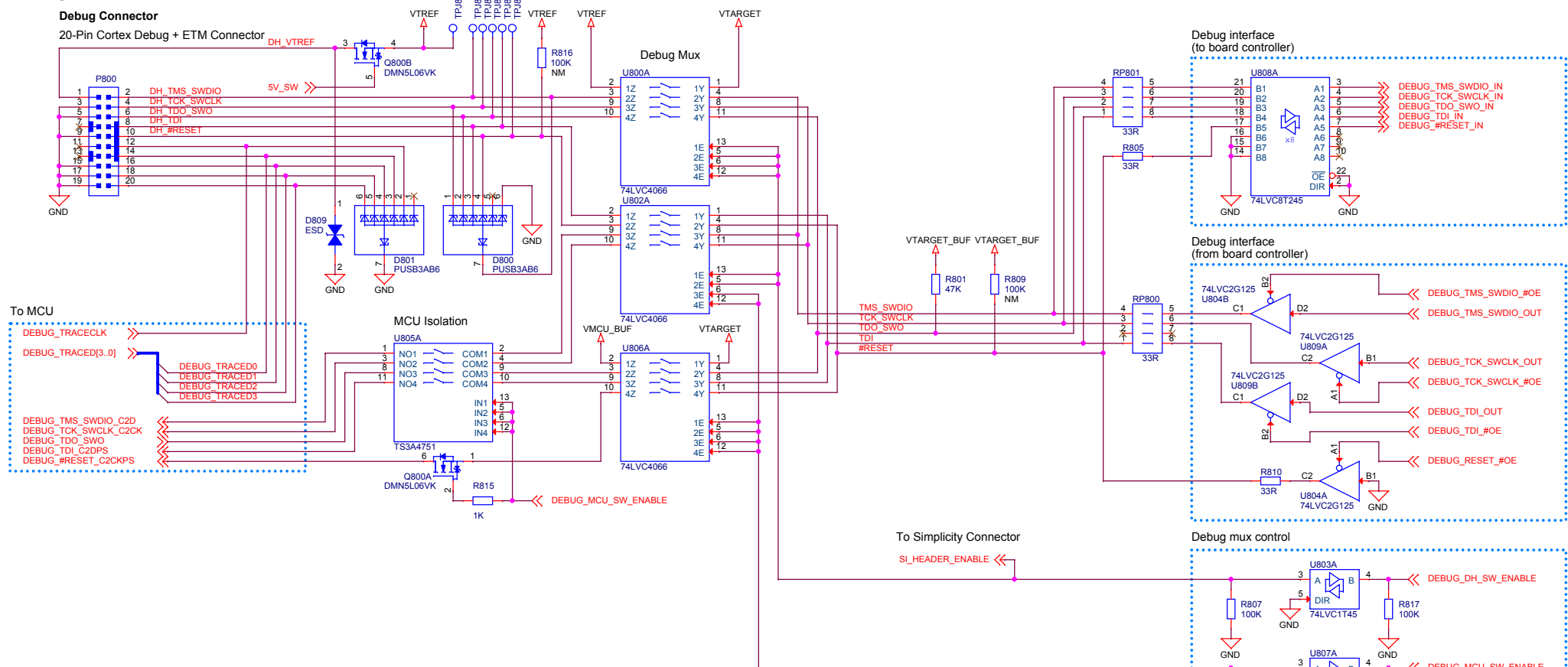
AEM CALIBRATE	Current
0x1	3.30 uA
0x2	132.5 uA
0x4	323.5 uA
0x6	456.1 uA
0x8	12.36 mA

Advanced Energy Monitoring

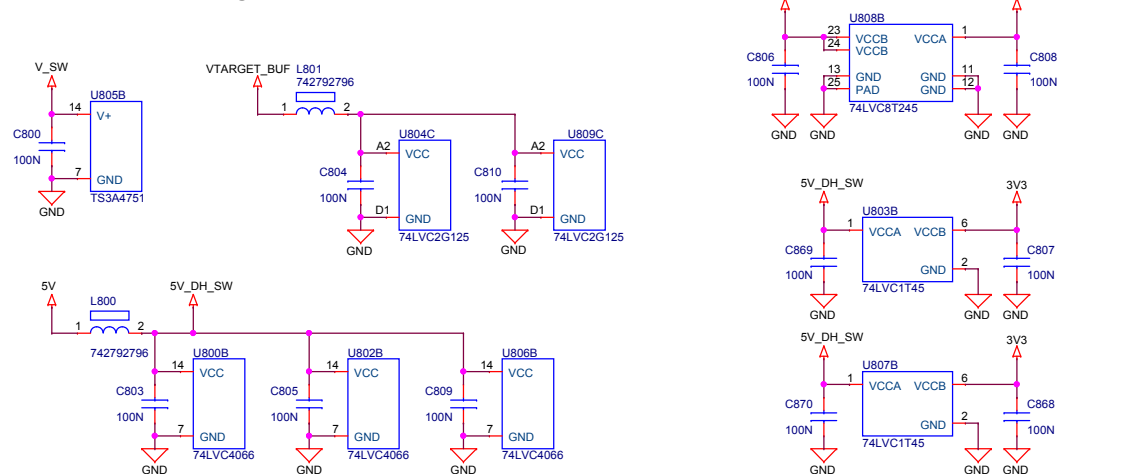


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Debug Mux



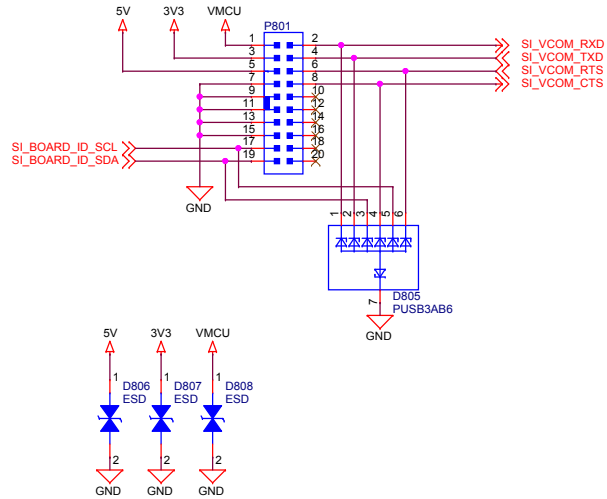
Power & Decoupling



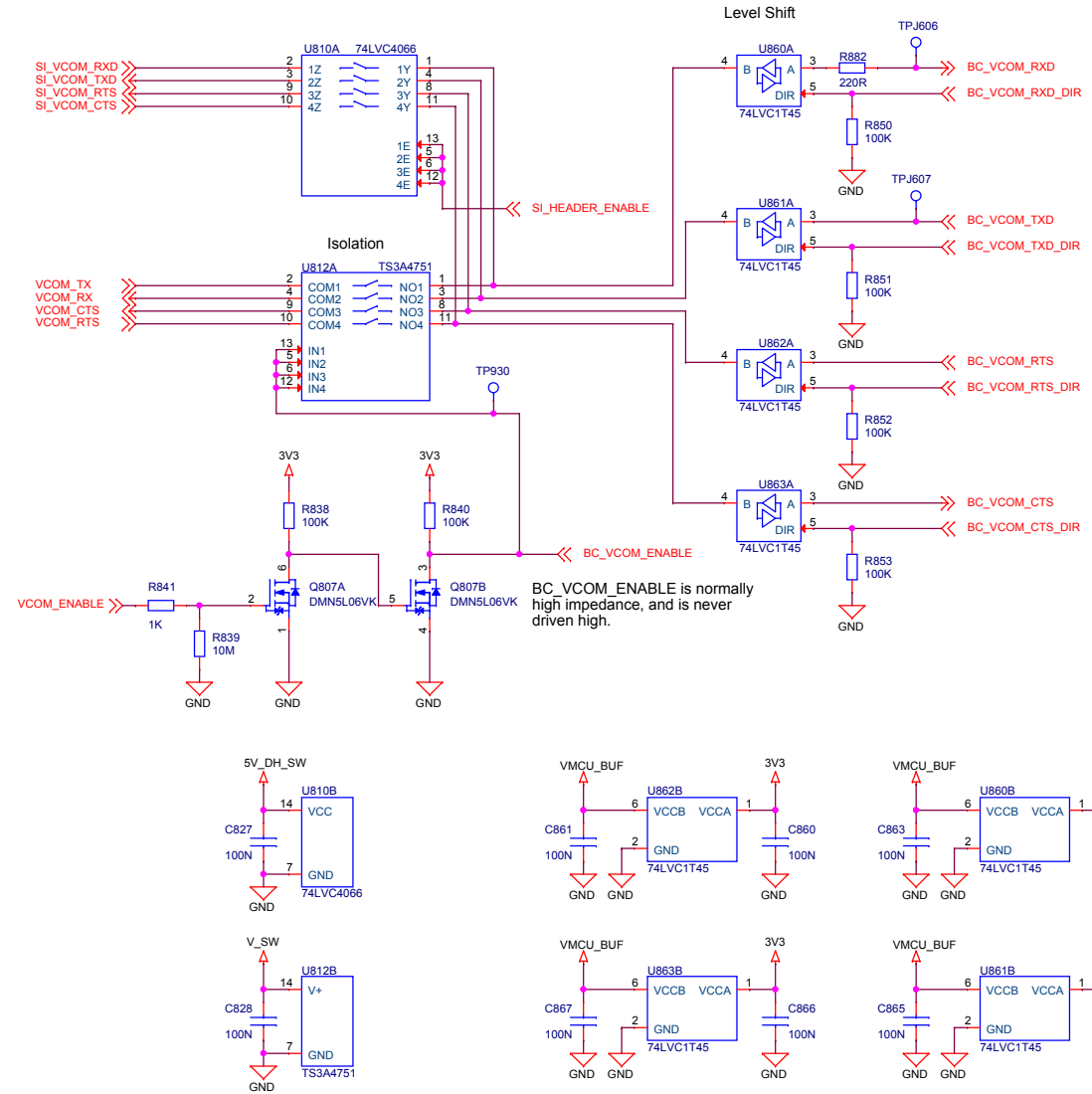
Debug Mode	DH_SW_ENABLE	MCU_SW_ENABLE
MCU	0	1
Debug Out	1	0
Debug In	1	1
Debug Off	0	0


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Simplicity Connector

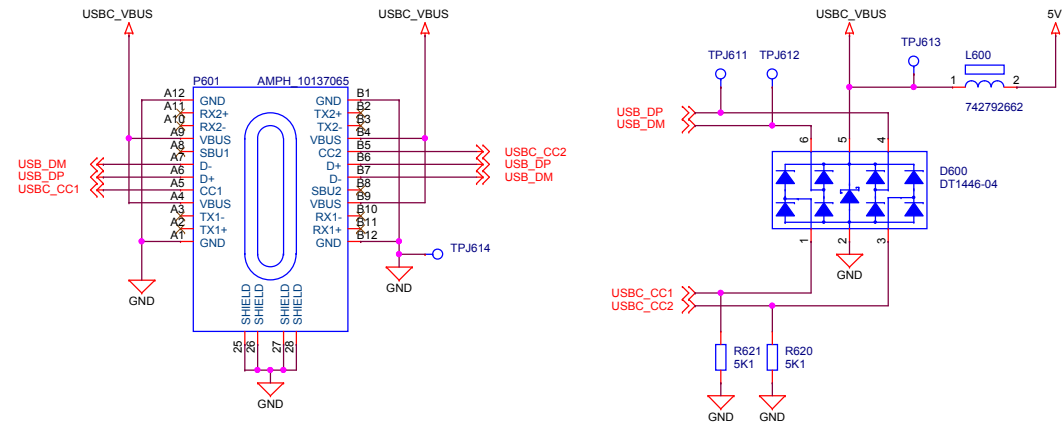


VCOM Interface

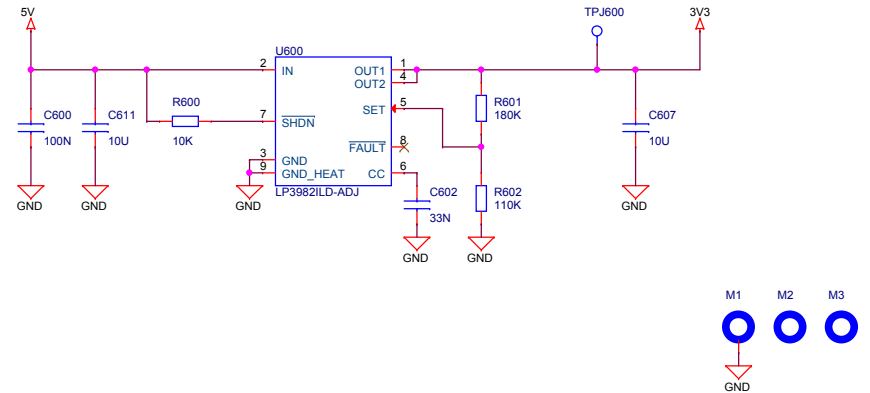


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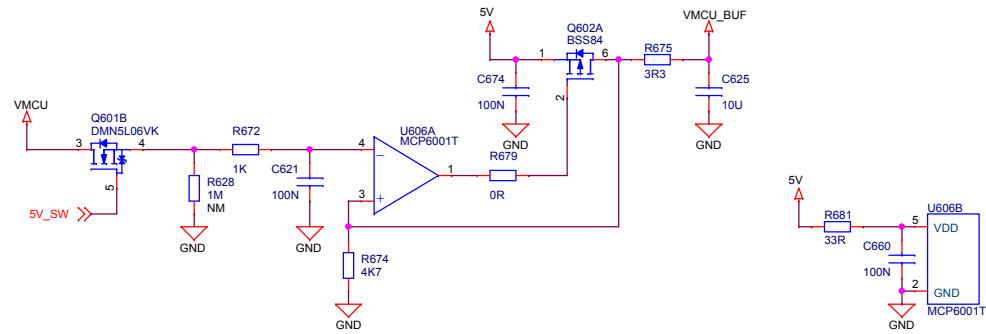
J-Link USB Port



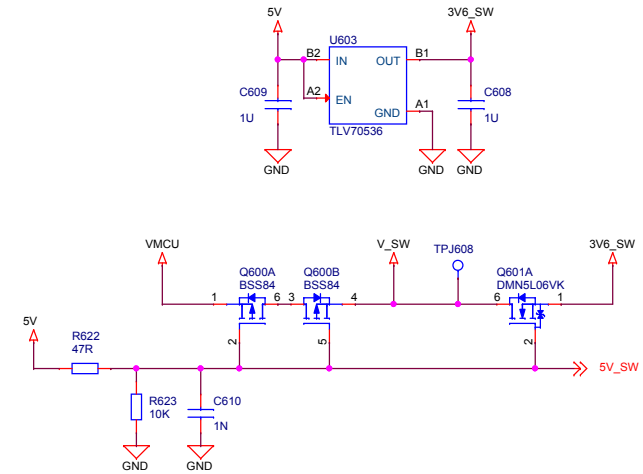
3V3 Regulator



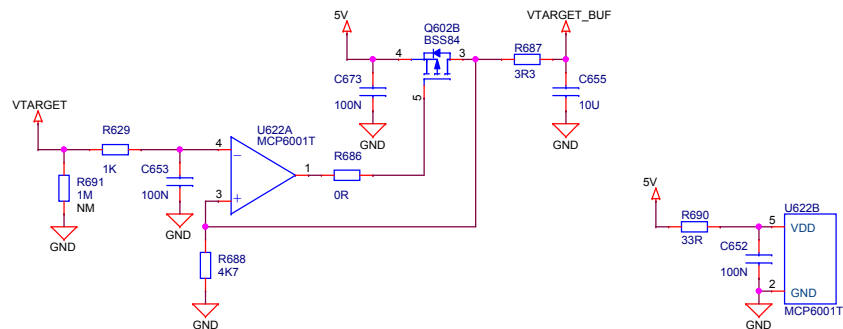
VMCU Voltage Mirror



Power Supply for Analog Switches




VTarget Voltage Mirror

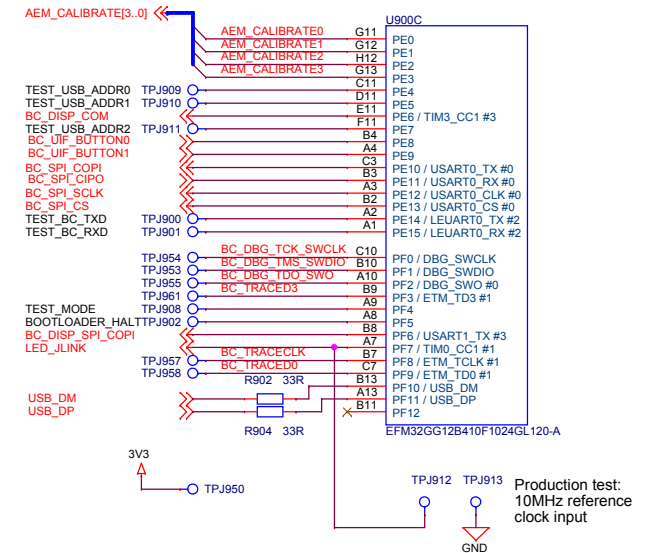
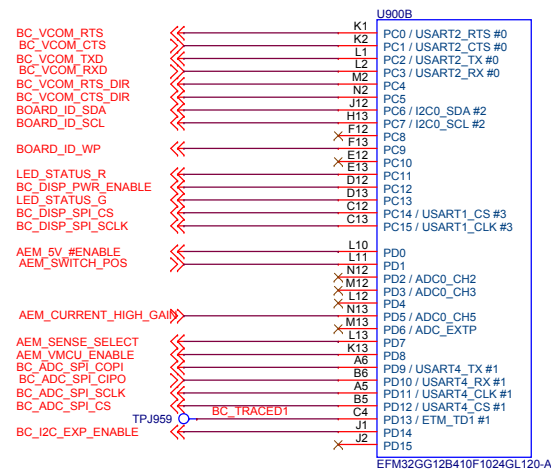
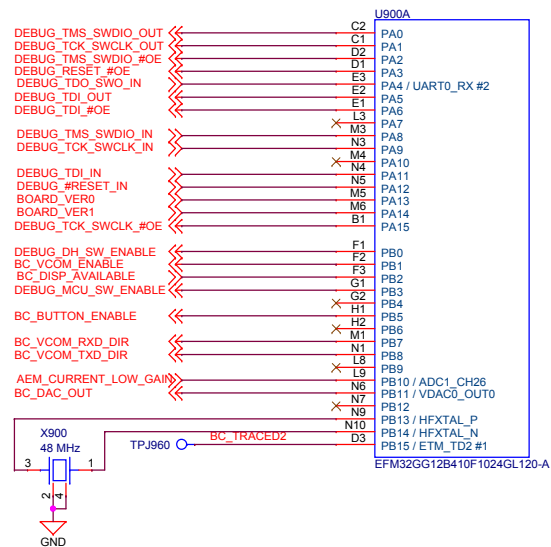


J-Link USB Cable	Q600 State	Q601A State	V_SW	VMCU_SENSE
Connected	OFF	ON	3.6V VMCU	VMCU Isolated
Disconnected	ON	OFF	VMCU	VMCU Isolated

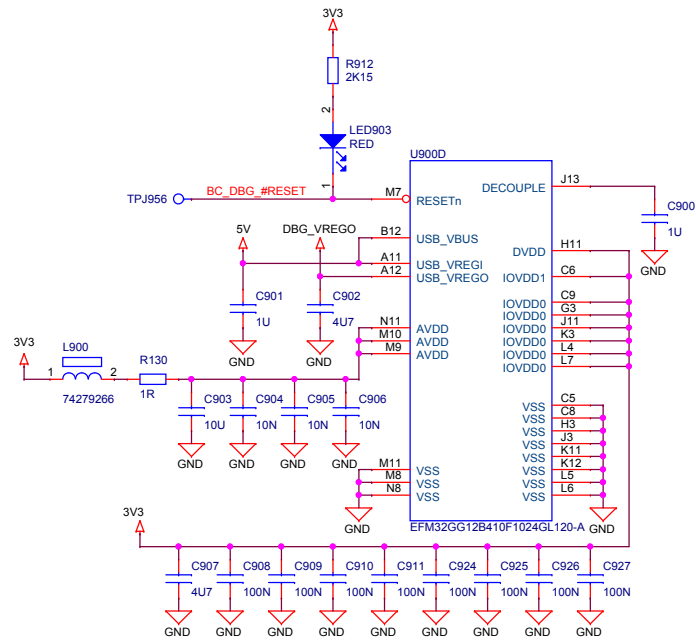
Isolation switches are powered by 3V6_SW when the USB cable is connected, otherwise by VMCU.

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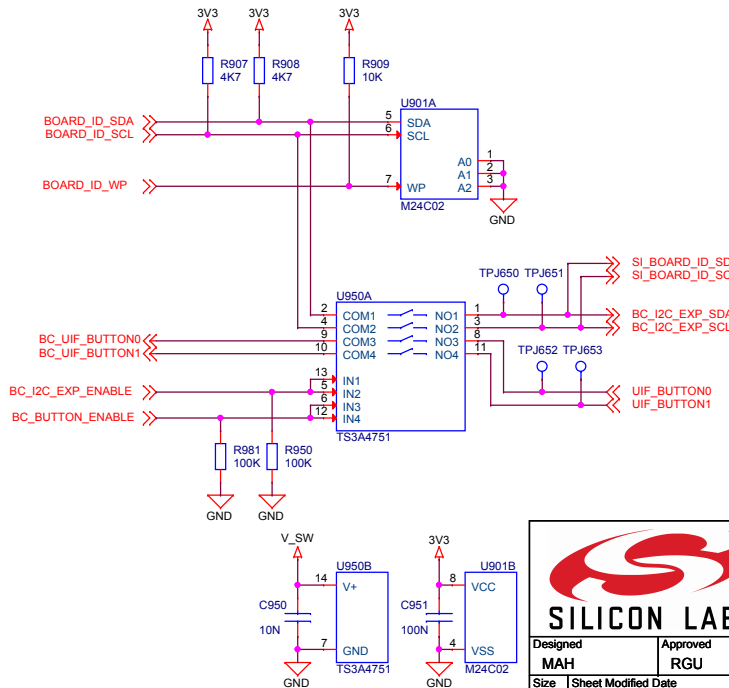
Board Controller



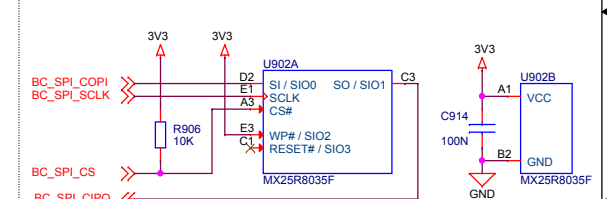
Power & Decoupling



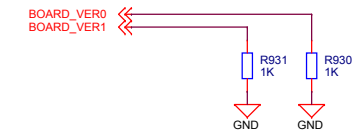
Board ID & Button Isolation




BC Serial Flash

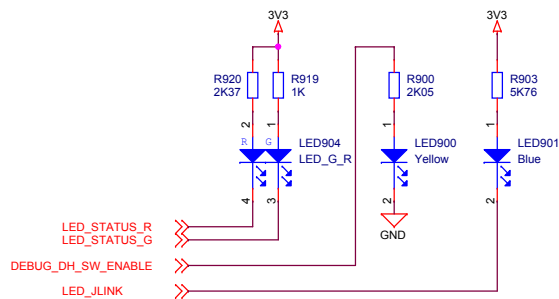


Board Version

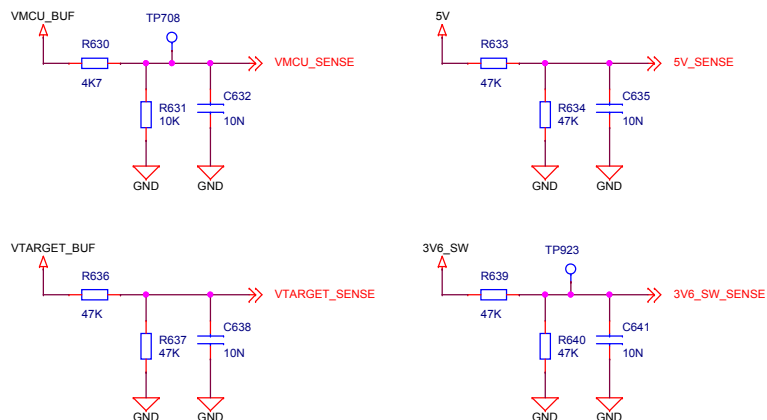


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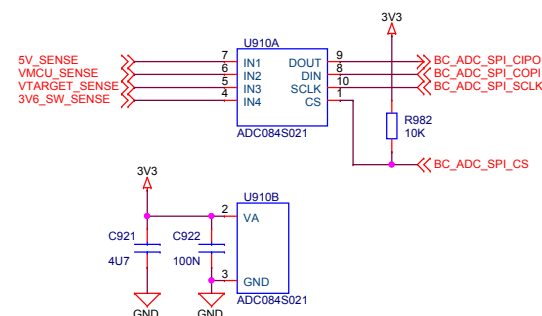
Indicator LEDs




BC Voltage Sense



BC Voltage Sense ADC



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