



EFM32 Zero Gecko STK

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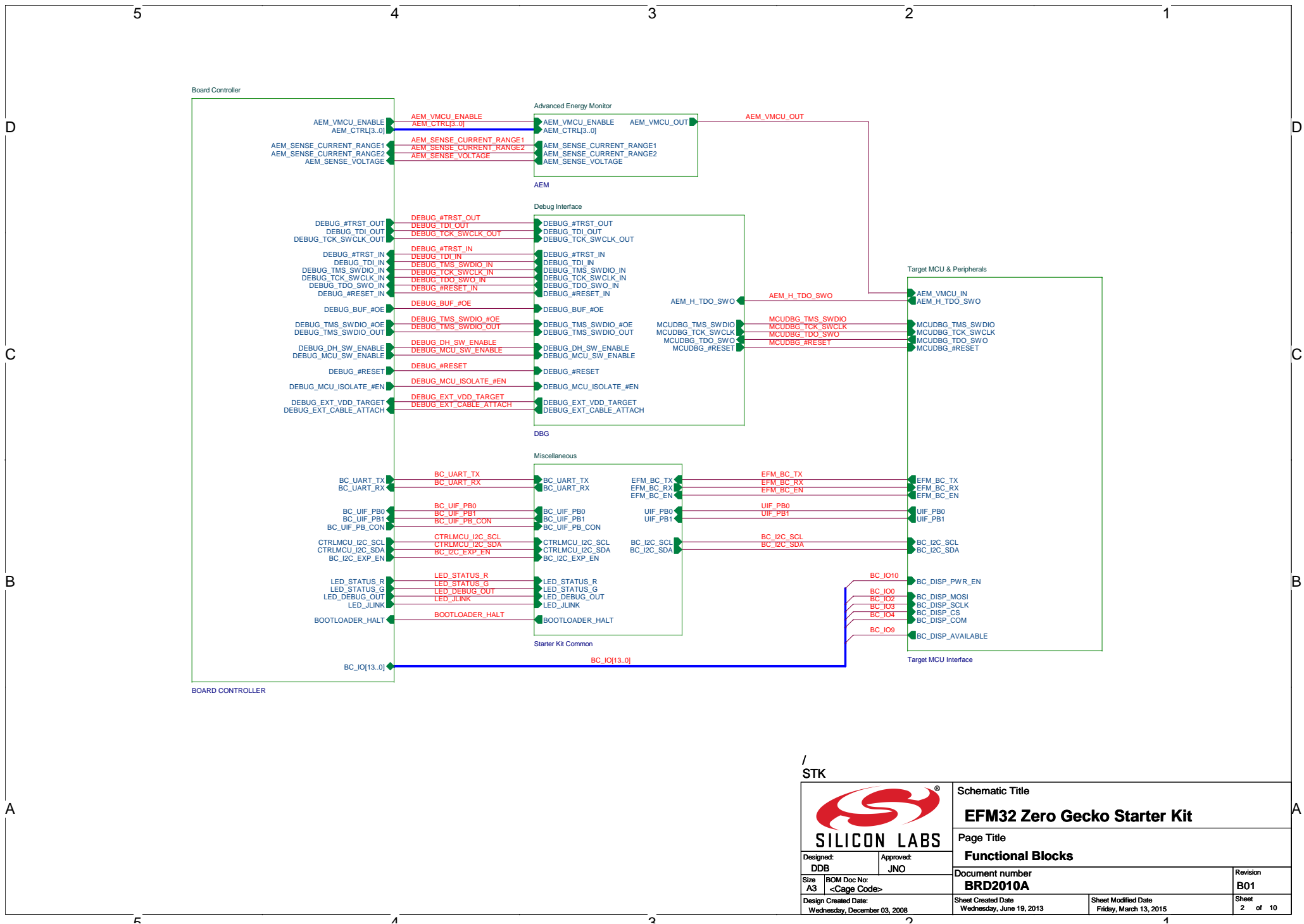
Revision History

Rev.	Description
PB10	Added 3V6_SENSE. Added TPJ608. Changed TP703 to TPJ703.
PB11	Swapped BC_DISP_COM from BC_IO1 to BC_IO4.
PB12	Swapped EXP Header pins 15 and 17. Moved TPJ606 and TPJ607.
PB13	Extended CTRLMCU_I2C bus to EXP Header. Added EFM_DISP_PWR_EN signal.
B00	Initial release for series production.
B01	Changed U603 from LD6806 to TLV70536.




STK

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		Title Page	
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STK

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		Functional Blocks	
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2

3

4

A

B

C

D

5

4

3

2

1

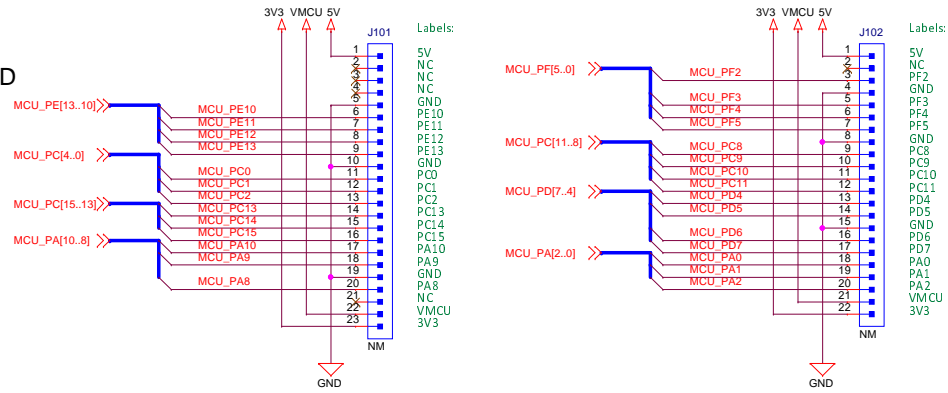
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B

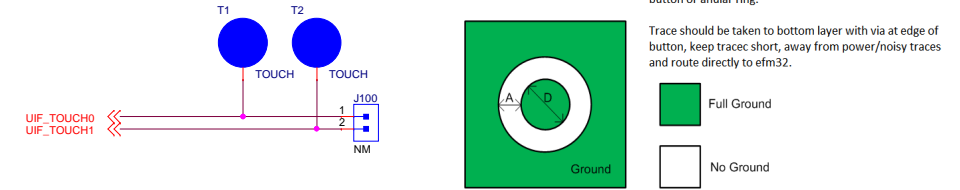
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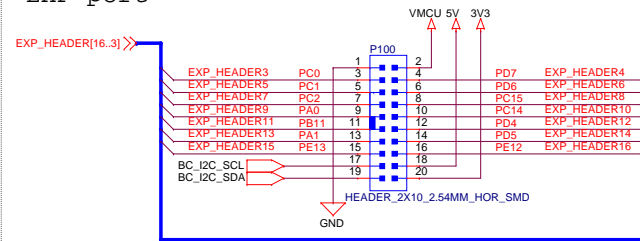
Breakout Connections



Touch Pads



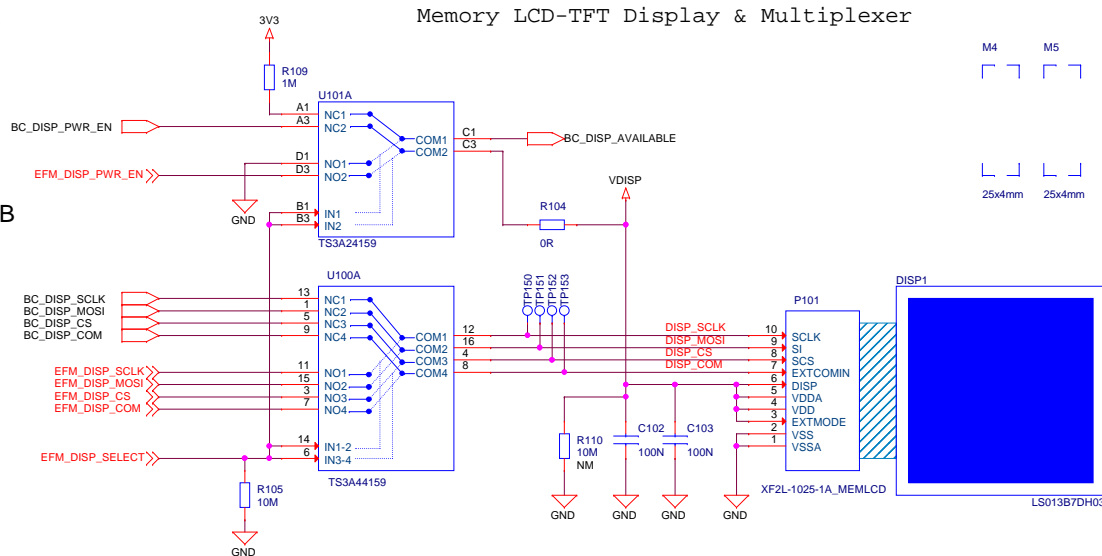
EXP port



EXP-Header Functionality

1	GND		
3	PC0		ACMP0_CH0
5	PC1		ACMP0_CH1
7	PC2		ACMP0_CH2
9	PA0		
11	PB11		IDAC0_OUT
13	PA1		
15	PE13	I2C0_SCL	
17	Reserved for E32 Board Identification		
19	Reserved for EXP Board Identification		
2	VMCU		
4	PD7	US1_TX	ADC0_CH7
6	PD6	US1_RX	ADC0_CH6
8	PC15	US1_CLK	
10	PC14	US1_CS	
12	PD4	LEU0_TX	ADC0_CH4
14	PD5	LEU0_RX	ADC0_CH5
16	PE12	I2C0_SDA	
18	5V		
20	3V3		

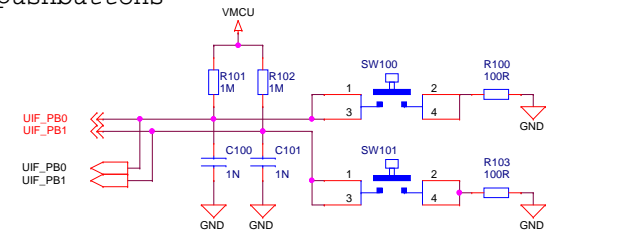
Memory LCD-TFT Display & Multiplexer



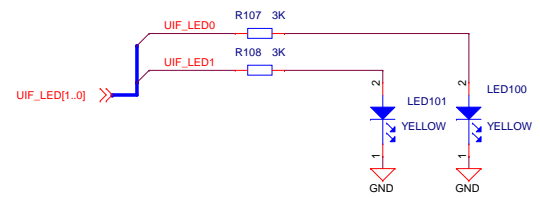
EFM_DISP_SELECT	DISP_CTRL	VDISP	BC_DISP_AVAILABLE
1	EFM	EFM_DISP_PWR_EN	0
0	BC	BC_DISP_PWR_EN	1

The EFM32 always controls ownership of the display using the EFM_DISP_SELECT signal.

User pushbuttons

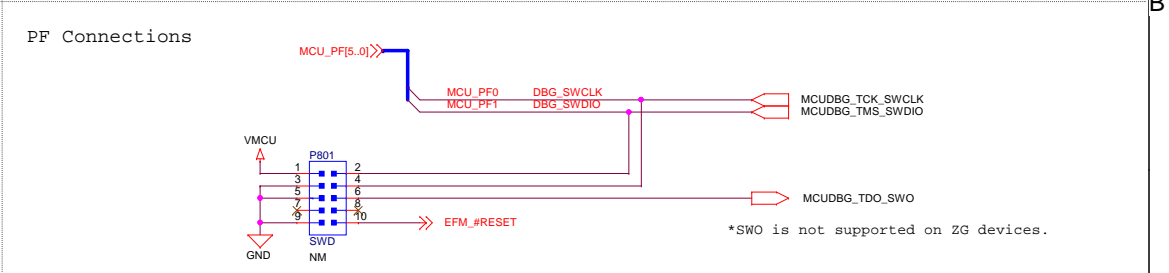
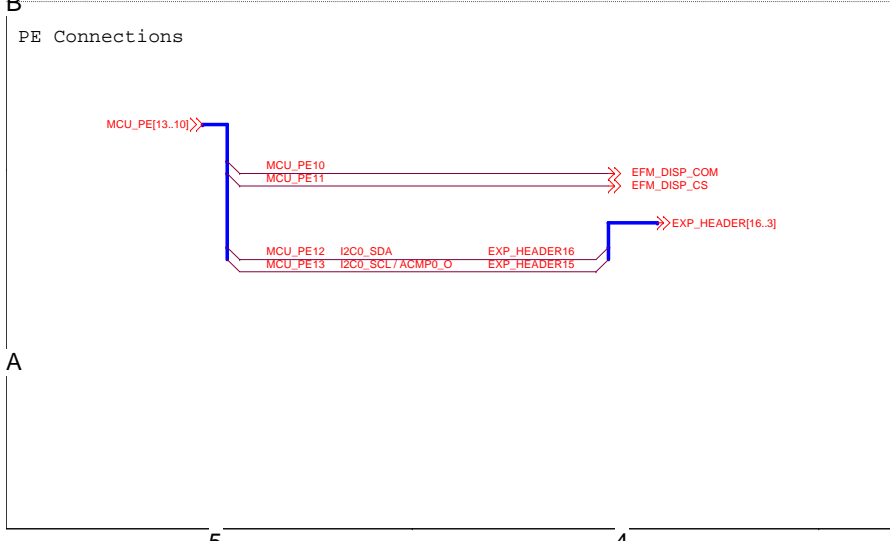
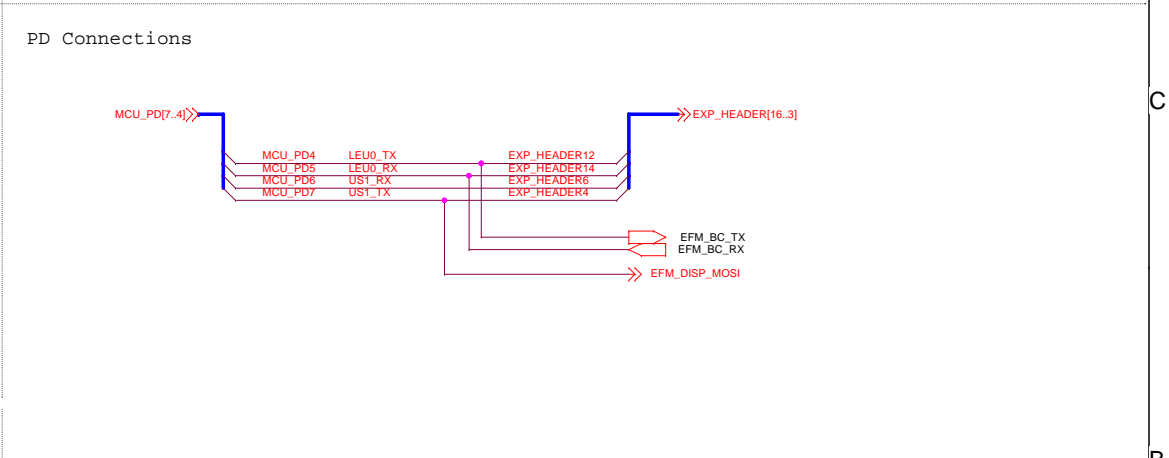
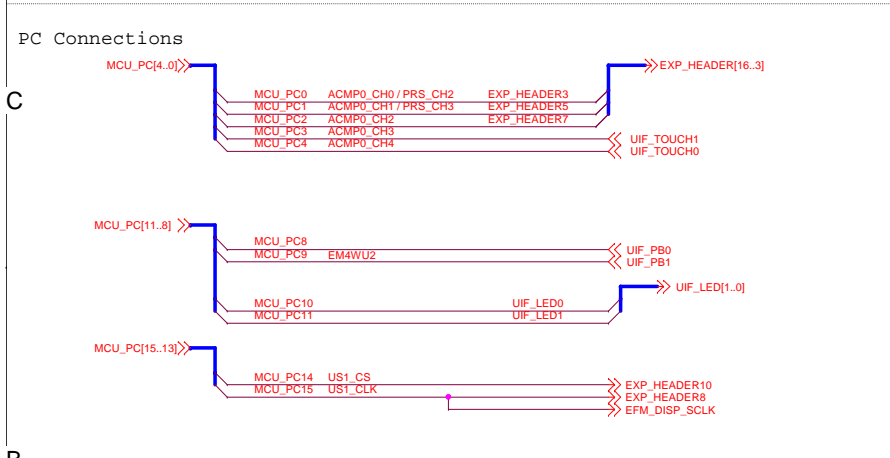
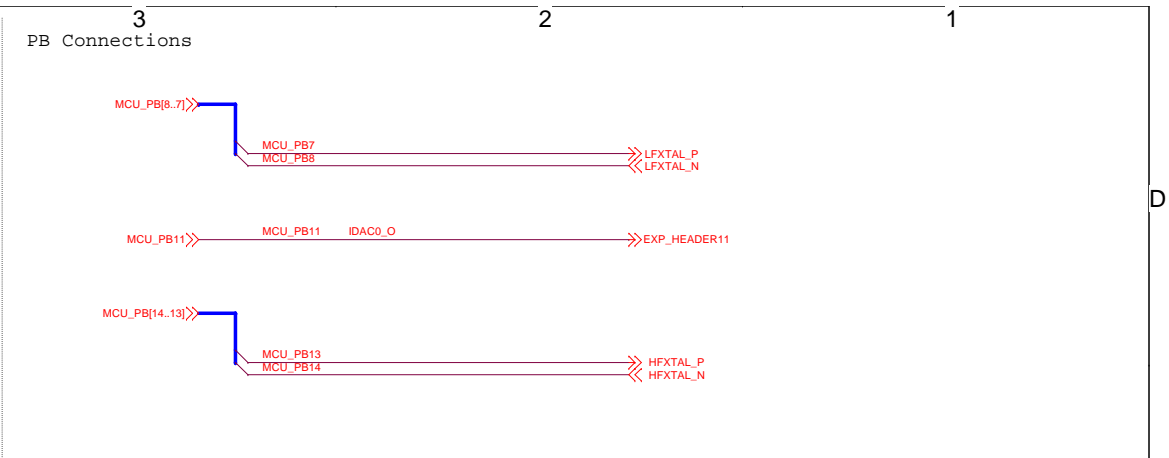
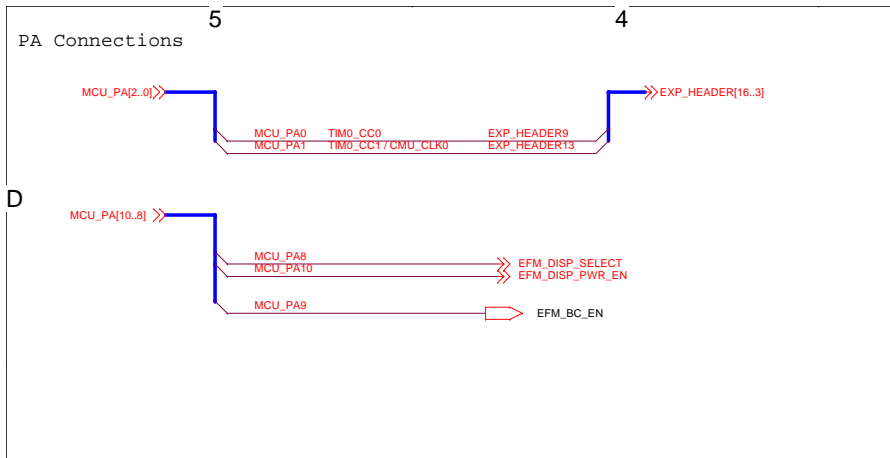


User LEDs

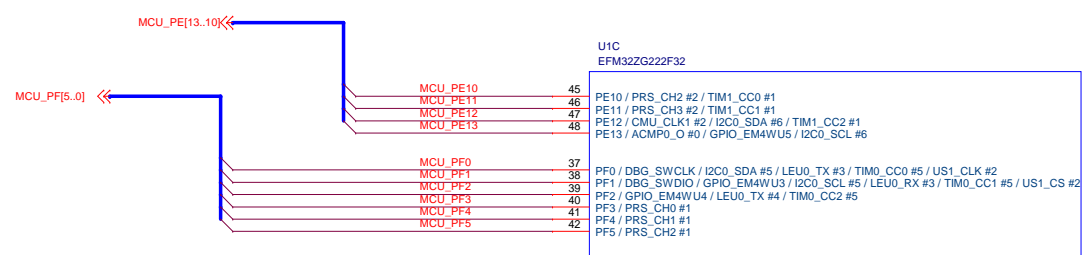
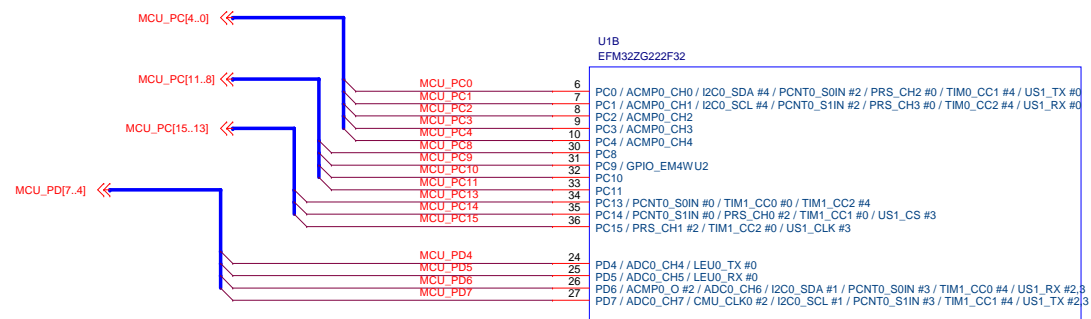
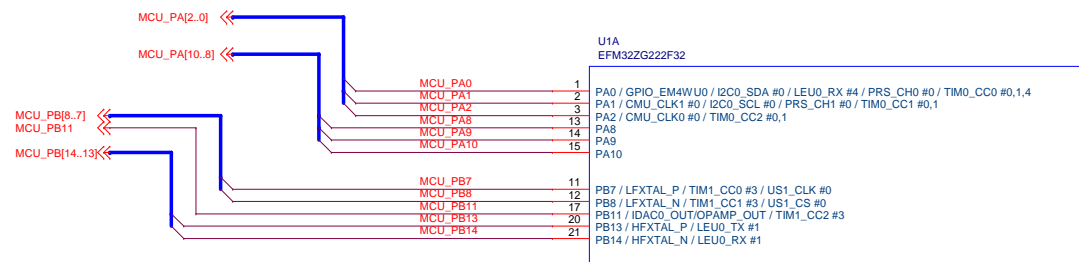


Target MCU Interface

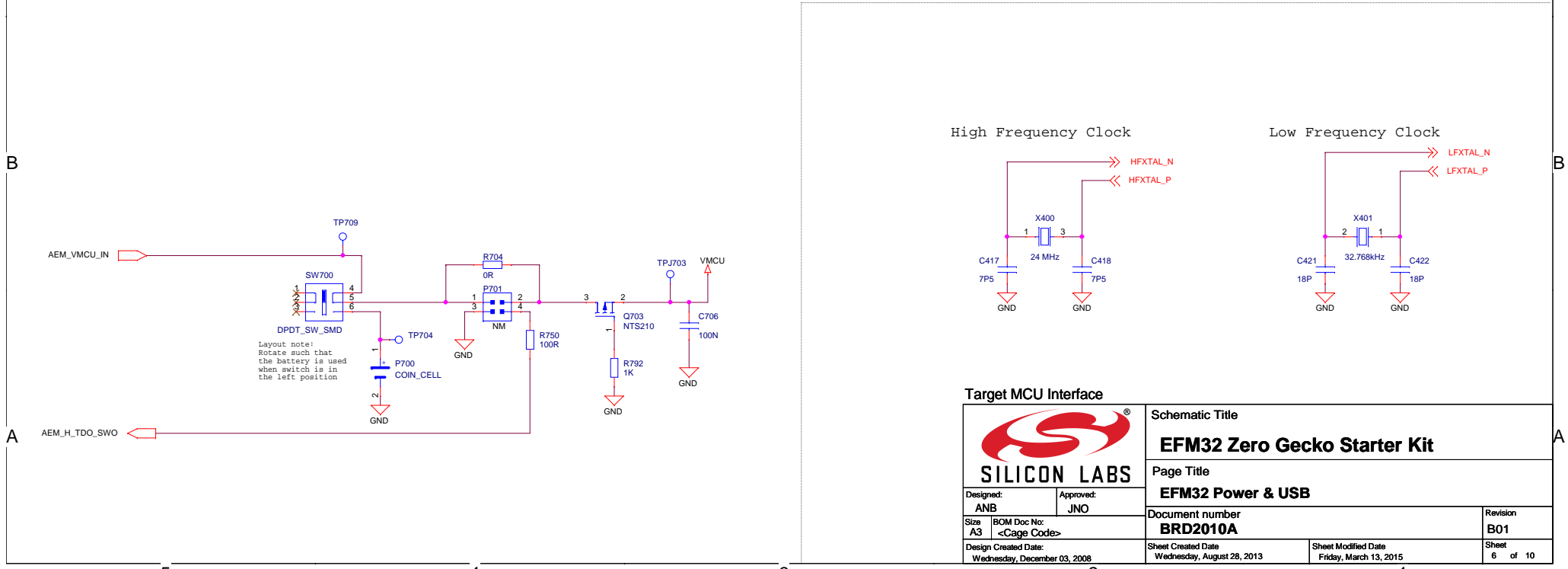
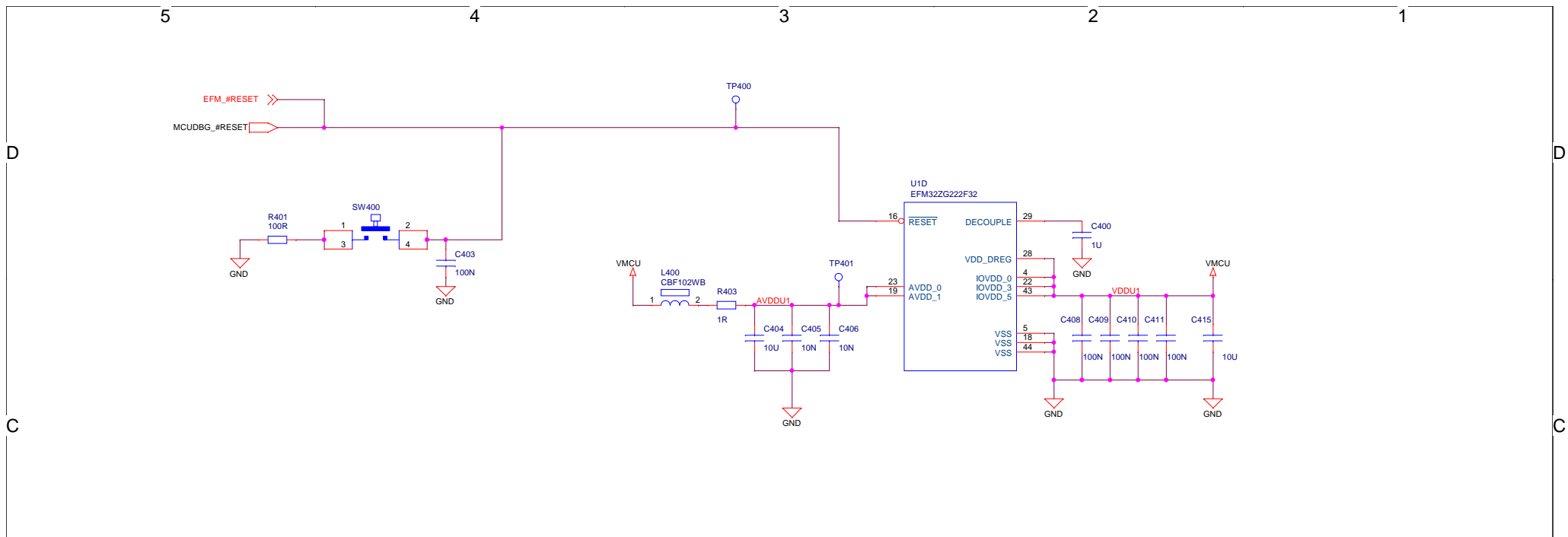
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		User Interfaces	
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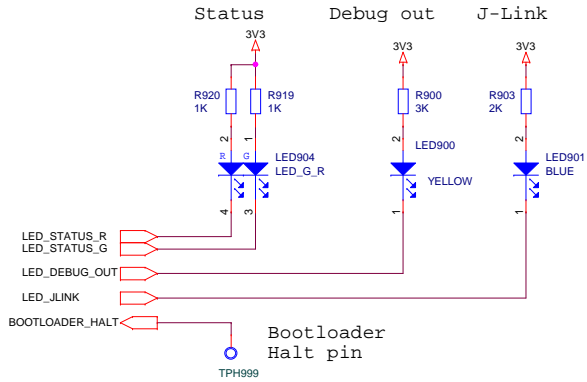


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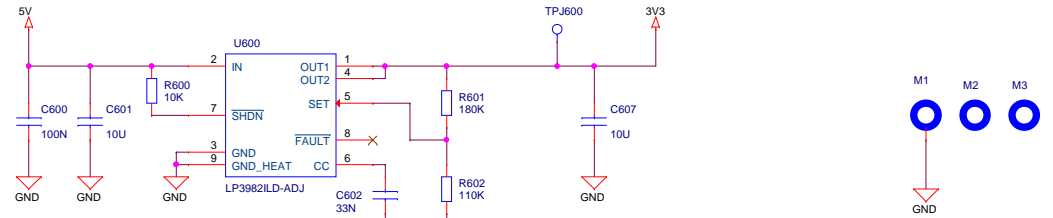


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		EFM32 Power & USB	
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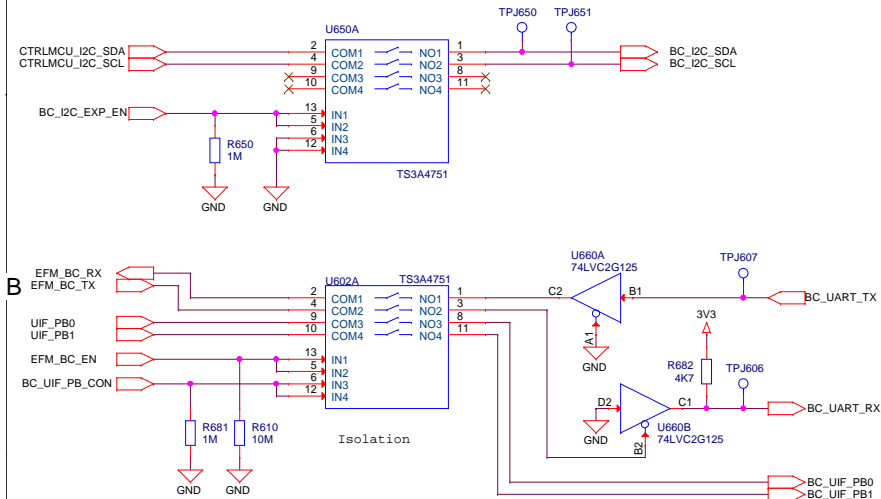
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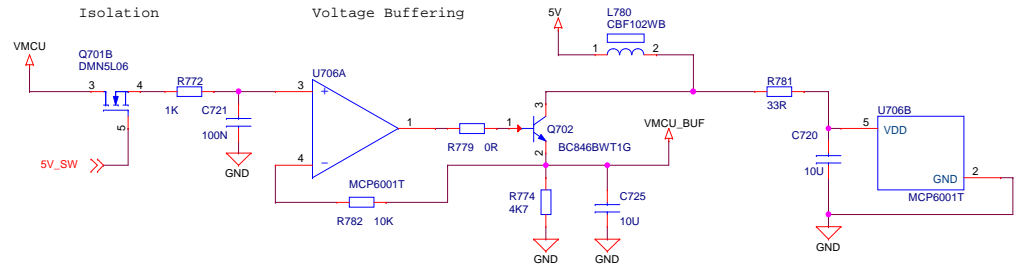
3V3 Regulator



Voltage Domain Isolation & Level Shift



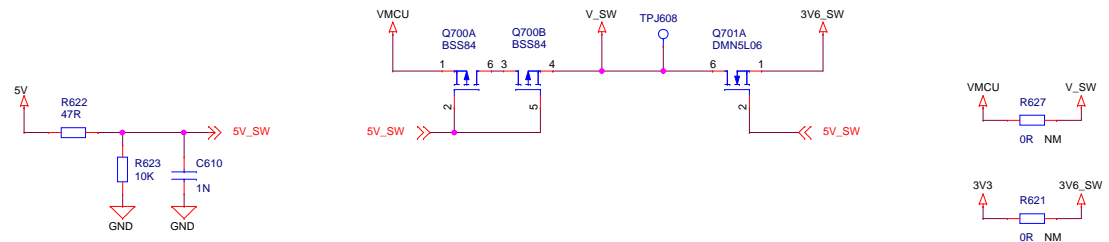
VMCU Voltage Mirror



Power Supply for Analog Switches

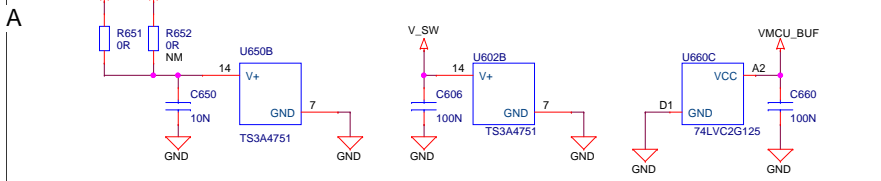
The USB VBUS voltage is used to bias these transistors, turning the P-Channel MOSFETs (Q700) off, and the N-Channel MOSFETs (Q701) on.

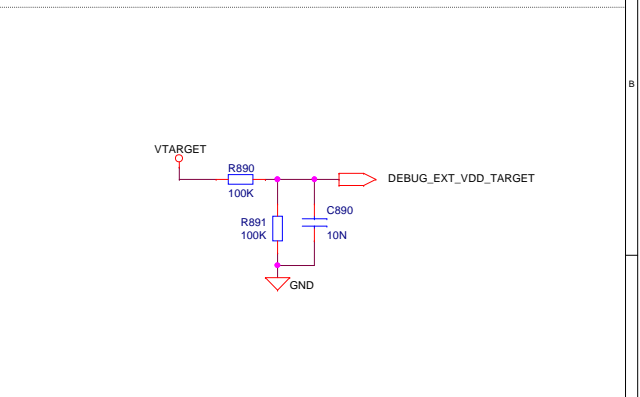
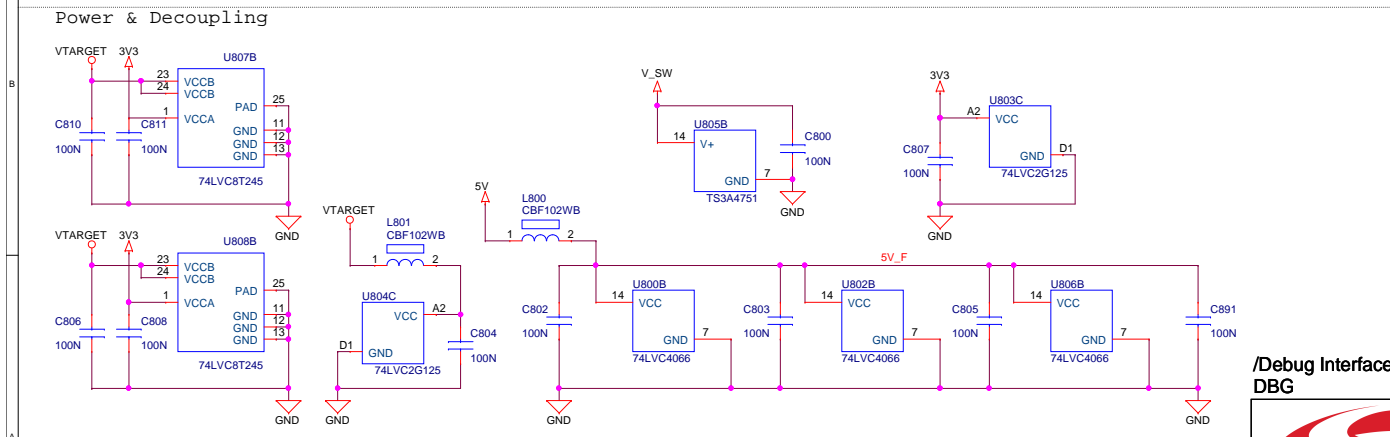
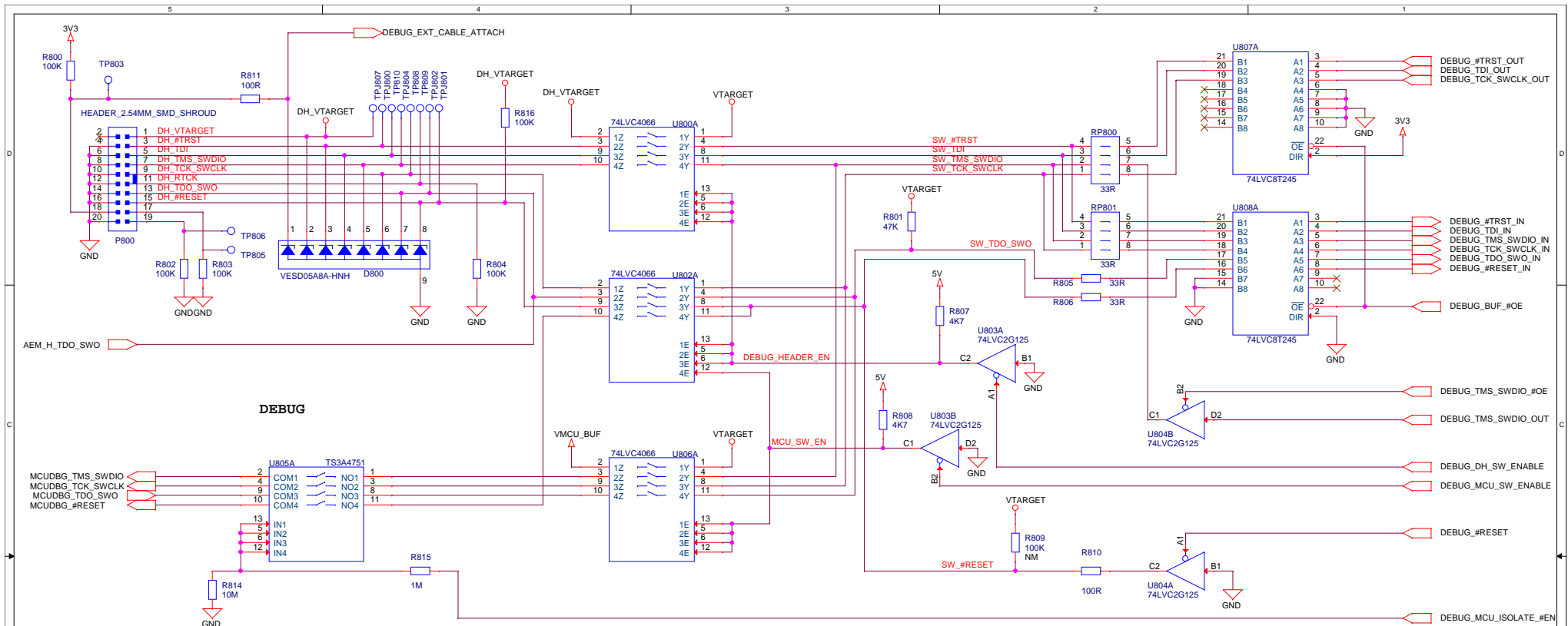
J-Link USB Cable	PMOS State	NMOS State	V_SW	VMCU_SENSE
Connected	Off	ON	3.6V	VMCU
Disconnected	ON	OFF	VMCU	Isolated



Starter Kit Common

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		Power & Misc	
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Mode	DEBUG_MCU_SW_ENABLE	DEBUG_DH_SW_ENABLE	DEBUG_BUF_#OE	ISOLATE_#EN	DH_VTARGET	VTARGET
Debug Out	0	1	0	0	External voltage	External voltage
MCU Debug	1	0	0	1	Disconnected	VMCU
Debug In	1	1	1	1	VMCU	VMCU
Debug Off	1	1	1	0	-	-

/Debug Interface
DBG

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Debug Interface

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BRD2010A

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Monday, August 12, 2013

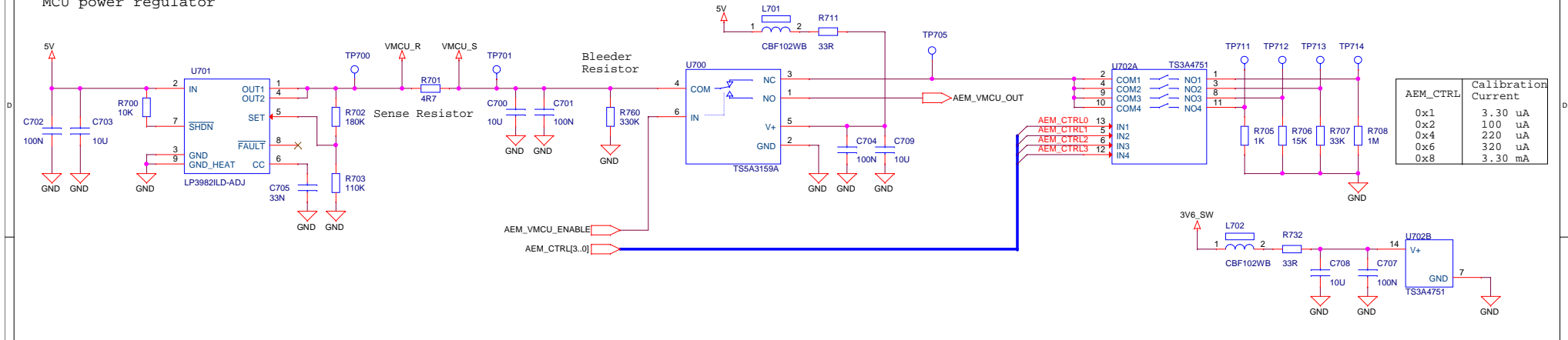
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B01

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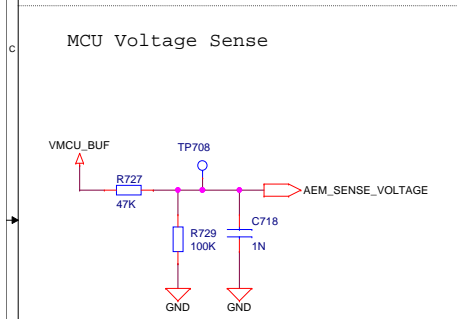
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MCU power regulator

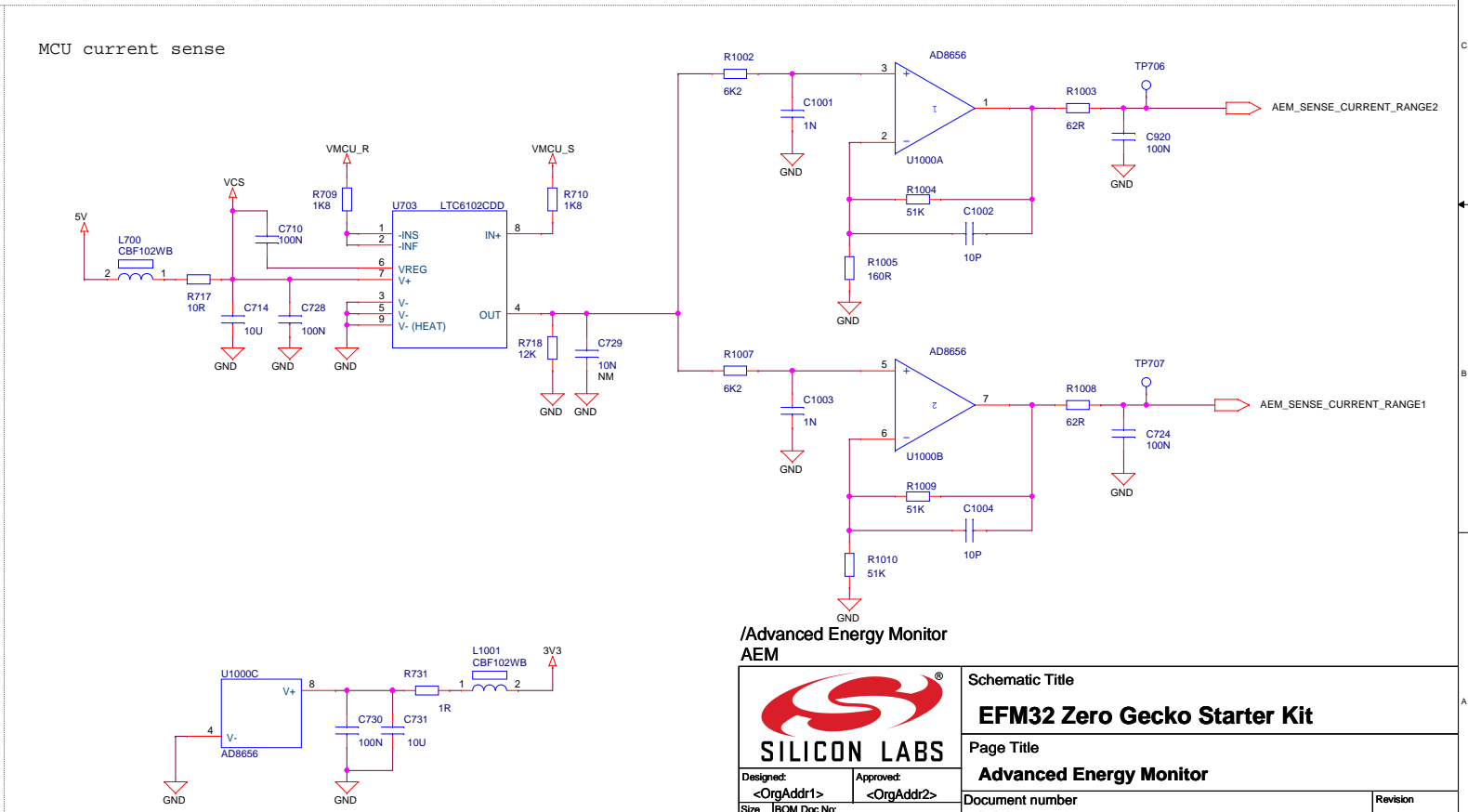


AEM_CTRL	Calibration Current
0x1	3.30 uA
0x2	100 uA
0x4	220 uA
0x6	320 uA
0x8	3.30 mA

MCU Voltage Sense



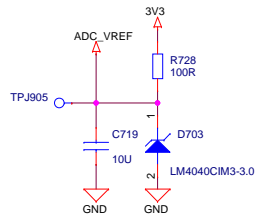
MCU current sense



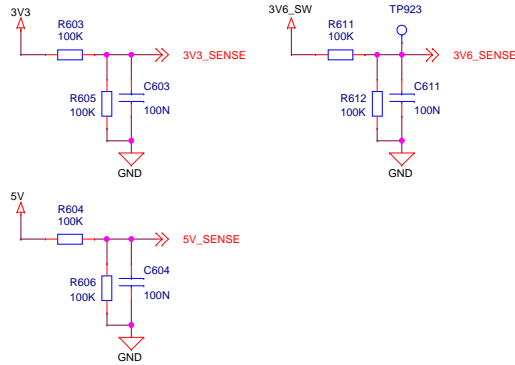
/Advanced Energy Monitor
AEM

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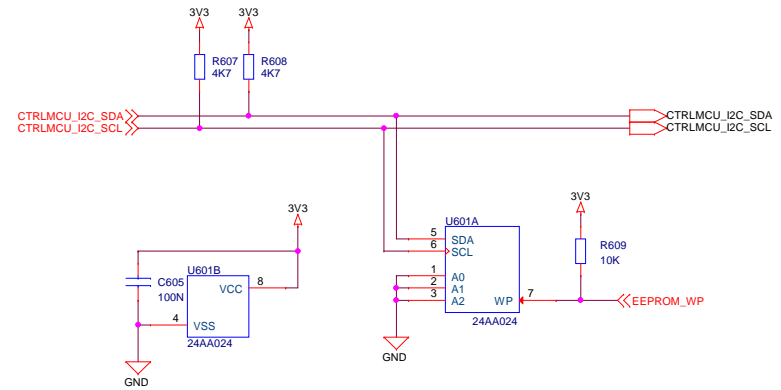
ADC reference voltage



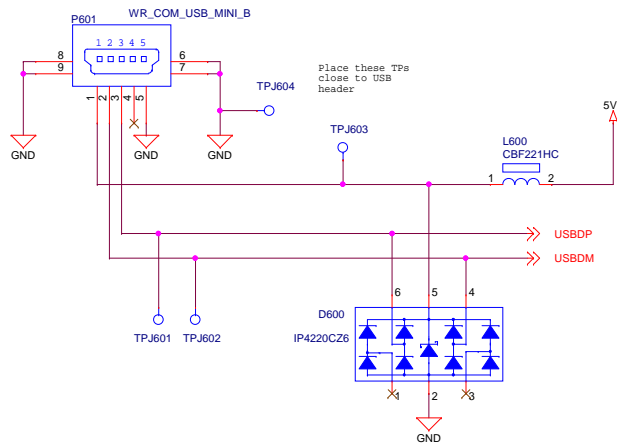
POWER SENSE



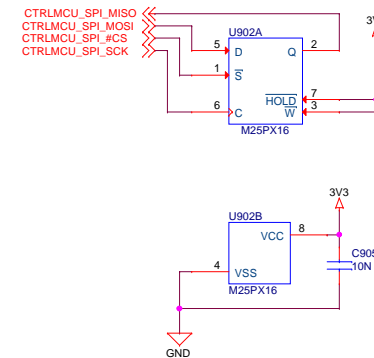
CTRLMCU EEPROM



J-Link USB Port



CTRLMCU SERIAL FLASH



/Board Controller
BOARD CONTROLLER

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