EFM8BB52 Pro Kit

Board Function	Page

Revision History

Rev.	Description
A00	Move to new Pro Kit platform.

PCB1

PCB5206B

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Designed: MAH	Approved: RGU
Size: A3	Sheet Modified Date: Monday, June 28, 2021

Board Name: **EFM8BB52 Pro Kit**

Page Title: **Title Page**

Board Number: **BRD5206B**

Revision: **A01**

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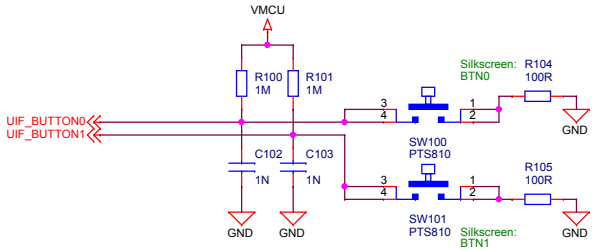
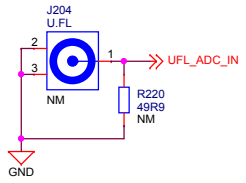
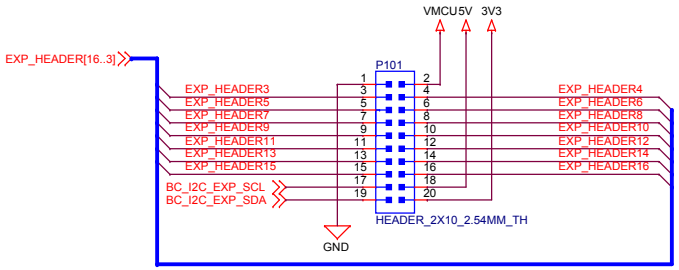
Push Buttons



U.FL ADC Connection



EXP Header

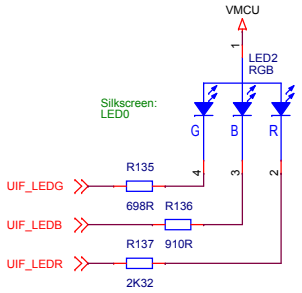


EXP Header Functionality

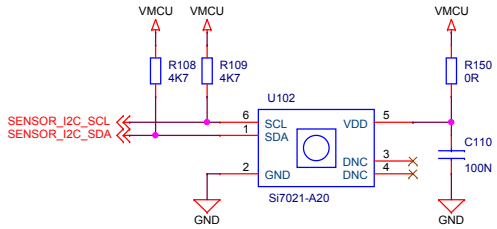
			Top Row
2	VMCU		
4	P1.0	SPI_COPI	CMP0.6/ADC0.4
6	P0.7	SPI_CIPO	CMP0.5
8	P0.6	SPI_SCK	CMP0.4
10	P1.1	SPI_CS	CMP0.7
12	P2.0	UART_TX	CMP1.1/ADC0.10
14	P2.1	UART_RX	CMP1.4
16	P1.2	I2C_SDA	CMP0.2/ADC0.5
18	5V		
20	3V3		

			Bottom Row
1	GND		
3	P2.3		CMP1.6/ADC0.12
5	P3.0		DAC0/ADC0.15
7	P3.1		CMP1.10
9	P3.2		
11	P3.3		
13	P2.4		CMP1.7/ADC0.13
15	P1.3	I2C_SCL	CMP1.0/ADC0.6
17	Reserved for EXP Board Identification		
19	Reserved for EXP Board Identification		

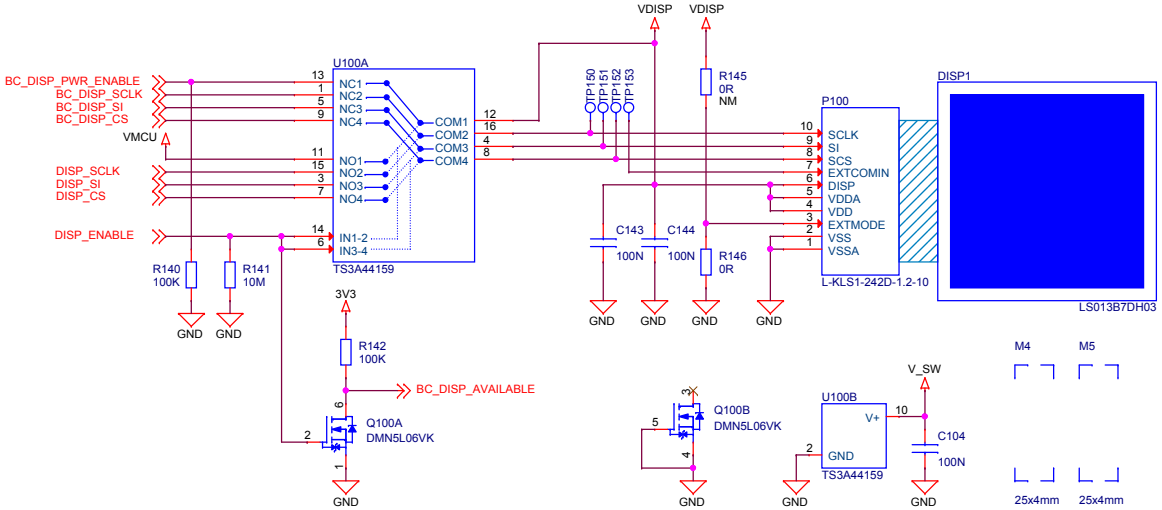
RGB LED



Relative Humidity & Temperature Sensor



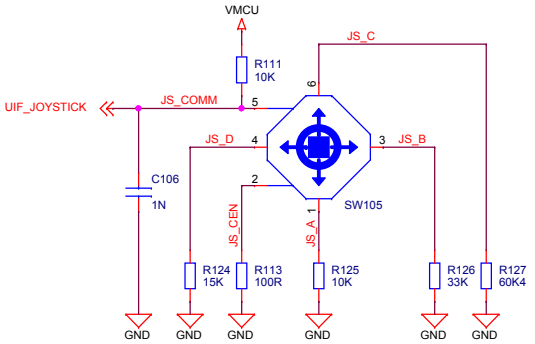
Memory LCD-TFT Display & Multiplexer



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

Analog Joystick



SILICON LABS

Designed	MAH
Approved	RGU
Size	A3
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Board Name: **EFM8BB52 Pro Kit**

Page Title: **User Interface**

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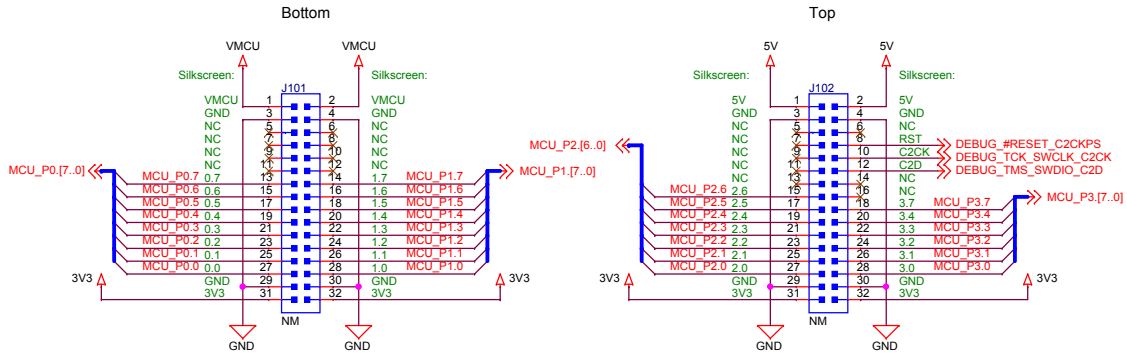
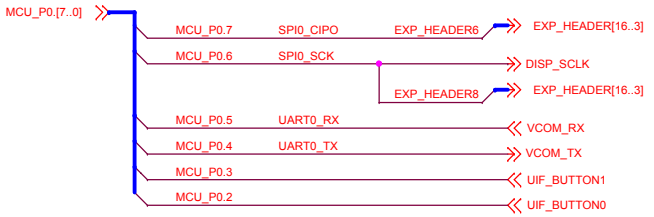
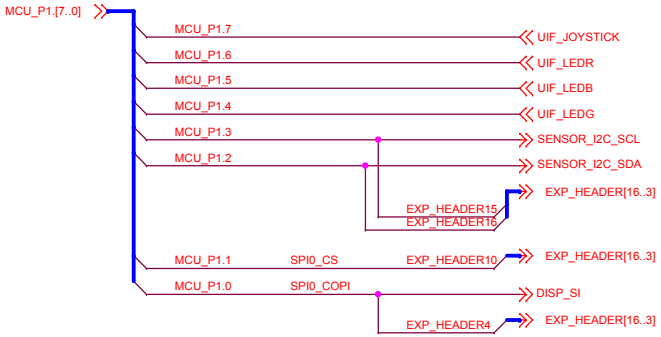
Breakout Connections



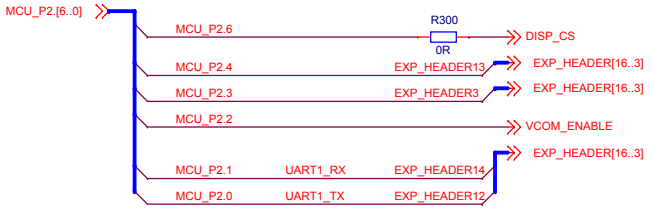
P0 Connections



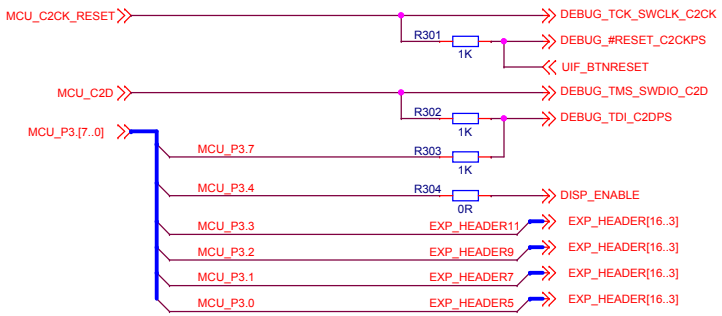
P1 Connections



P2 Connections



P3 & Debug Connections



Board Name	**EFM8BB52 Pro Kit**
Page Title	**Signal Assignments**
Designed: MAH / Approved: RGU	
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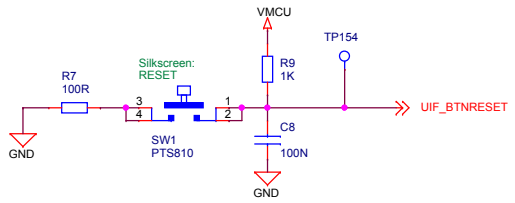
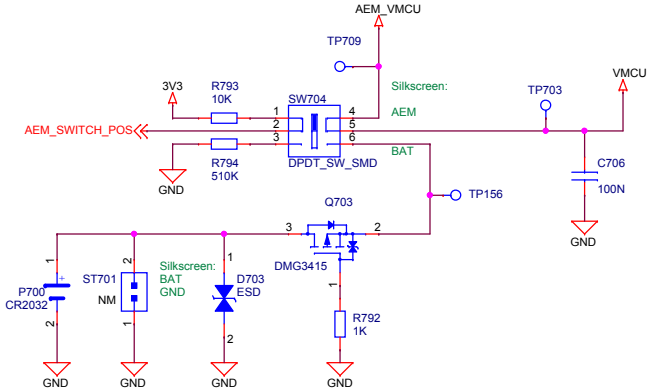
Reset Push Button

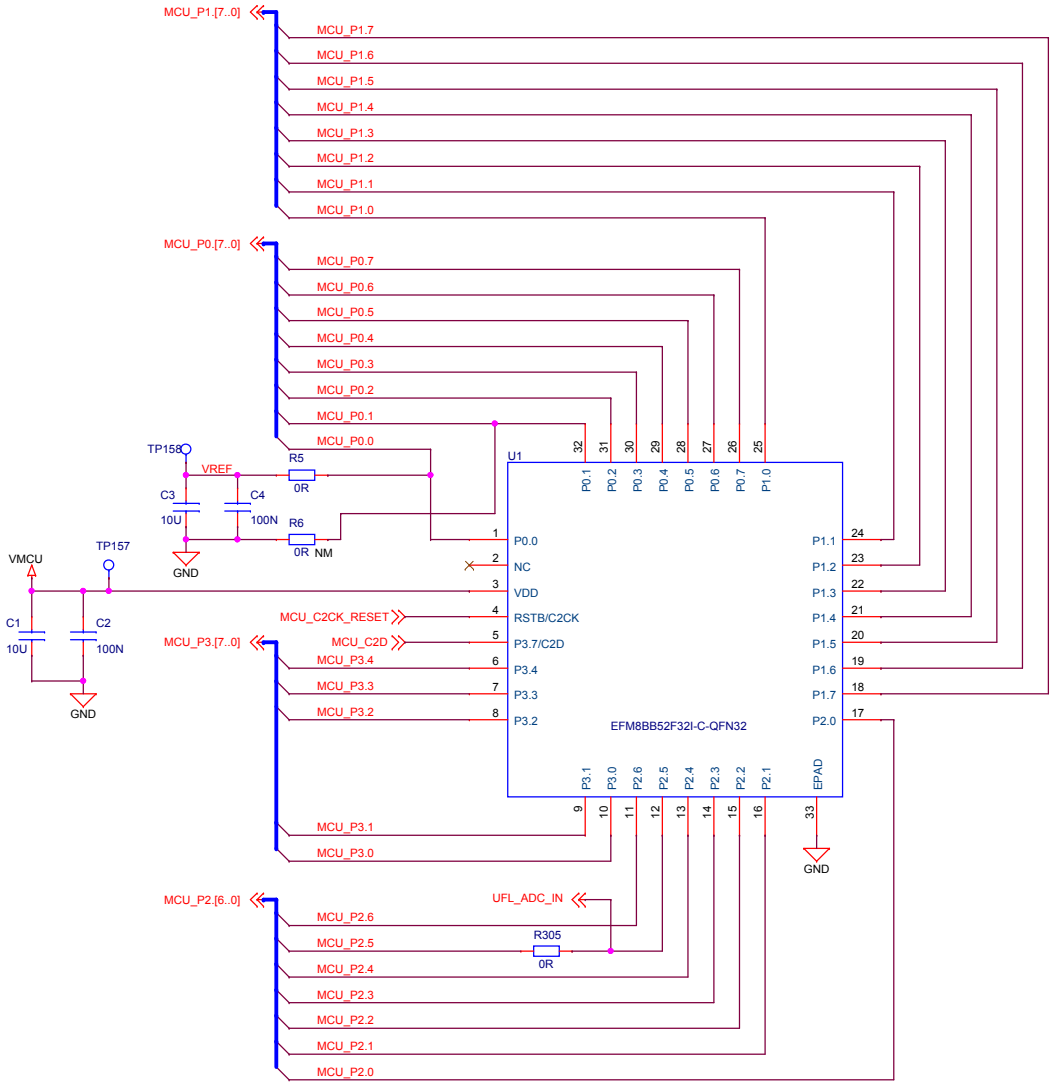


Power Select Switch: AEM/BAT

SWITCH POS	MODE DESCRIPTION
AEM	AEM Enabled, VMCU sourced from external 3.3V LDO powered by BC USB 5V supply
BAT	AEM Disabled, VMCU sourced from coin-cell battery or external power supply



EFM8 I/O



SILICON LABS		Board Name: **EFM8BB52 Pro Kit**	
		Page Title: **EFM8 Power & I/O**	
Designed: MAH	Approved: RGU	Board Number: **BRD5206B**	Revision: **A01**
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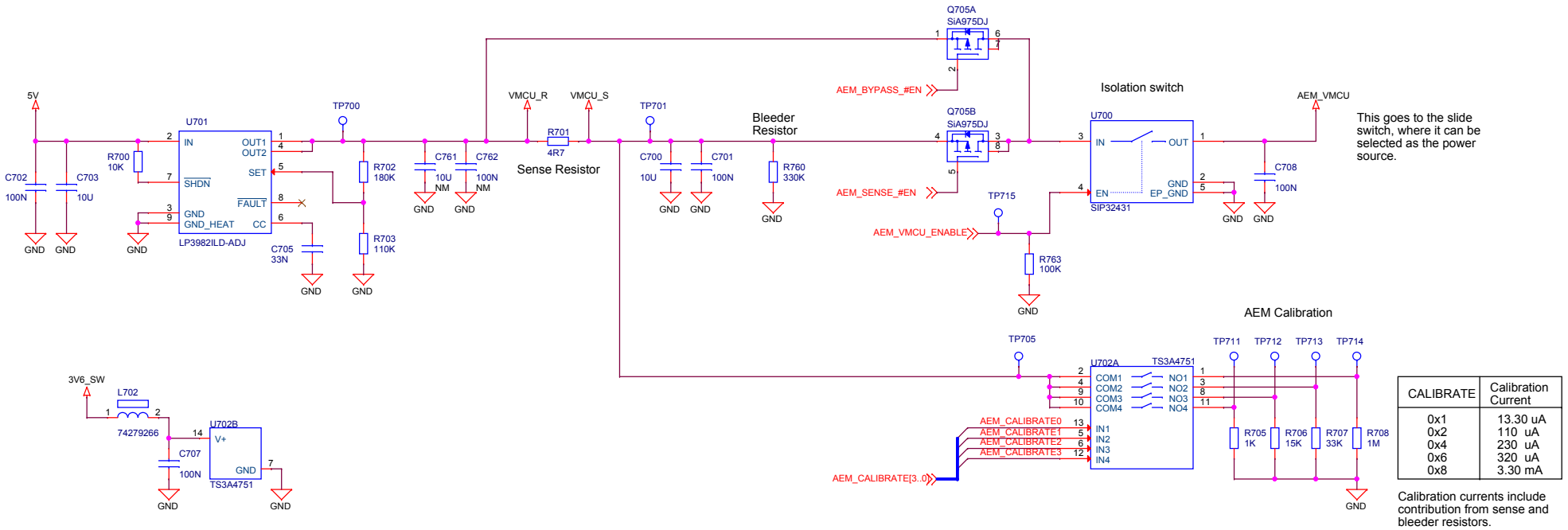
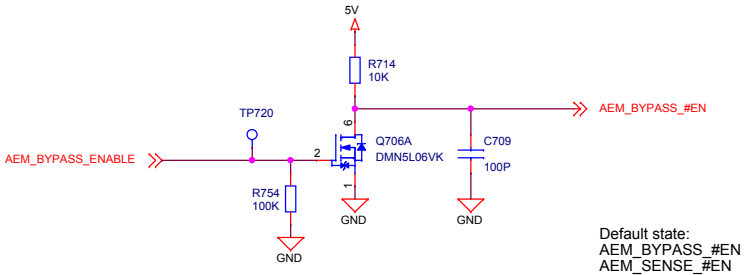
MCU Power Regulator



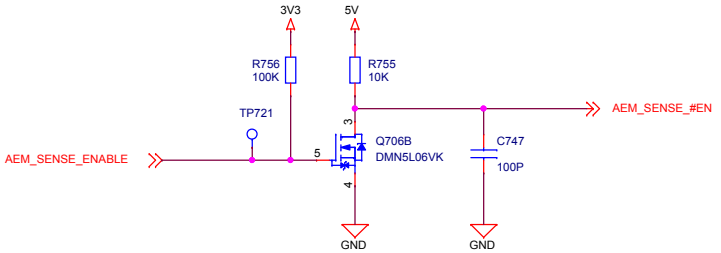
CALIBRATE	Calibration Current
0x1	13.30 uA
0x2	110 uA
0x4	230 uA
0x6	320 uA
0x8	3.30 mA

Calibration currents include contribution from sense and bleeder resistors.

AEM Bypass Control



Default state:
AEM_BYPASS_#EN = 1 (AEM bypass not enabled)
AEM_SENSE_#EN = 0 (AEM sense enabled)



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Designed	MAH
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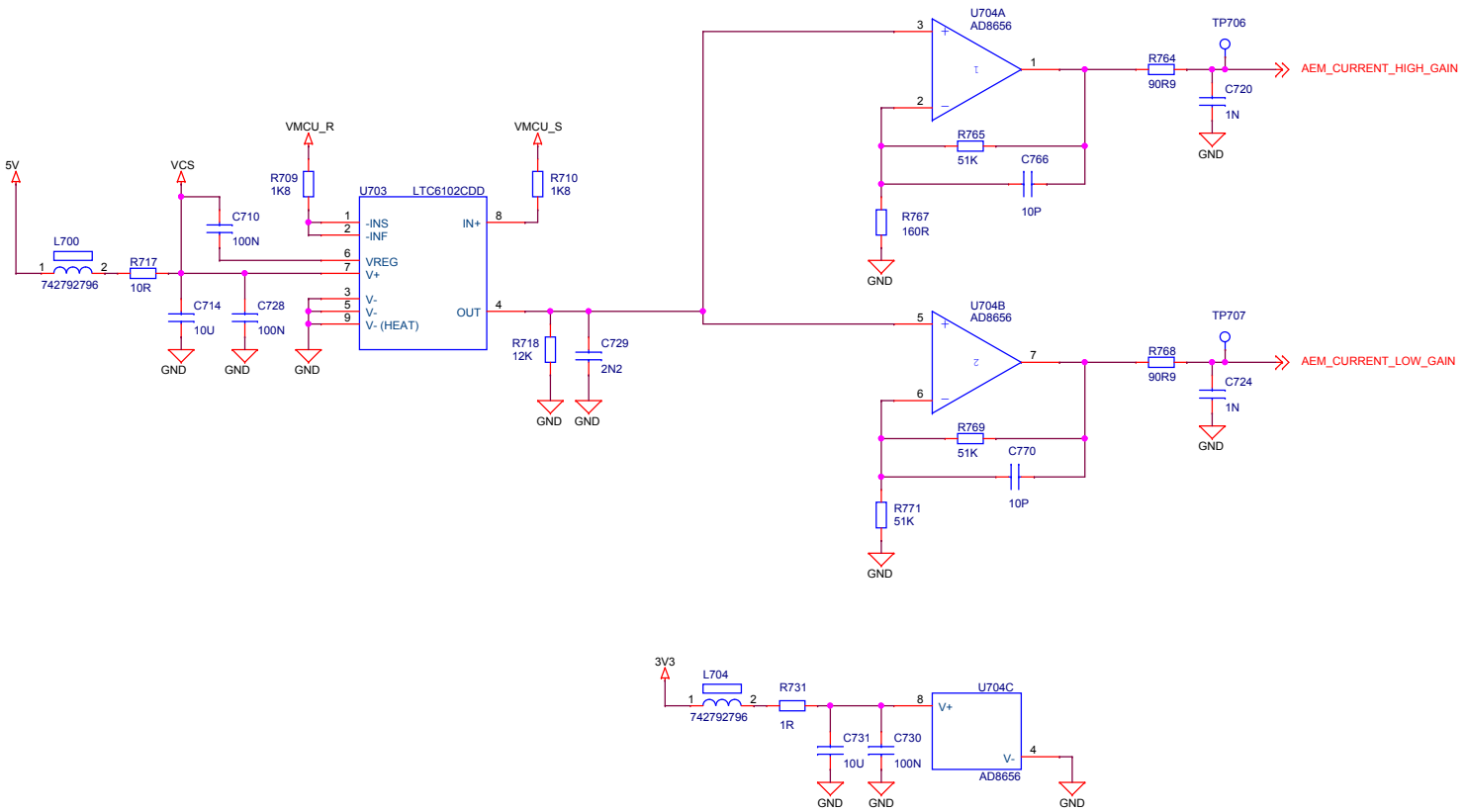
MCU Current Sense



Board Name	**EFM8BB52 Pro Kit**
Page Title	**AEM**
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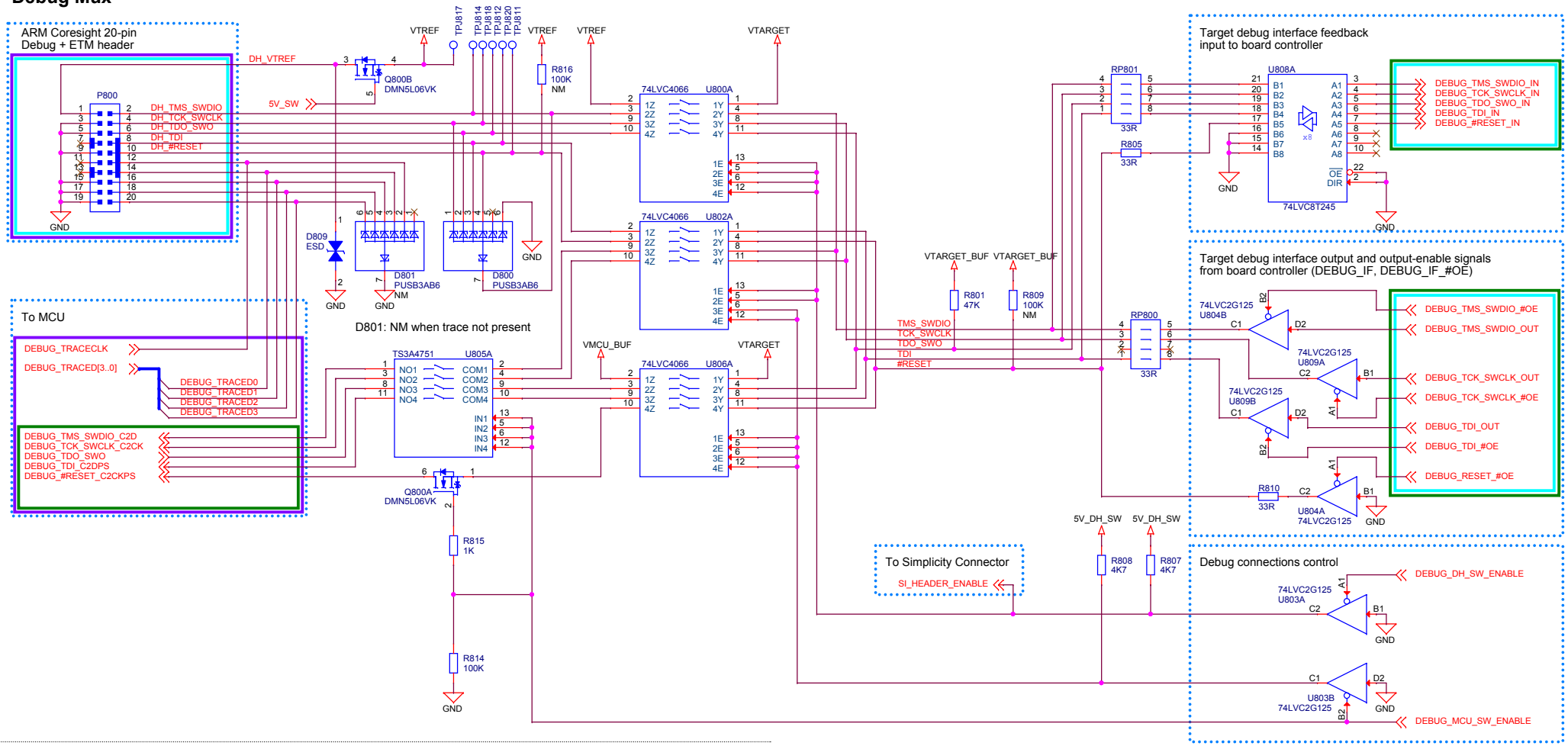
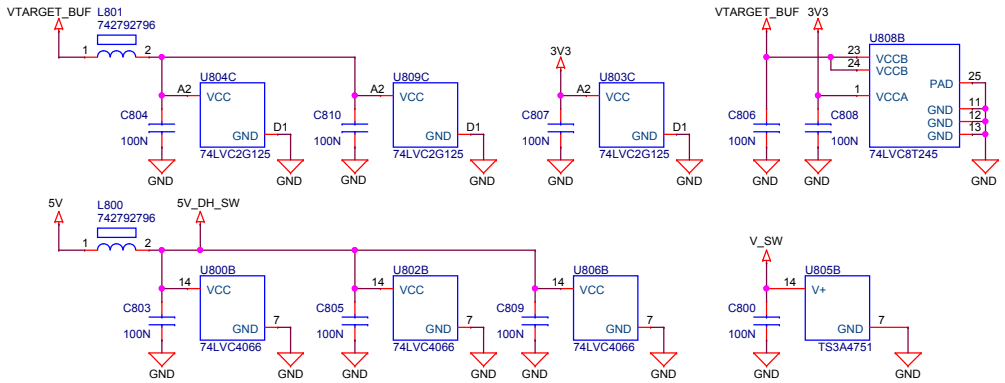
Debug Mux



Power & Decoupling



Mode	DEBUG_DH_SW_ENABLE	DEBUG_MCU_SW_ENABLE	DEBUG_IF_#OE	VTREF	VTARGET
Debug Out	1	0	0/1	External voltage	External voltage
MCU Debug	0	1	0/1	Disconnected	VMCU
Debug In	1	1	1	VMCU	VMCU
Debug Off	0	0	1	-	-

Color coded frames indicates which groups of
signal nodes that are active in a given debug mode

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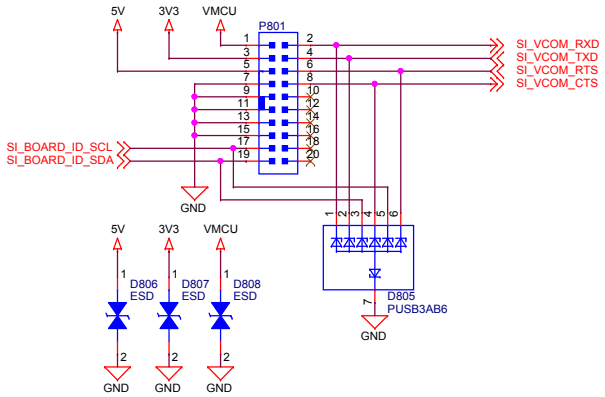
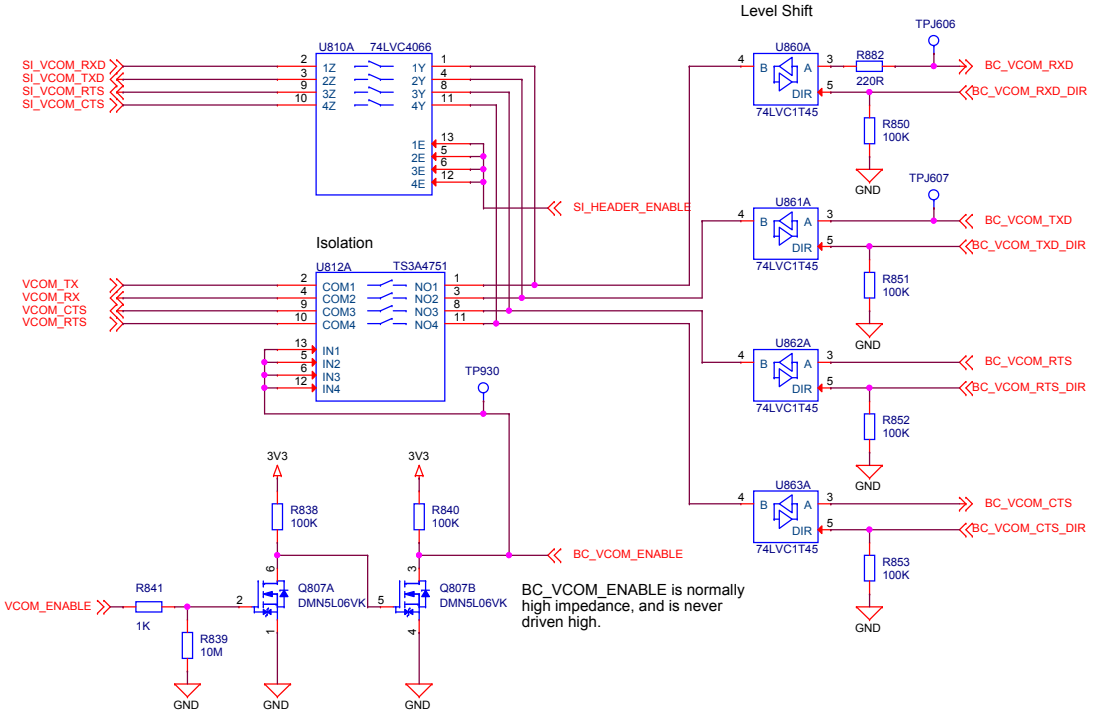
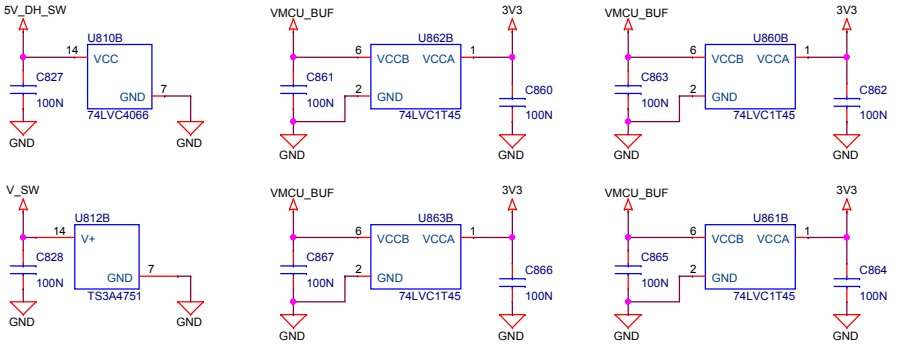
Simplicity Connector



VCOM Interface





Board Name	**EFM8BB52 Pro Kit**
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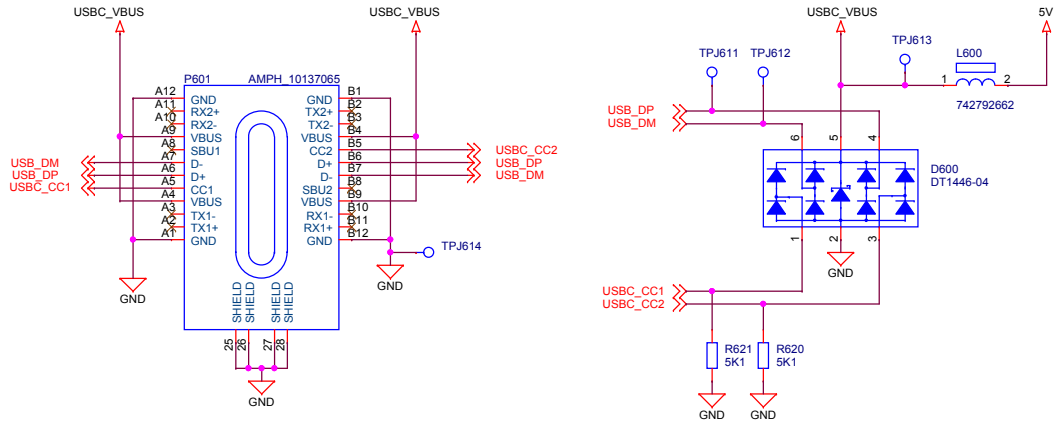
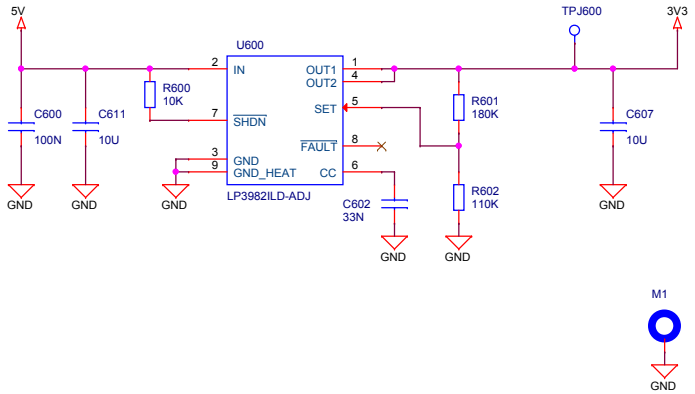
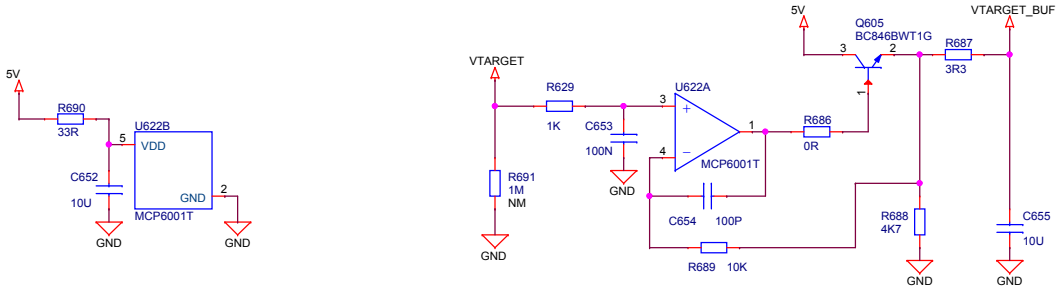
J-Link USB Port



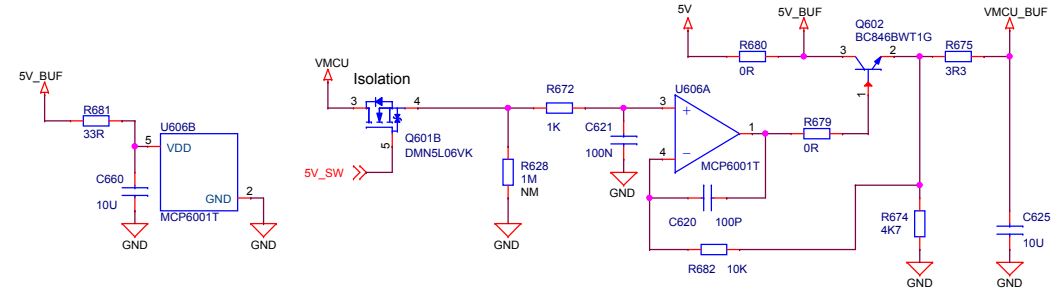
3V3 Regulator



VTarget Voltage Mirror



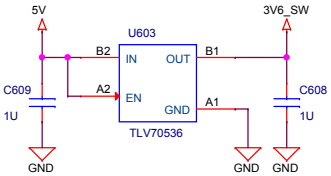
VMCU Voltage Mirror

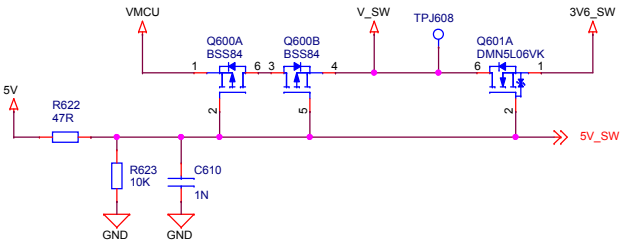


Power Supply for Analog Switches

Analog switches used for isolation are powered by 3V6_SW when the USB cable is connected, otherwise by VMCU.

J-Link USB Cable	PMOS State	NMOS State	V_SW	VMCU_SENSE
Connected	Off	On	3.6V	VMCU
Disconnected	On	Off	VMCU	Isolated





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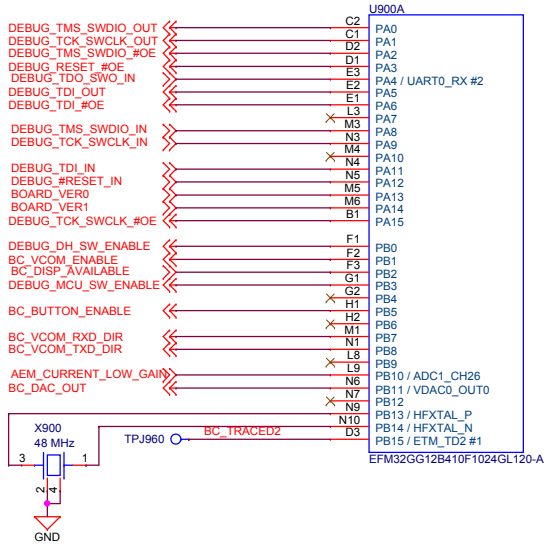
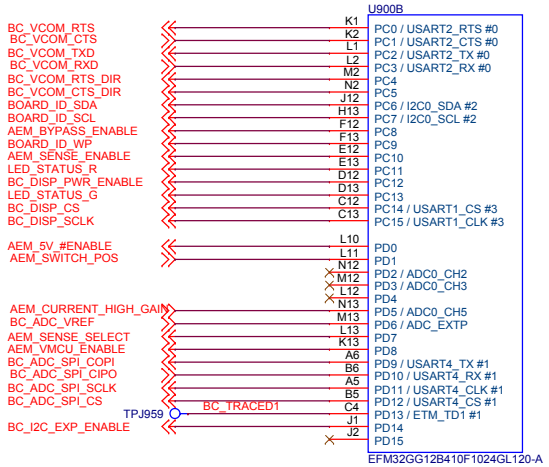
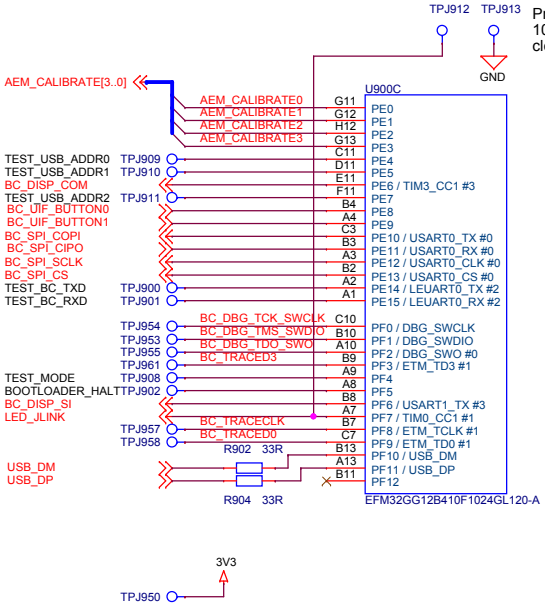
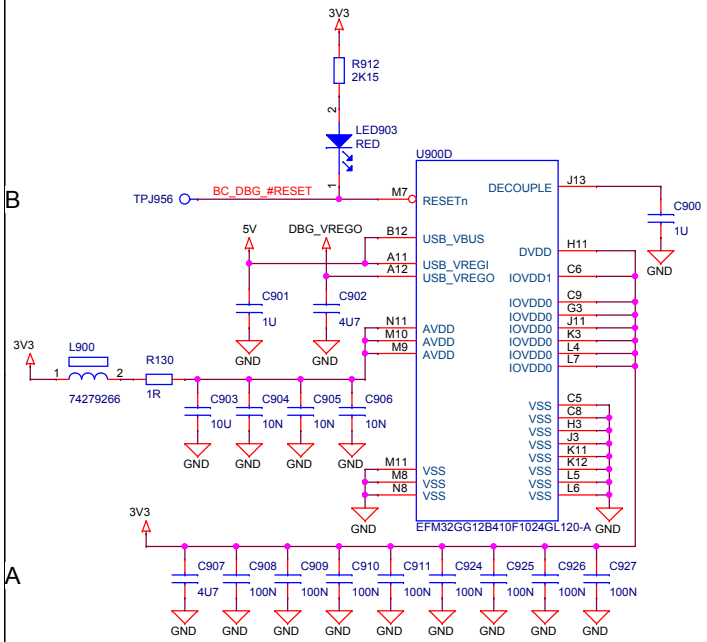
Board Controller



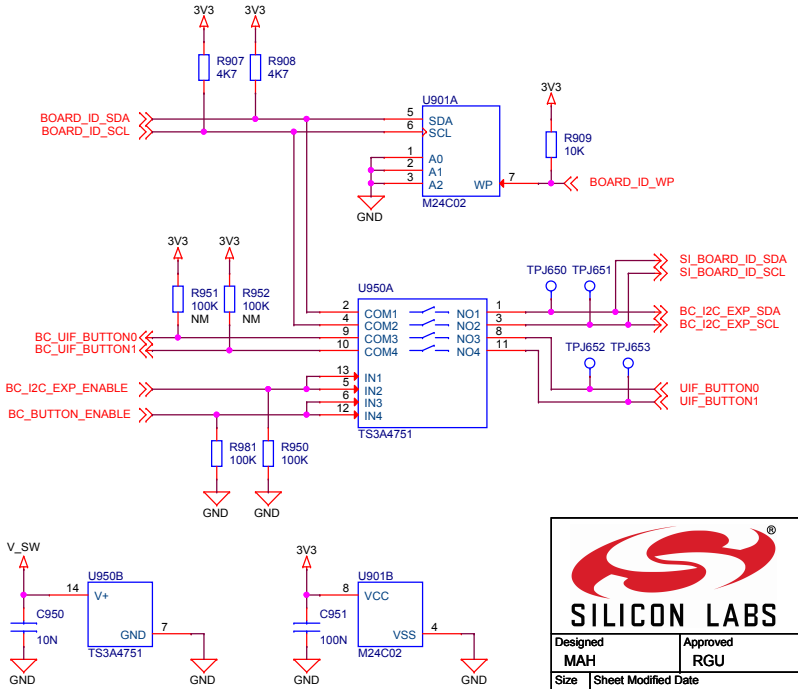




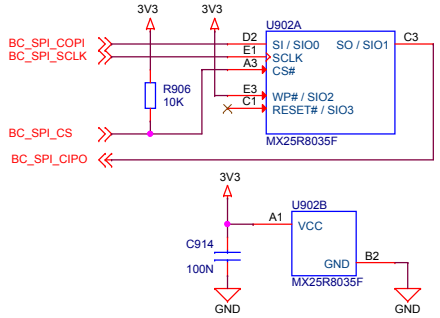
Power & Decoupling



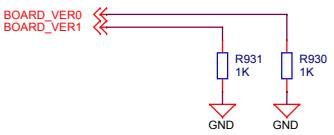
Board ID & Button Isolation



BC Serial Flash



Board Version



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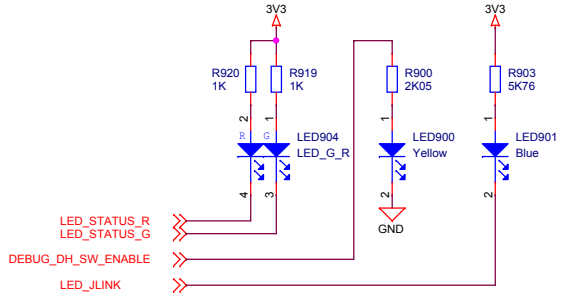
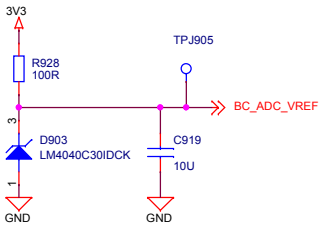
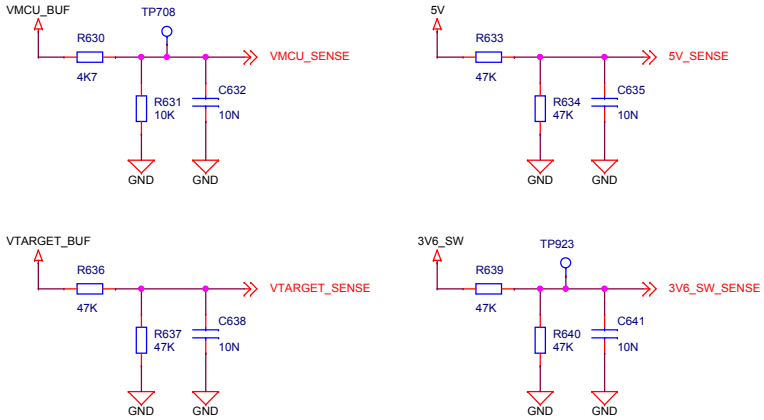
Indicator LEDs



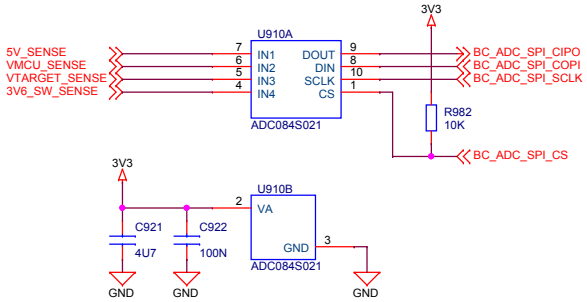
BC ADC Reference



BC Voltage Sense



BC Voltage Sense ADC



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Designed: MAH	Approved: RGU
Size: A3	Sheet Modified Date: Monday, June 28, 2021

Board Name: **EFM8BB52 Pro Kit**

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