

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.



STK

 SILICON LABS®		Schematic Title	
		EFM32 Zero Gecko Starter Kit	
Designed: ANB		Approved: JNO	
Size A3		Page Title	
BOM Doc No:		Title Page	
Design Created Date: Wednesday, December 03, 2008		Document number	
Sheet Created Date Saturday, March 21, 2009		BRD2010A	
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		B00	
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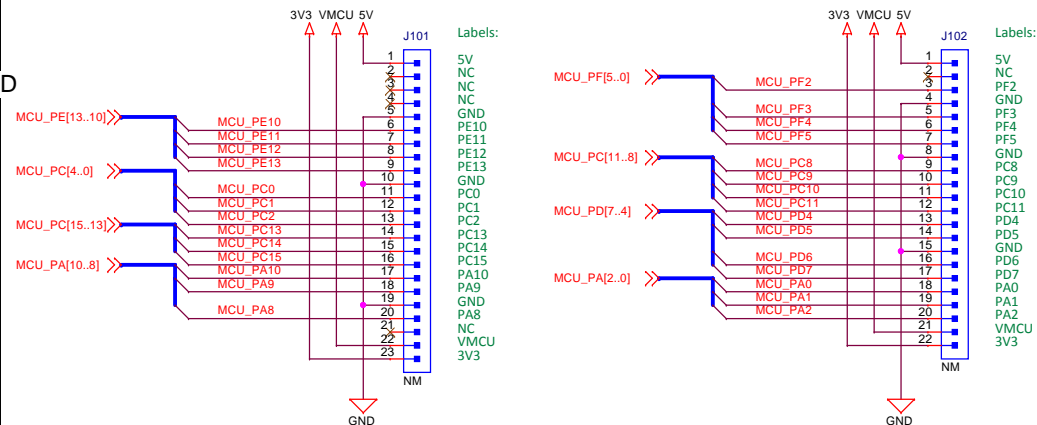
Breakout Connections

D

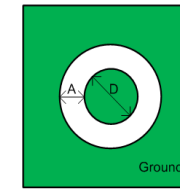
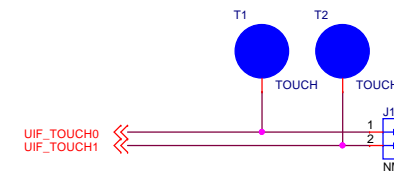
C

B

A

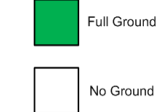


Touch Pads



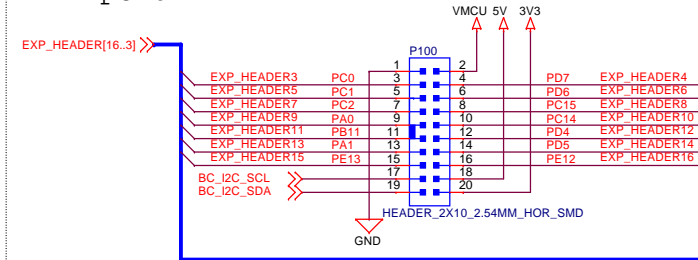
D = 7-10 mm, bigger is better
A = 2.5 mm
Only top layer shown. No ground on other layers below button or annular ring.

Trace should be taken to bottom layer with via at edge of button, keep traces short, away from power/noisy traces and route directly to efm32.



For multiple buttons, keep centers at least 20mm apart, enough to allow ground between buttons.

EXP port

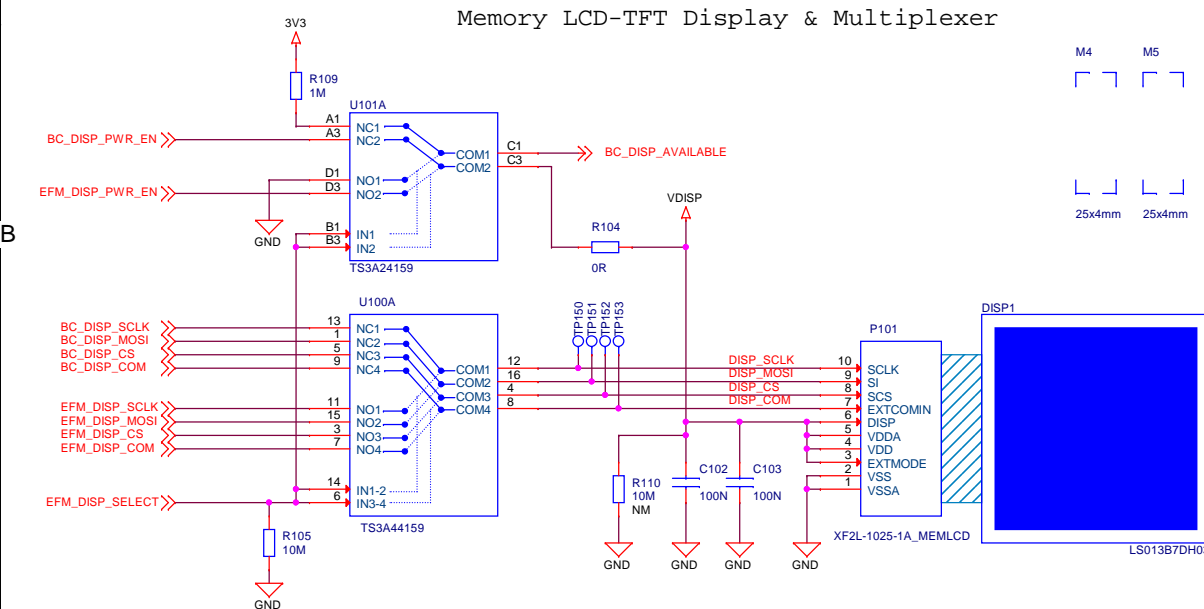


EXP-Header Functionality

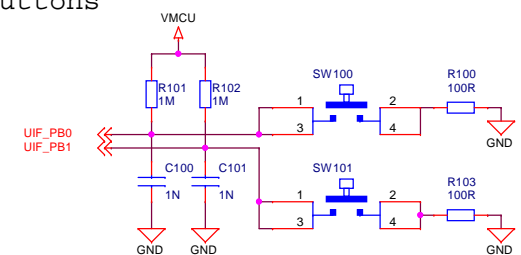
1	GND		
3	PC0		ACMP0_CH0
5	PC1		ACMP0_CH1
7	PC2		ACMP0_CH2
9	PA0		IDAC0_OUT
11	PB11		
13	PA1		
15	PE13		I2C0_SCL
17	Reserved for EXP Board Identification		
19	Reserved for EXP Board Identification		

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		

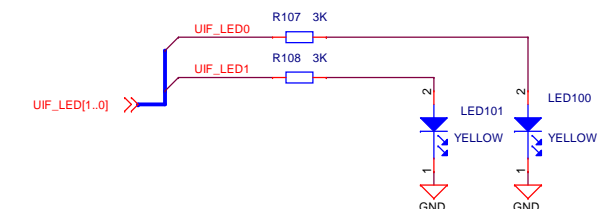
Memory LCD-TFT Display & Multiplexer



User pushbuttons



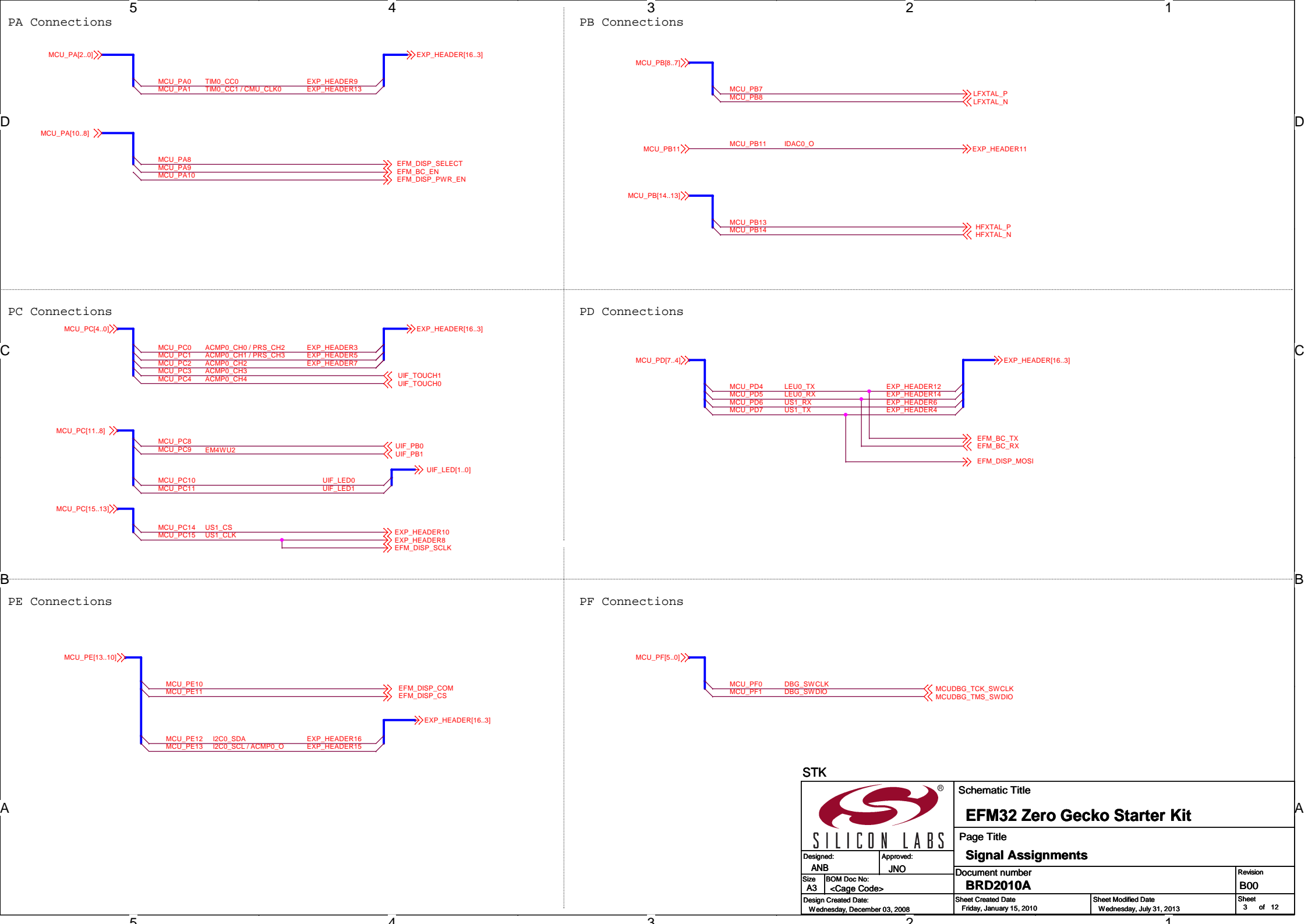
User LEDs

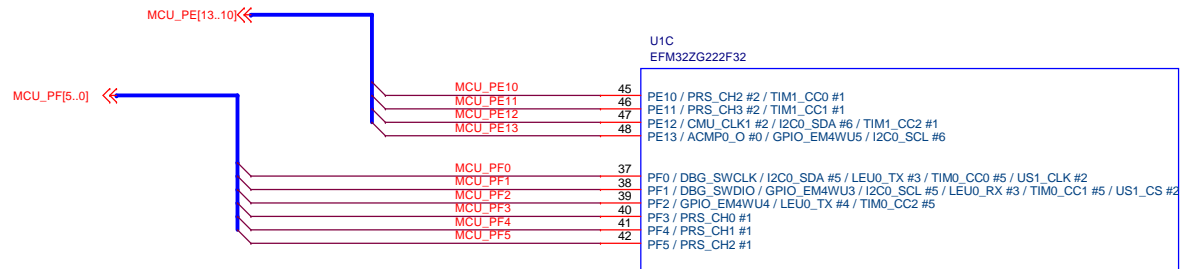
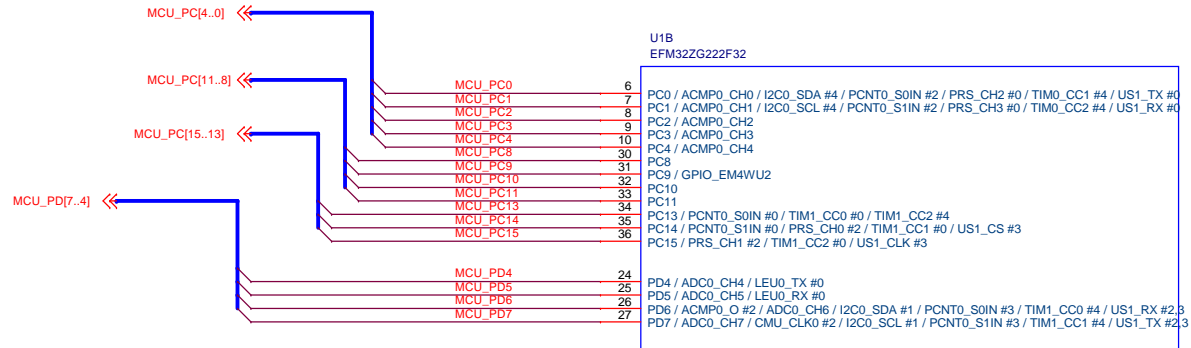
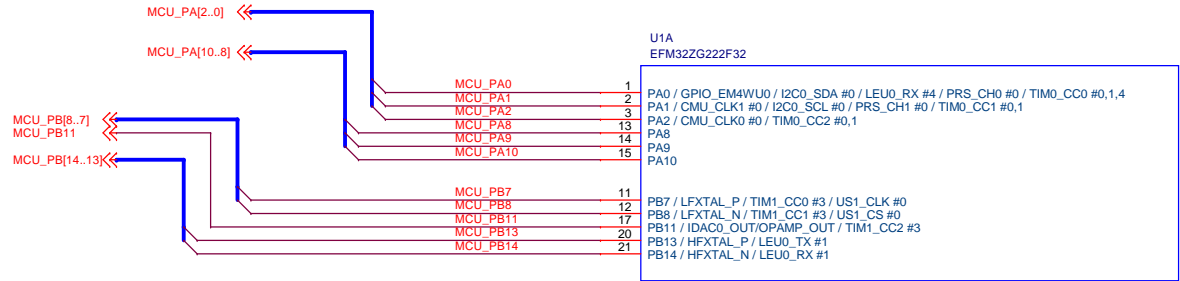



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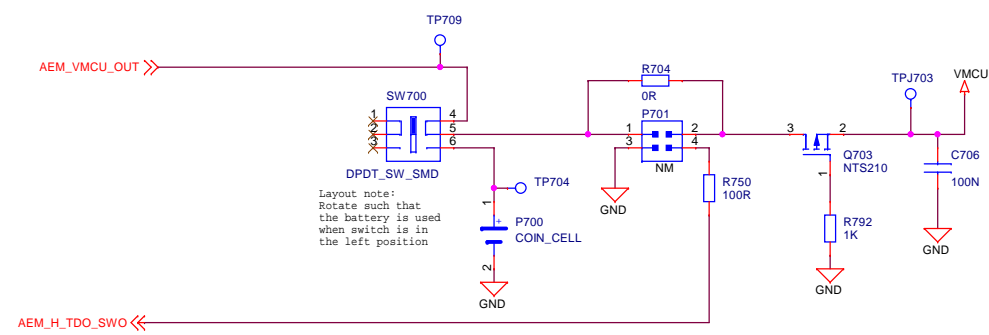
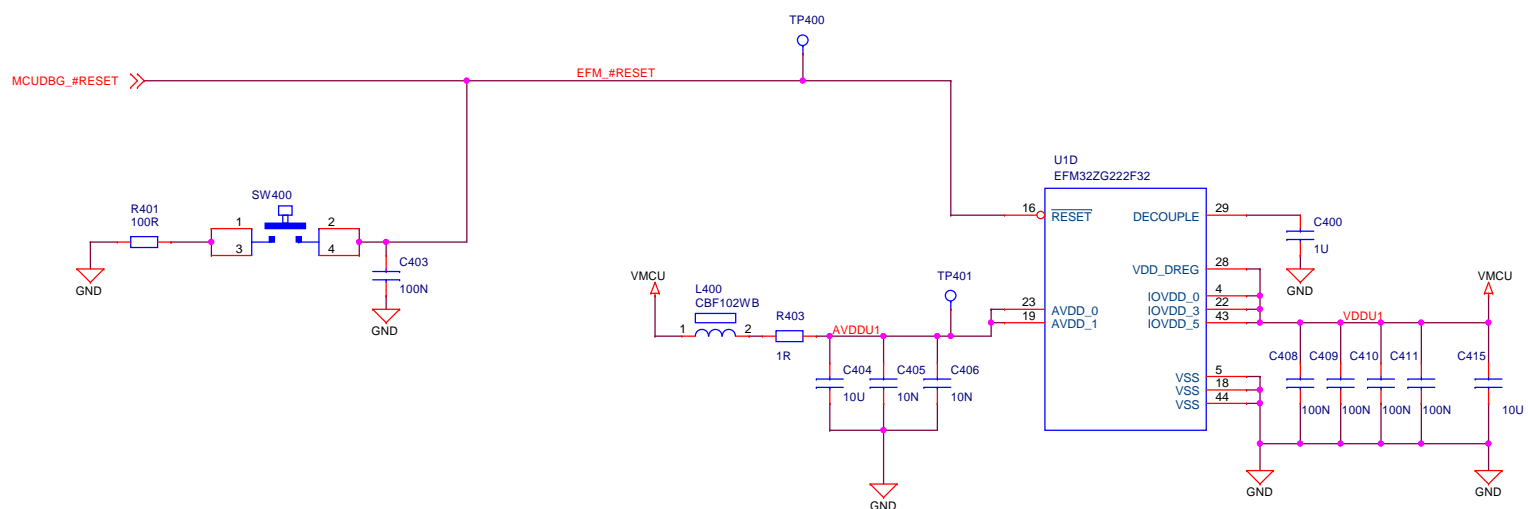
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User Interfaces		B00
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BRD2010A		Sheet Modified Date
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The EFM32 always controls ownership of the display using the EFM_DISP_SELECT signal.

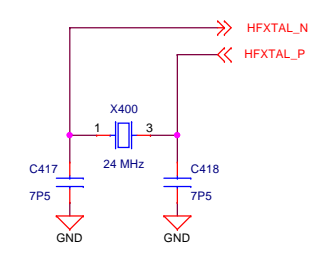




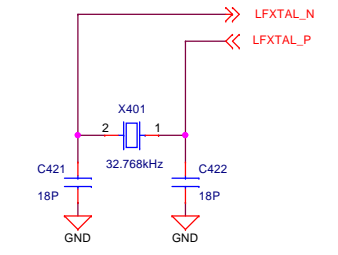
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High Frequency Clock

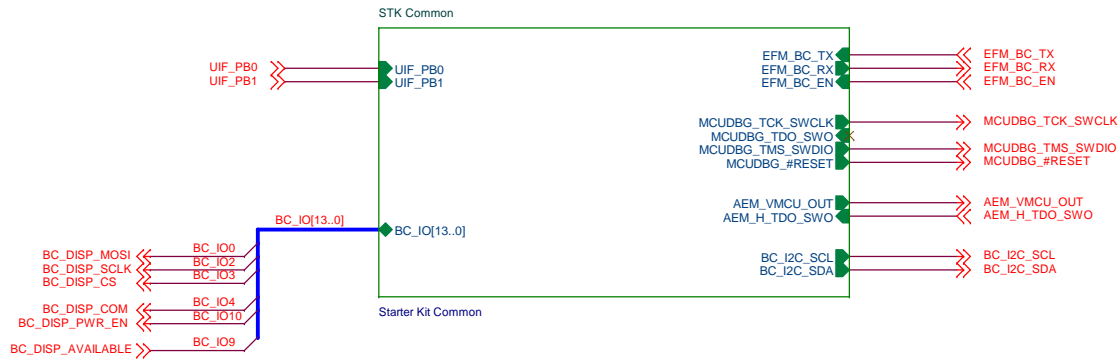


Low Frequency Clock




STK

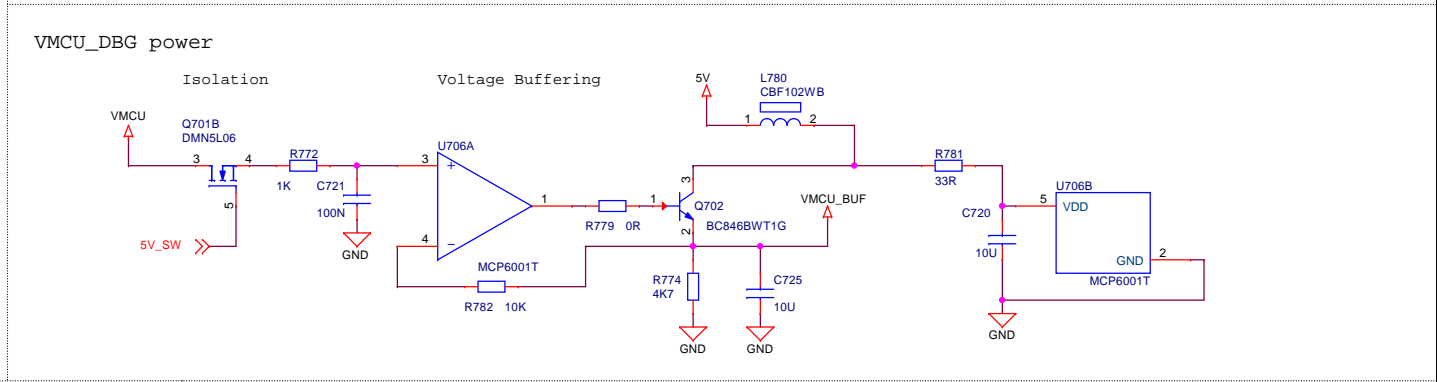
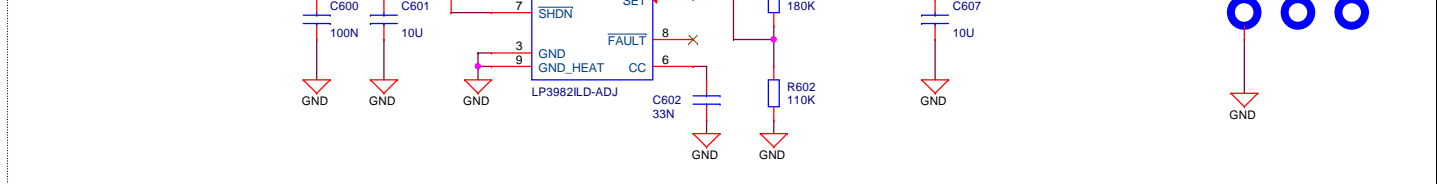
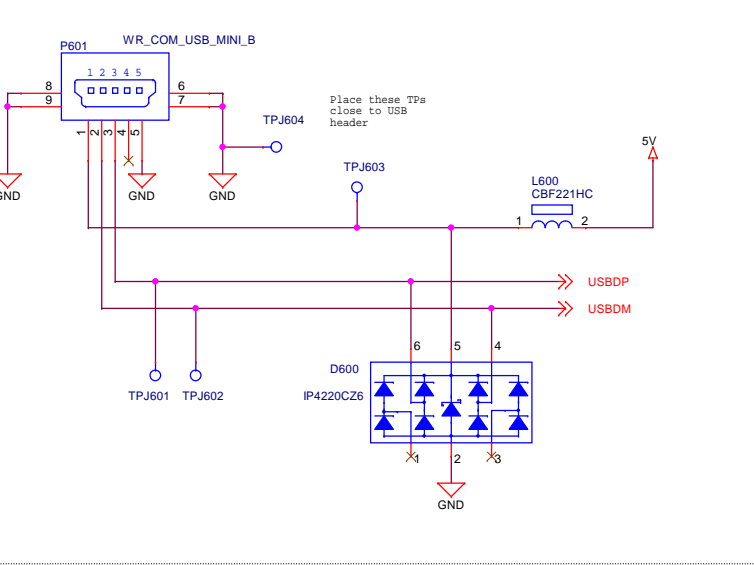
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Designed: ANB		Page Title	
Approved: JNO		EFM32 Power & USB	
Size A3		Document number	
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Design Created Date: Wednesday, December 03, 2008		Sheet Created Date: Thursday, April 11, 2013	Revision B00
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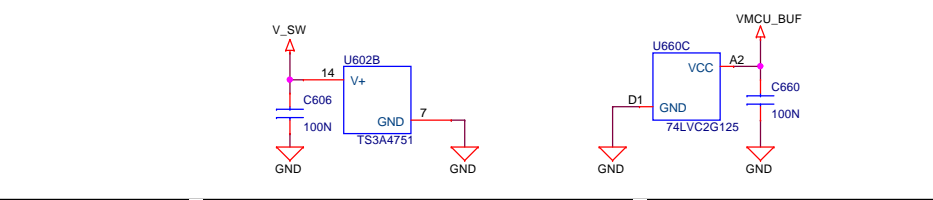
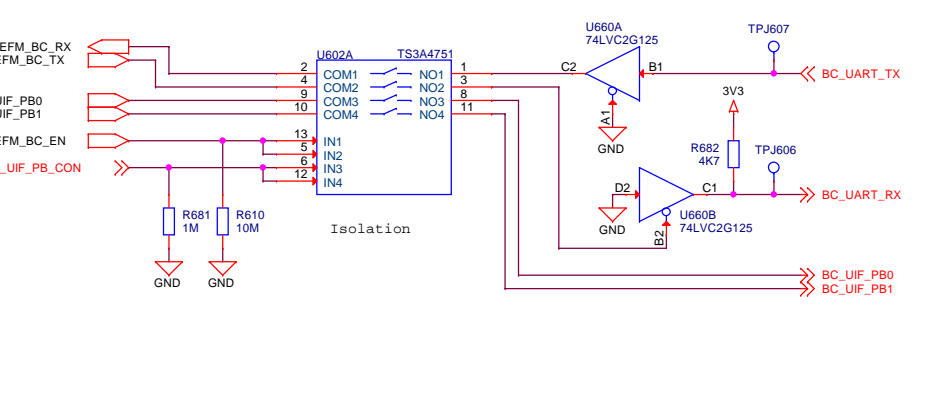
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Designed: ANB		Page Title	
Approved: JNO		STK Common Interface	
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	5	4
Power input		



Board Controller Communication

User input to board controller



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

Power Supply for Analog Switches

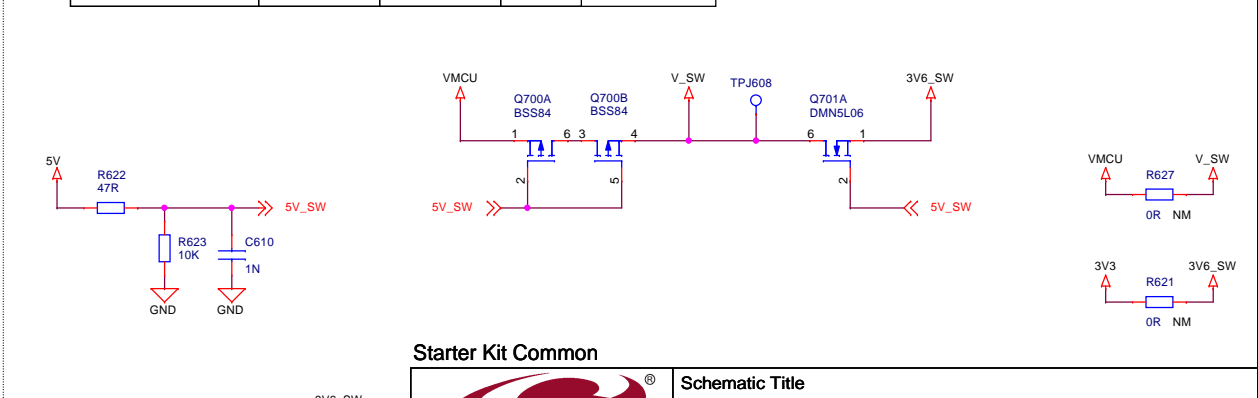
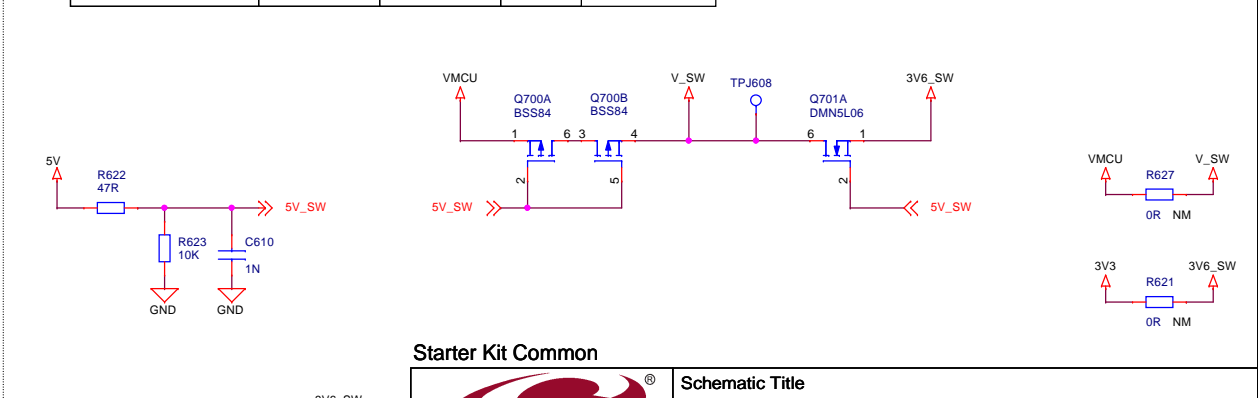
The USB VBUS voltage is used to bias these transistors, turning the P-Channel MOSFETs (Q700) off, and the N-Channel MOSFETs (Q701) on.

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



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Size A3	BOM Doc No: <Cage Code>
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Wednesday, June 12, 2013

Schematic Title

EFM32 Zero Gecko Starter Kit

Page Title

Power & Misc	
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Document number	Revision
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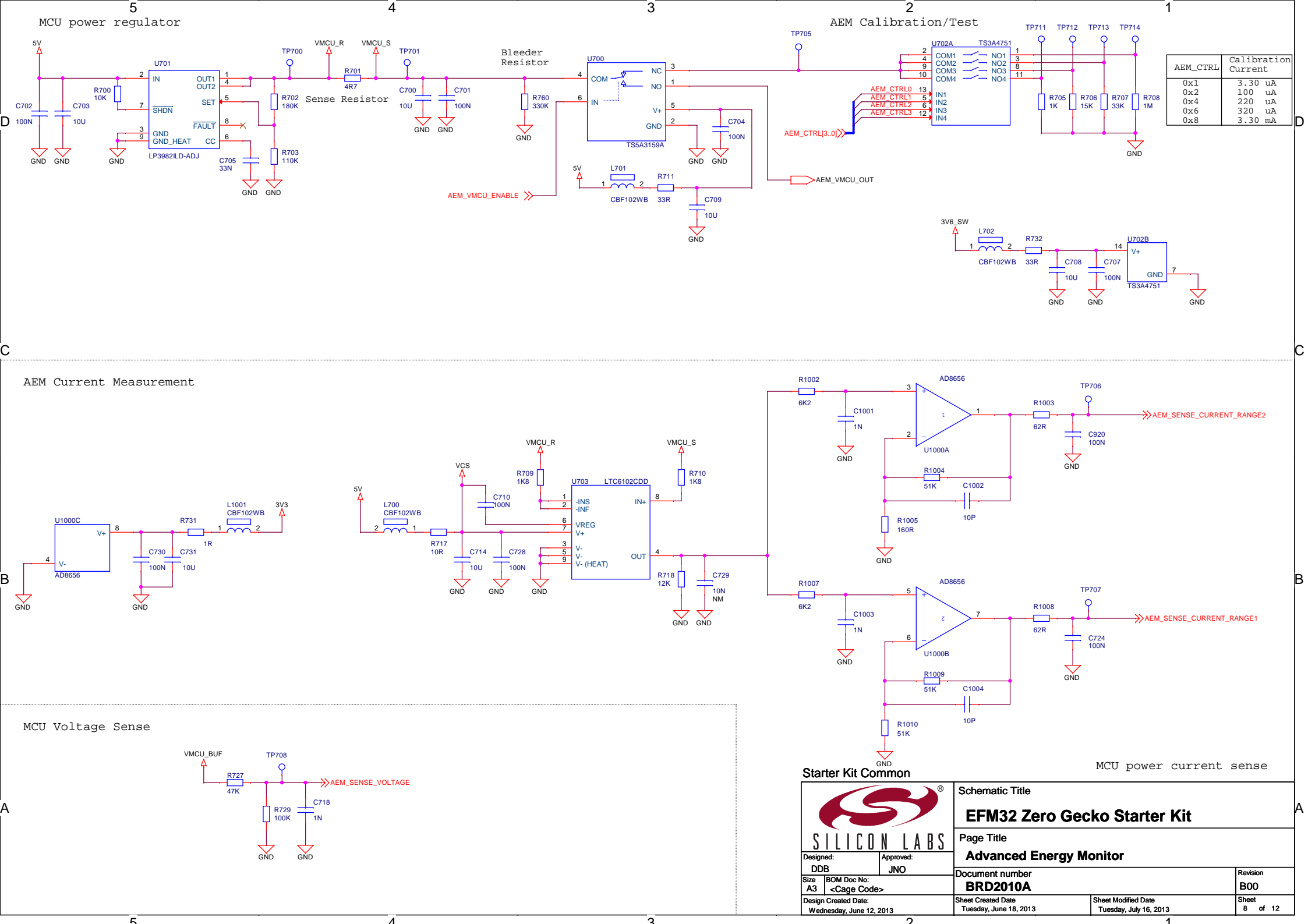
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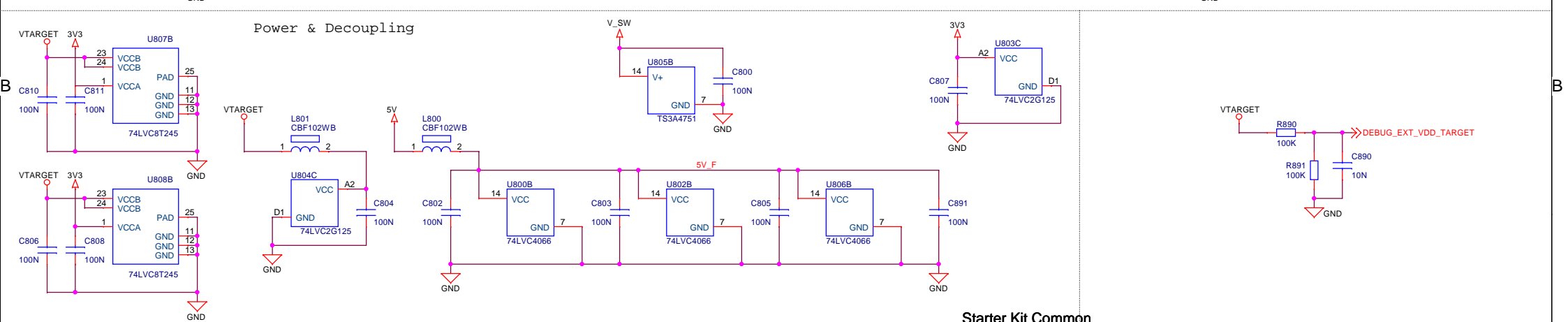
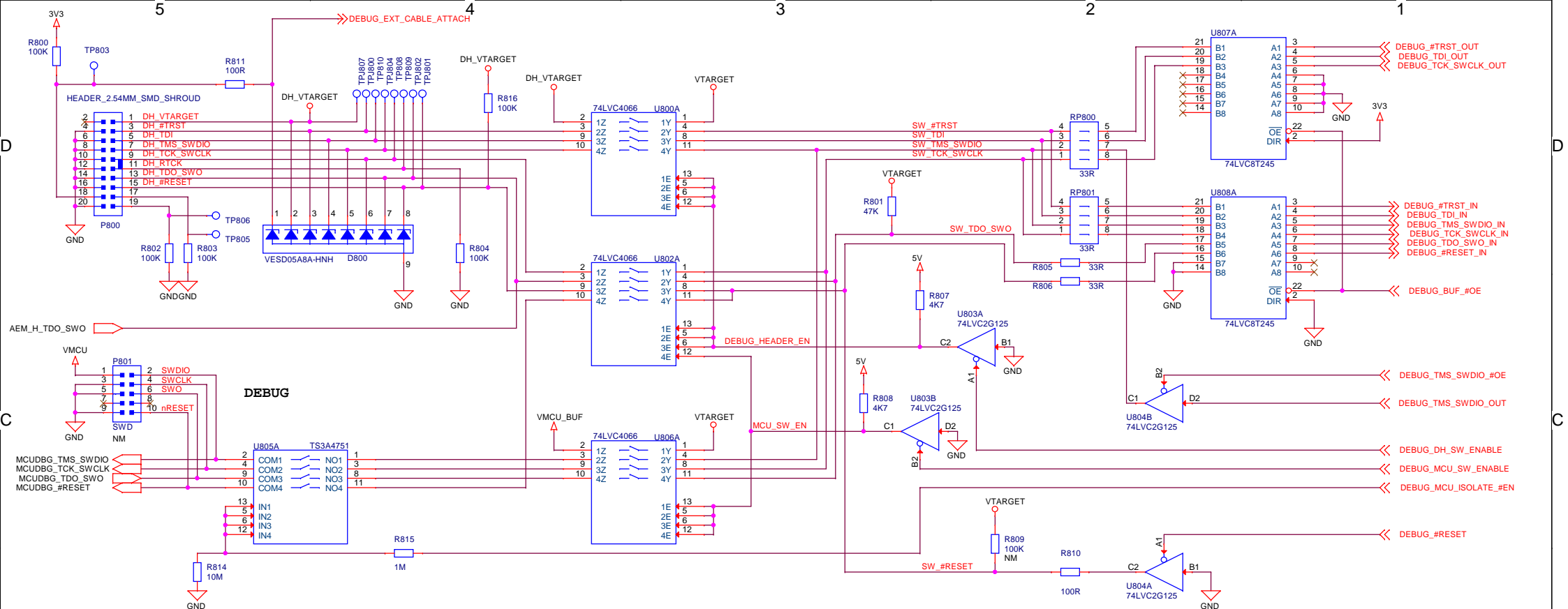
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Revision

B00

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Starter Kit Common						
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	-	-

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DDB

Approved:

JNO

Size

A3

BOM Doc No:

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EFM32 Zero Gecko Starter Kit

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Debug Interface

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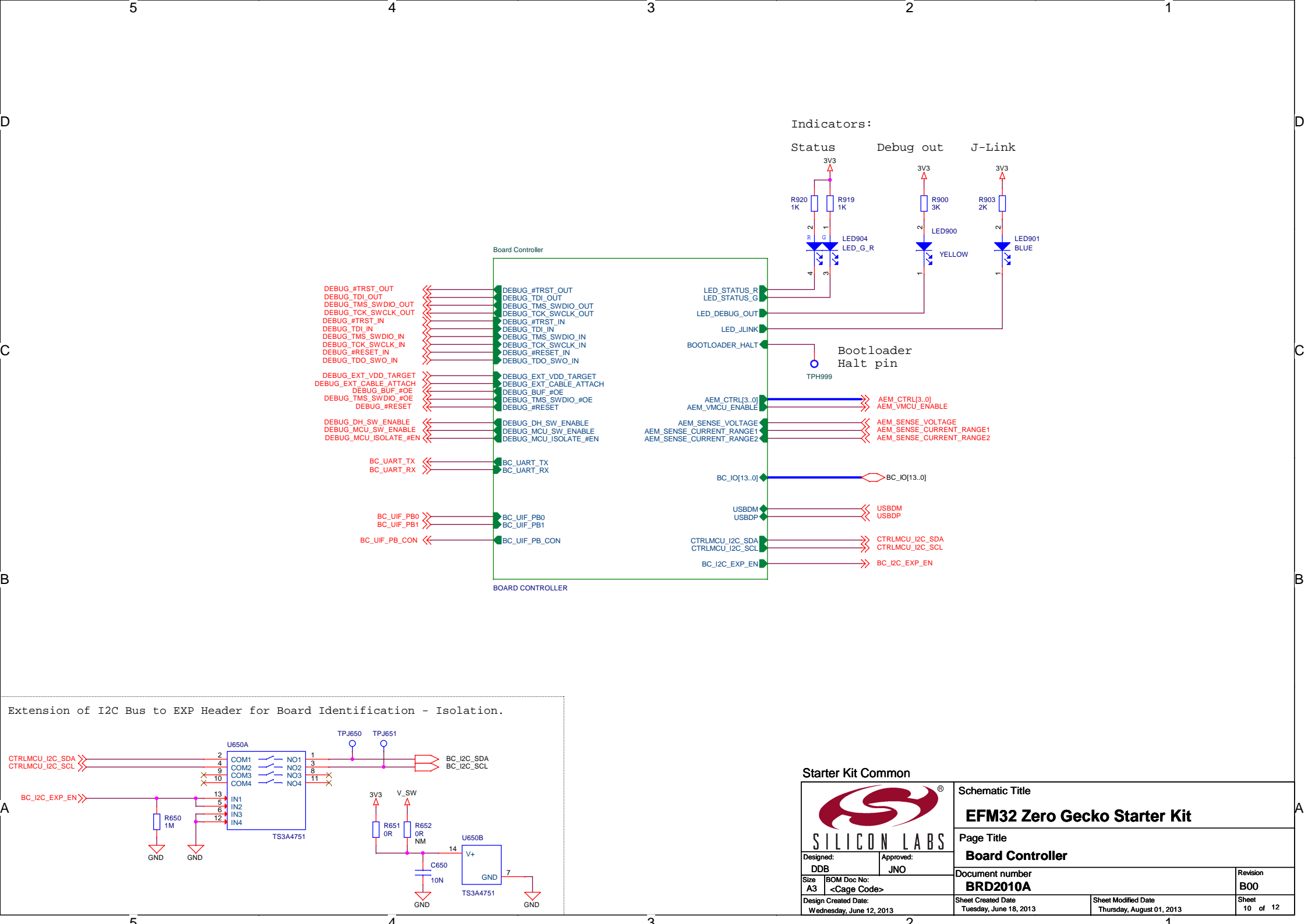
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Revision

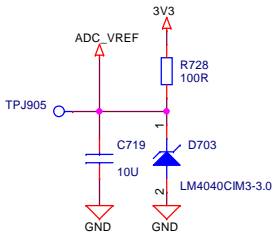
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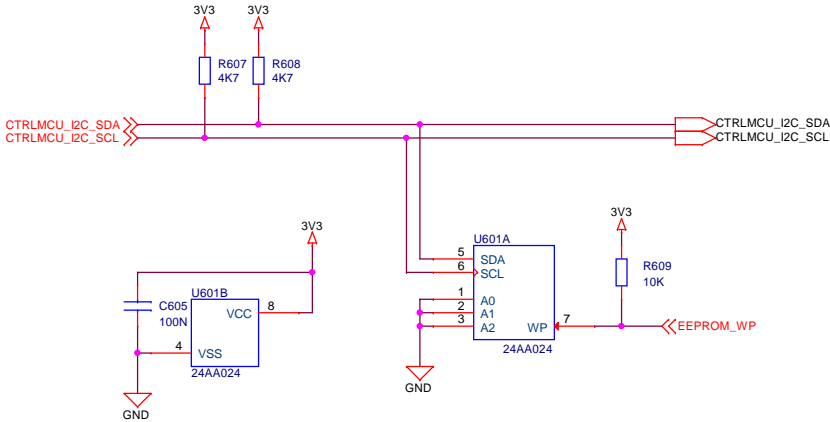
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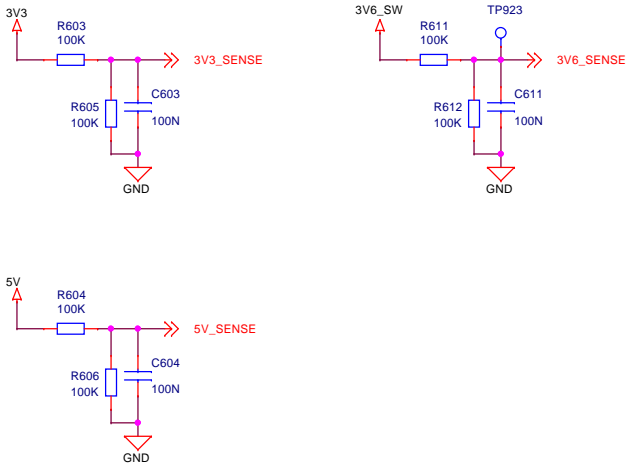
ADC reference voltage



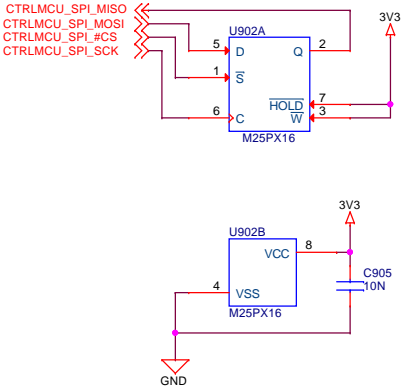
CTRLMCU EEPROM



POWER SENSE

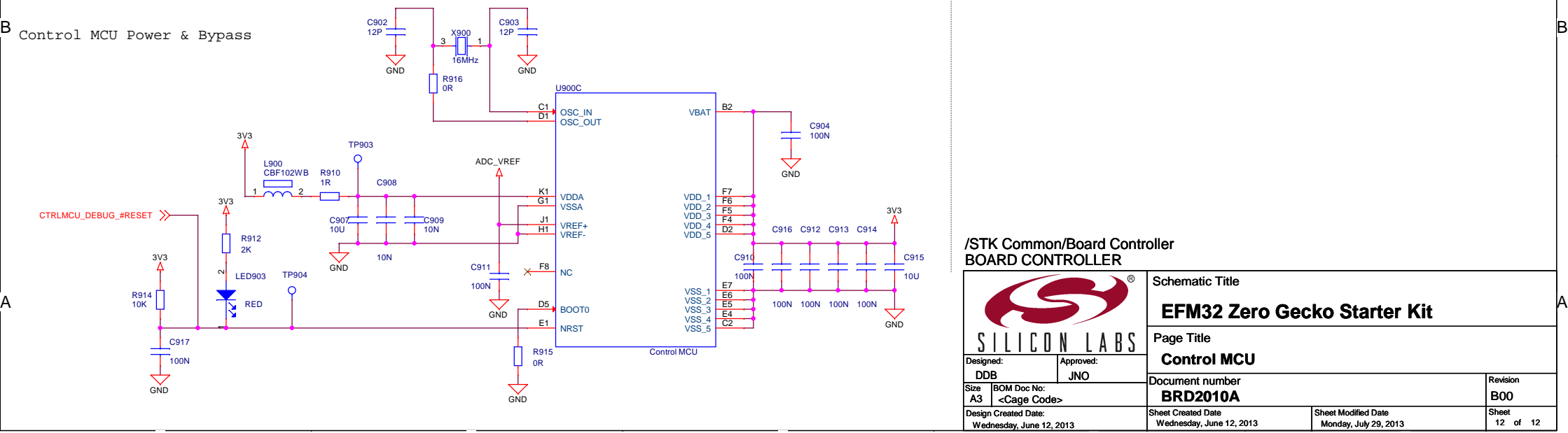
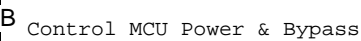
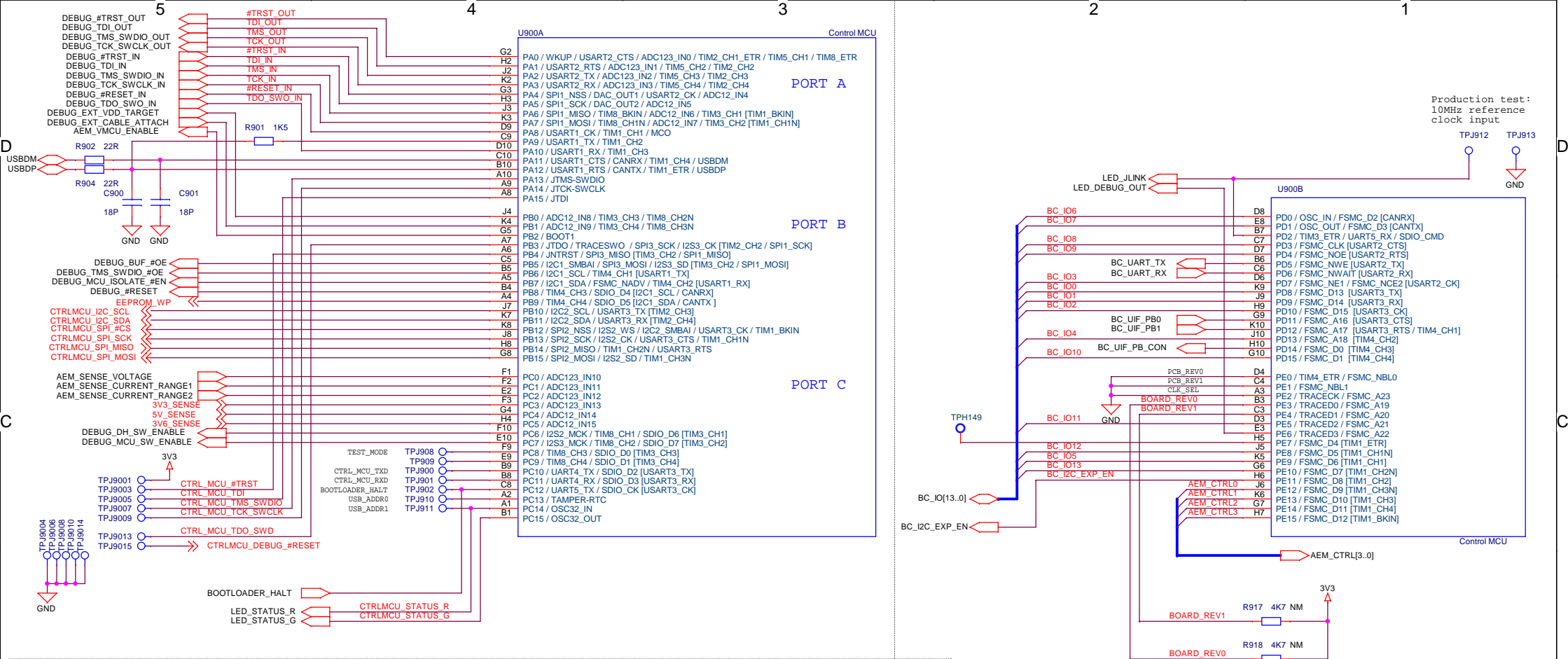


CTRLMCU SERIAL FLASH



/STK Common/Board Controller
BOARD CONTROLLER

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		EFM32 Zero Gecko Starter Kit	
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/STK Common/Board Controller
BOARD CONTROLLER