

EFM32 Zero Gecko STK

Board Function	Page
Title Page	1
User Interface	2
EFM32 signal Assignments	3
EFM32 I/O	4
EFM32 Power	5
STK Common Interface	6
STK Common/Power & Misc	7
STK Common/AEM	8
STK Common/Debug Interface	9
STK Common/Board Controller	10
Board Controller/Misc	11
Board Controller/Control MCU	12

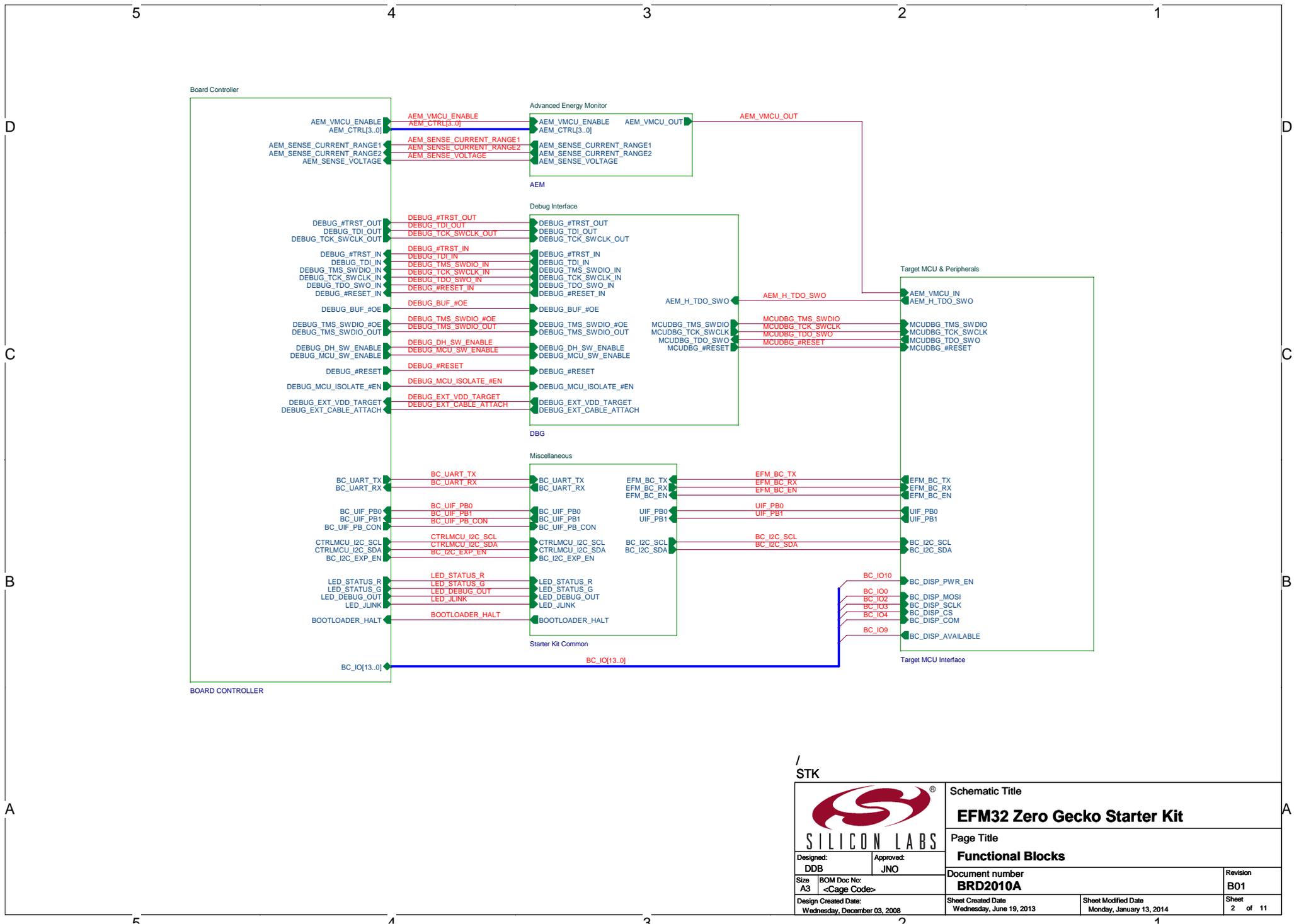
Revision History

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.



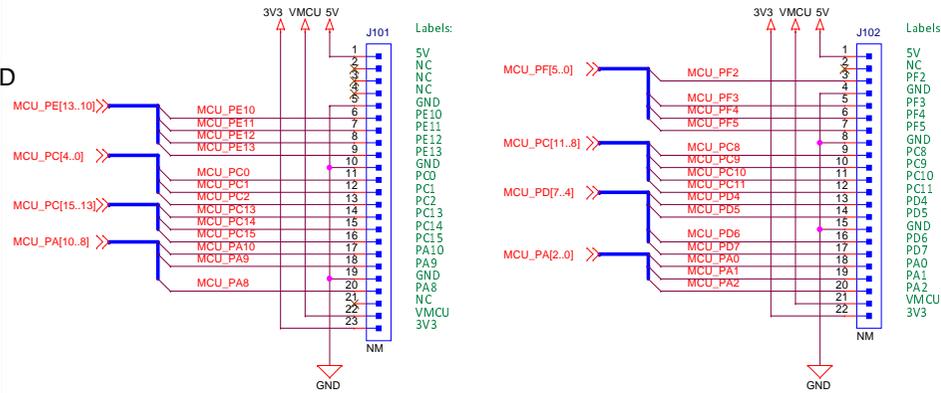
STK

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Designed: ANB Approved: JNO		Page Title	
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Size A3	BOM Doc No:	Document number	Revision
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Design Created Date: Wednesday, December 03, 2008	Sheet Created Date Saturday, March 21, 2009	Sheet Modified Date Monday, January 13, 2014	Sheet 1 of 11

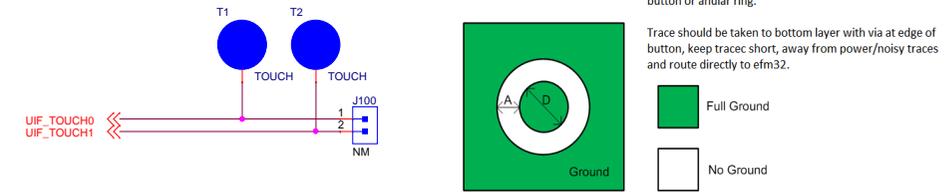


		Schematic Title	
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Designed: DDB Approved: JNO		Page Title	
		Functional Blocks	
Size A3	BOM Doc No: <Cage Code>	Document number BRD2010A	Revision B01
Design Created Date: Wednesday, December 03, 2008	Sheet Created Date Wednesday, June 19, 2013	Sheet Modified Date Monday, January 13, 2014	Sheet 2 of 11

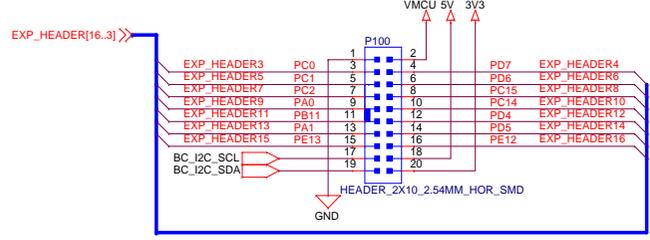
Breakout Connections



Touch Pads



EXP port

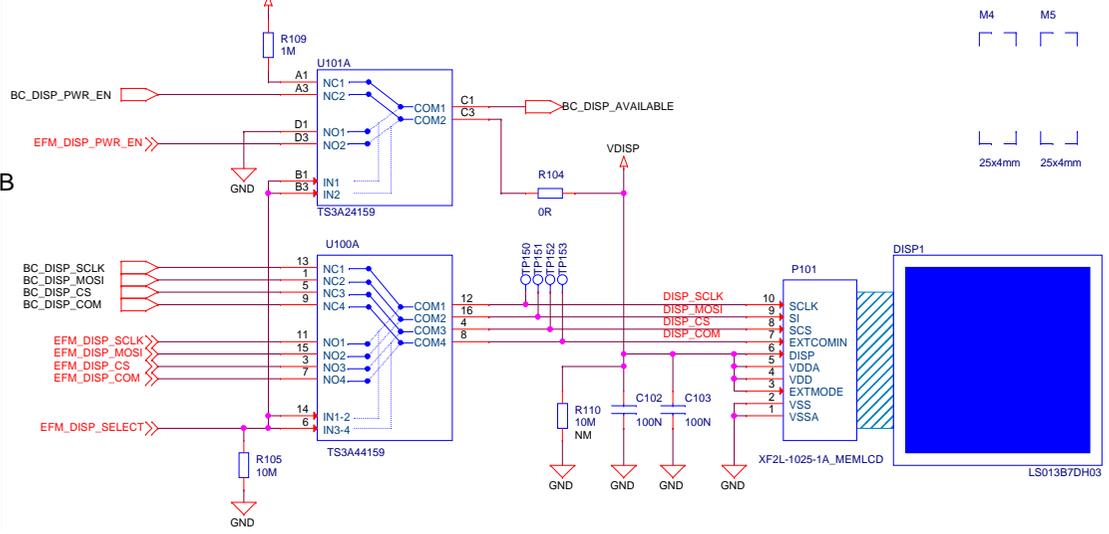


EXP-Header Functionality

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		

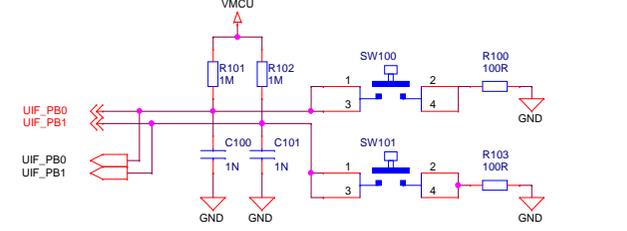
Memory LCD-TFT Display & Multiplexer



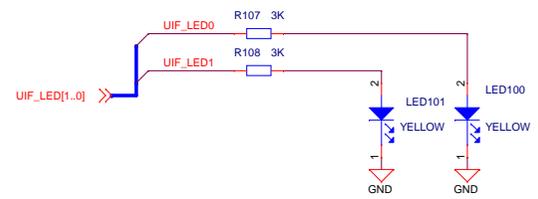
EFM_DISP_SELECT	DISP_CTRL	VDISP	BC_DISP_AVAILABLE
1	EFM	EFM_DISP_PWR_EN	0
0	BC	BC_DISP_PWR_EN	1

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

User pushbuttons

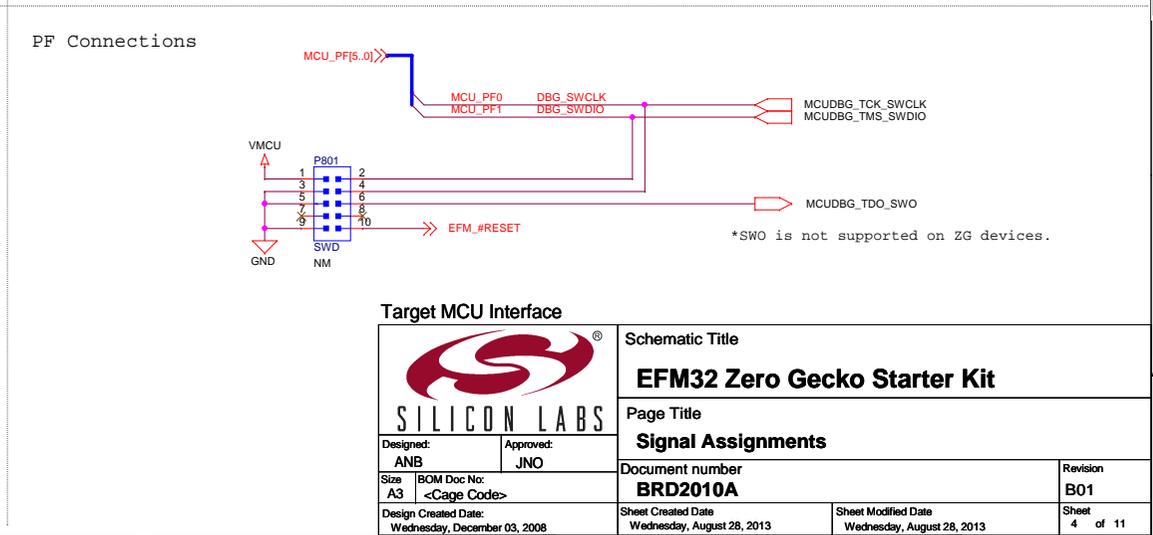
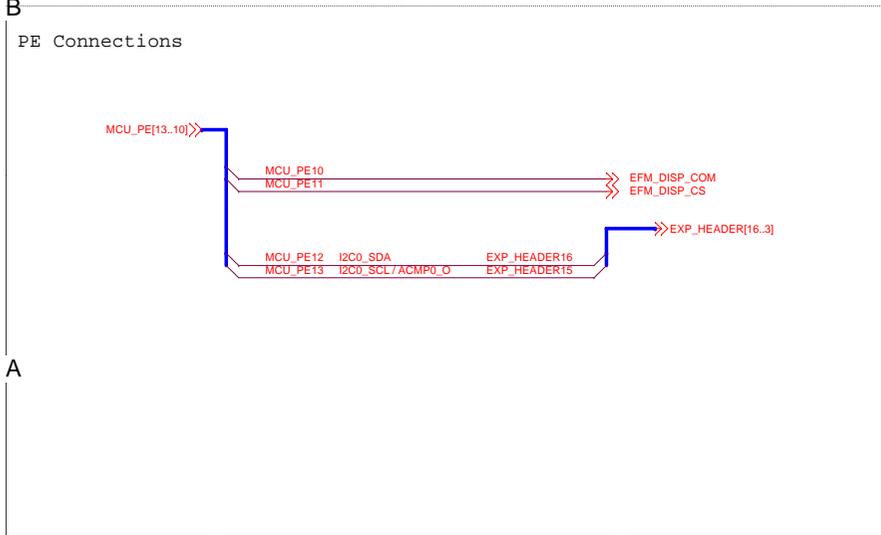
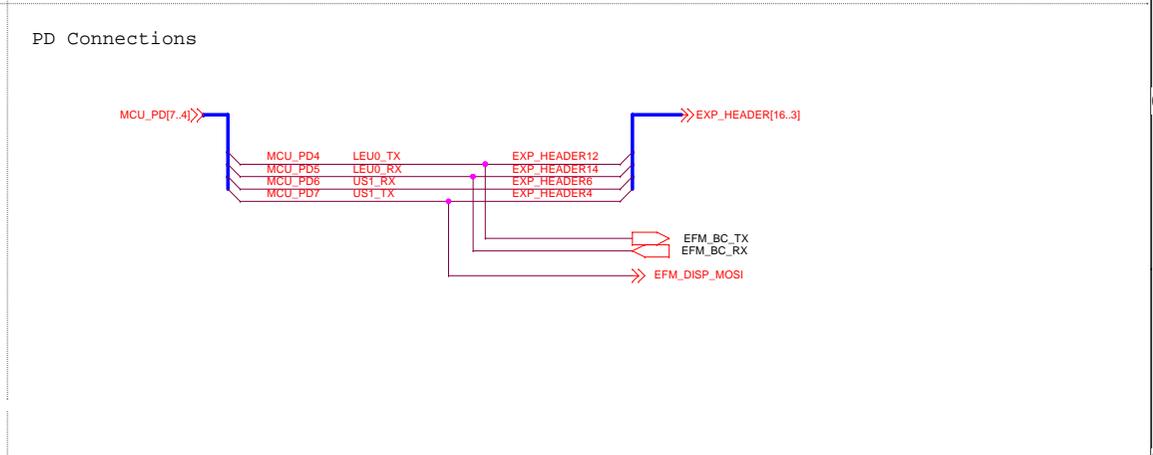
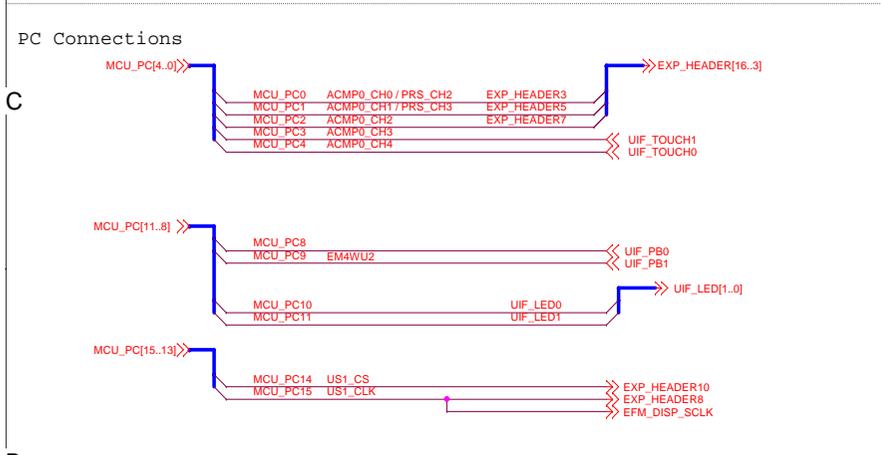
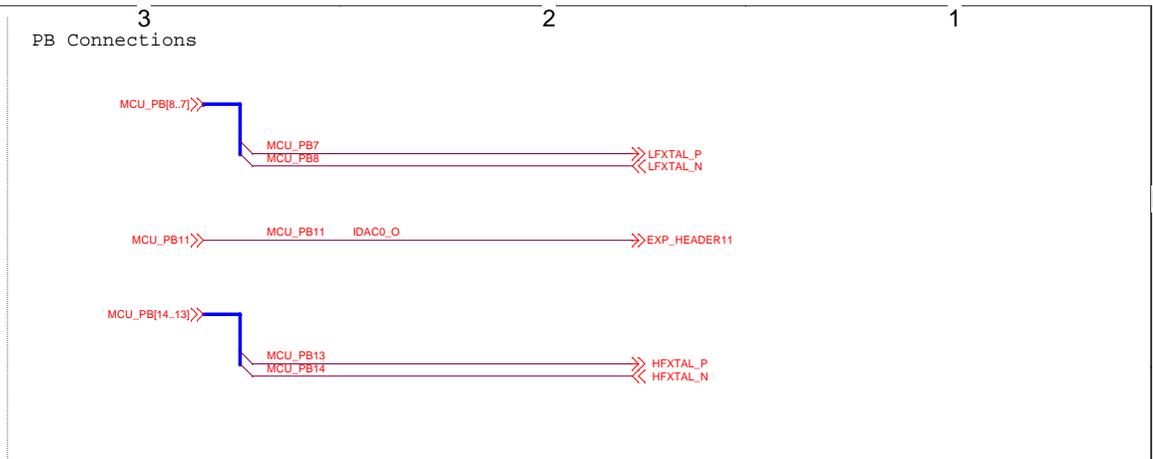
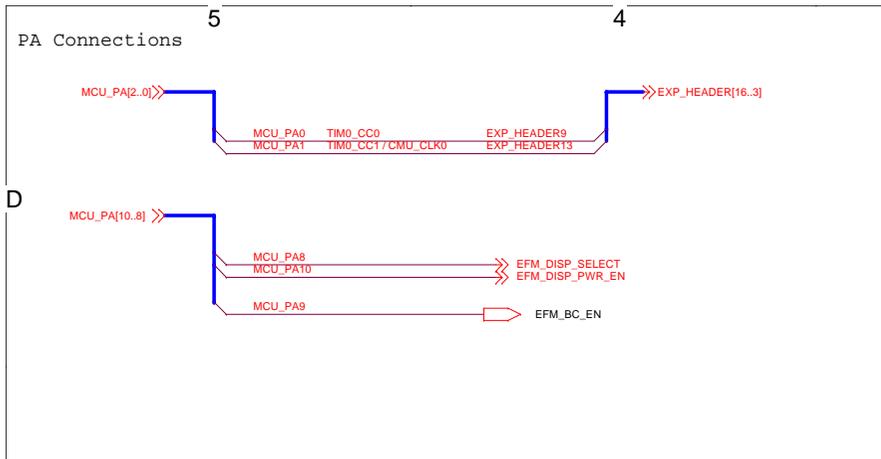


User LEDs

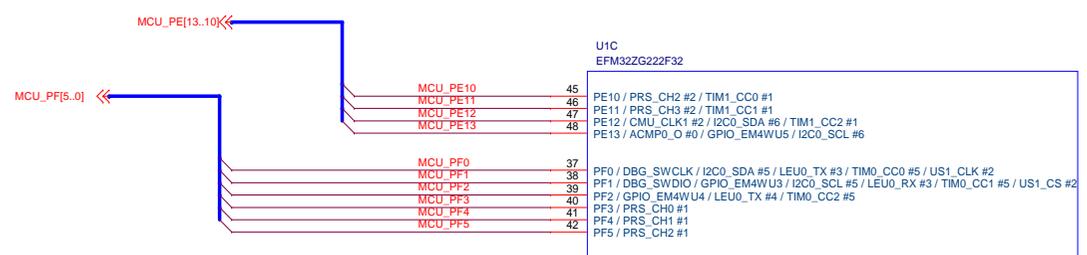
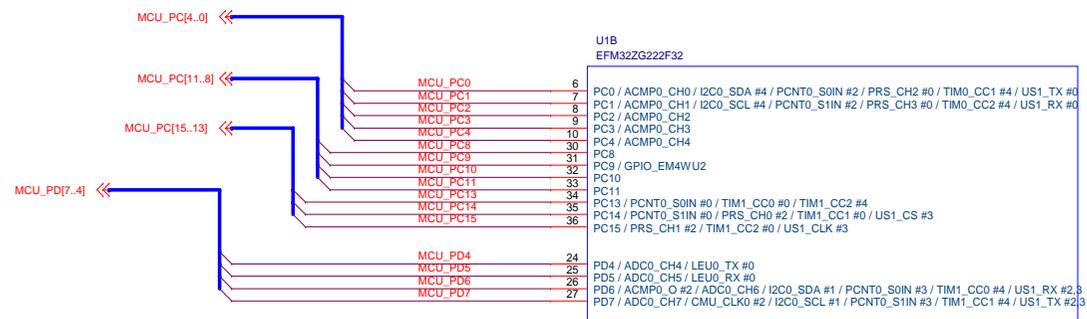
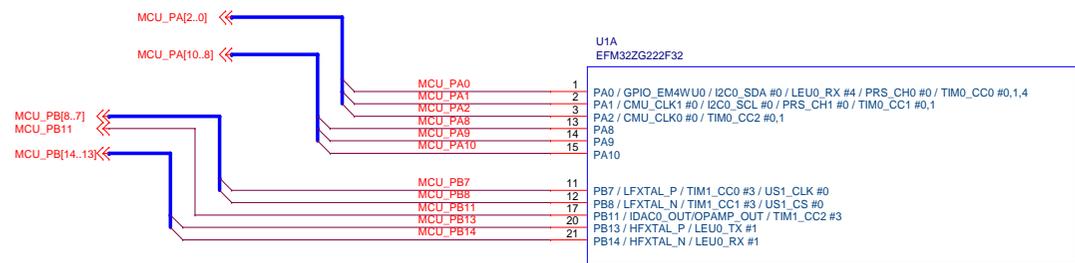


Target MCU Interface

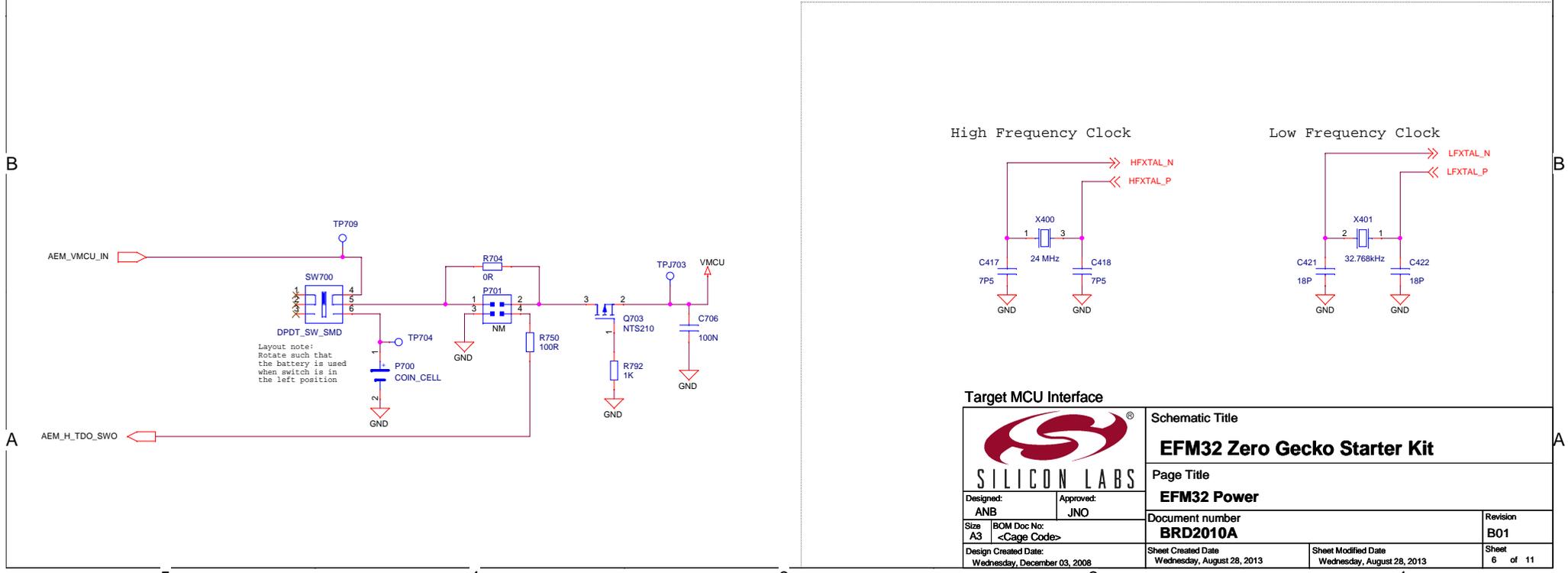
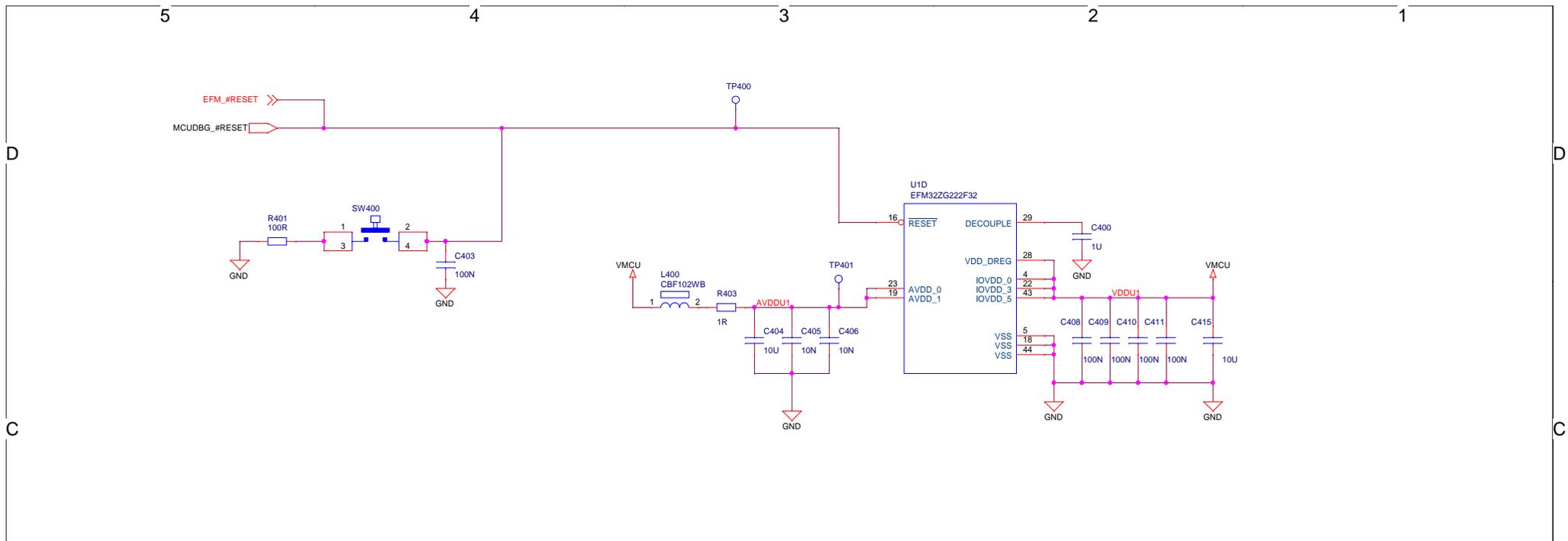
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Size A3	BOM Doc No:	Document number	Revision
		BRD2010A	B01
Design Created Date:	Sheet Created Date:	Sheet Modified Date:	Sheet
Wednesday, December 03, 2008	Wednesday, August 28, 2013	Wednesday, August 28, 2013	3 of 11



		Schematic Title	
		EFM32 Zero Gecko Starter Kit	
Designed: ANB Size: A3 Design Created Date: Wednesday, December 03, 2008		Page Title	
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Approved: JNO BOM Doc No: <Cage Code>		Document number	Revision
		BRD2010A	B01
Sheet Created Date: Wednesday, August 28, 2013		Sheet Modified Date: Wednesday, August 28, 2013	Sheet 4 of 11



		Schematic Title		
		EFM32 Zero Gecko Starter Kit		
Designed: ANB Approved: JNO		Page Title		
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Size A3	BOM Doc No: <Cage Code>	Document number BRD2010A	Revision B01	
Design Created Date: Wednesday, December 03, 2008	Sheet Created Date Wednesday, August 28, 2013	Sheet Modified Date Wednesday, August 28, 2013	Sheet 5 of 11	



B
A

D

C

A

5

4

3

2

1

R

A

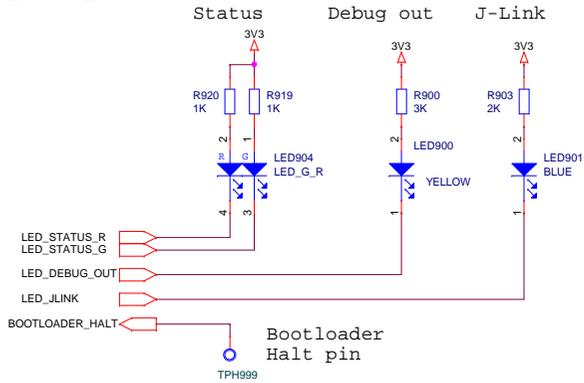
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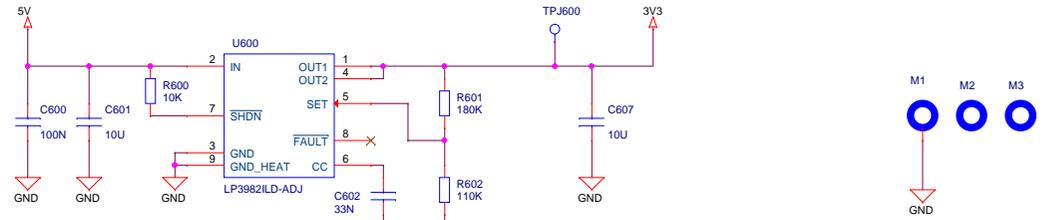
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		Schematic Title	
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Designed: ANB Approved: JNO		Page Title	
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Size A3	BOM Doc No: <Cage Code>	Document number BRD2010A	Revision B01
Design Created Date: Wednesday, December 03, 2008		Sheet Created Date Wednesday, August 28, 2013	Sheet Modified Date Wednesday, August 28, 2013
		Sheet	6 of 11

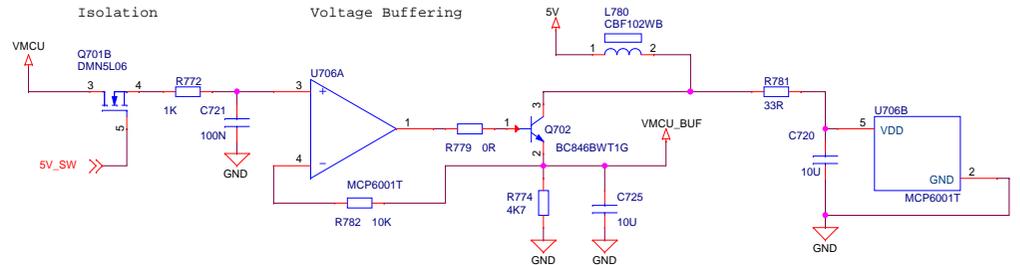
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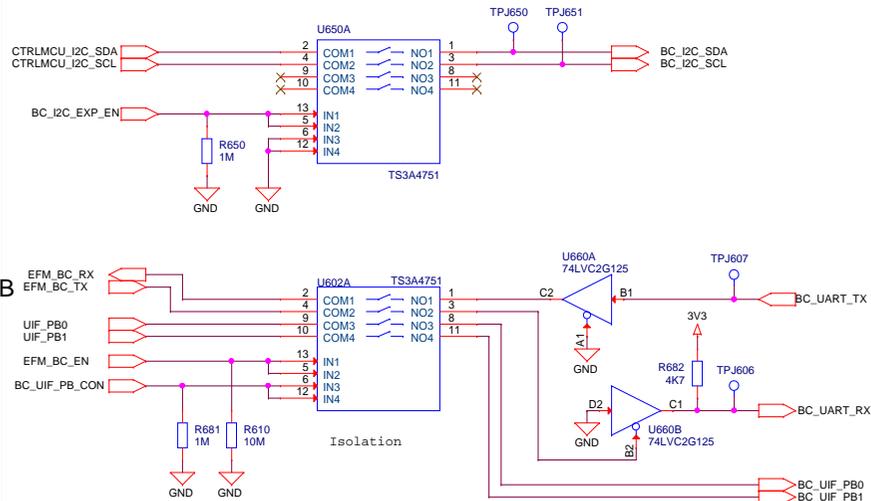
3V3 Regulator



VMCU Voltage Mirror



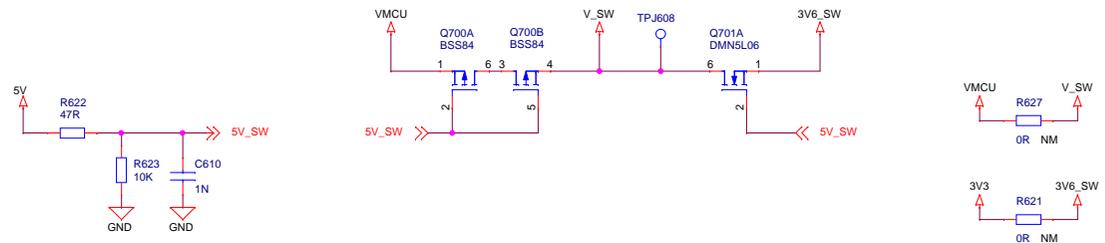
Voltage Domain Isolation & Level Shift



Power Supply for Analog Switches

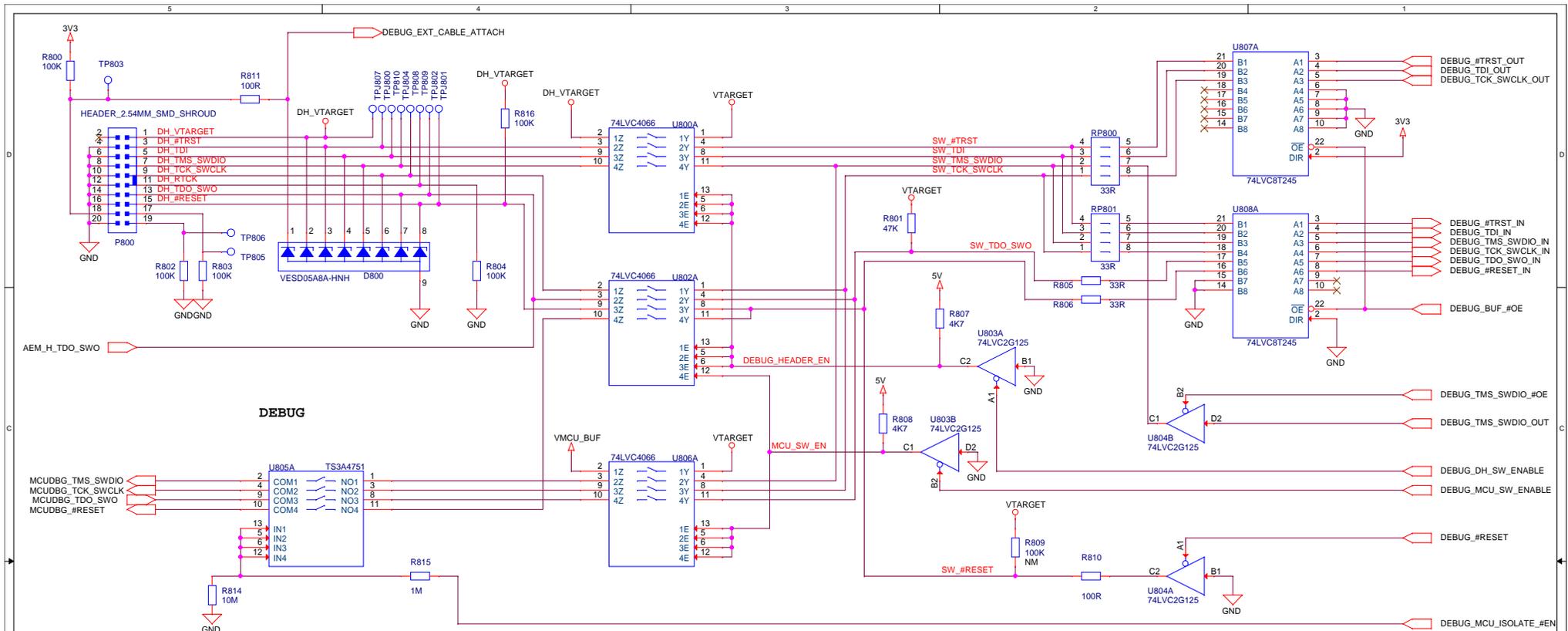
The USB VBUS voltage is used to bias these transistors, turning the P-Channel MOSFETs (Q700) off, and the N-Channel MOSFETs (Q701) on.

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

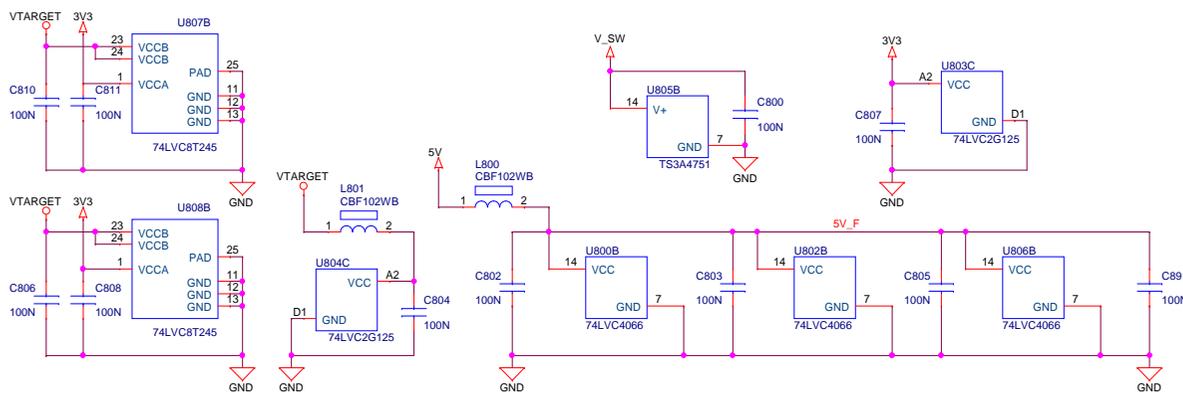


Starter Kit Common

		Schematic Title	
		EFM32 Zero Gecko Starter Kit	
Designed: DDB Approved: JNO		Page Title	
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Size A3 BOM Doc No: <Cage Code>		Document number BRD2010A	
Design Created Date: Wednesday, June 12, 2013		Sheet Created Date Tuesday, June 18, 2013	
		Sheet Modified Date Friday, January 10, 2014	
		Revision B01	
		Sheet 7 of 11	



Power & Decoupling



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**

Schematic Title
EFM32 Zero Gecko Starter Kit

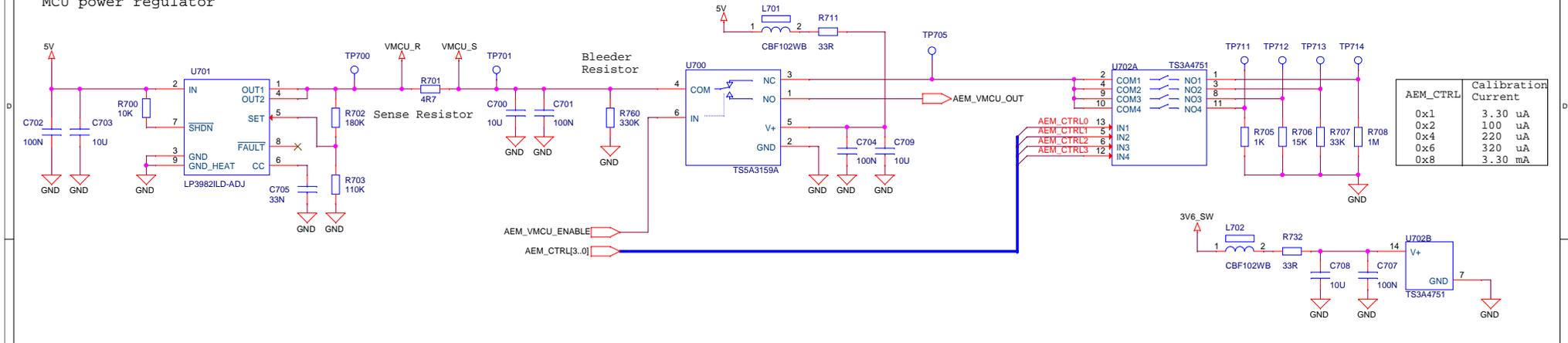
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Debug Interface

Document number
BRD2010A

Revision
B01

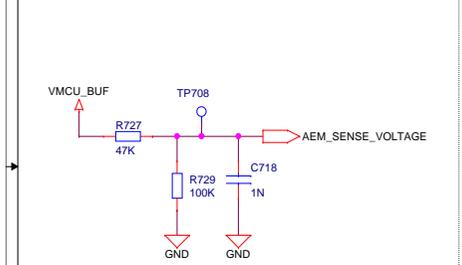
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MCU power regulator

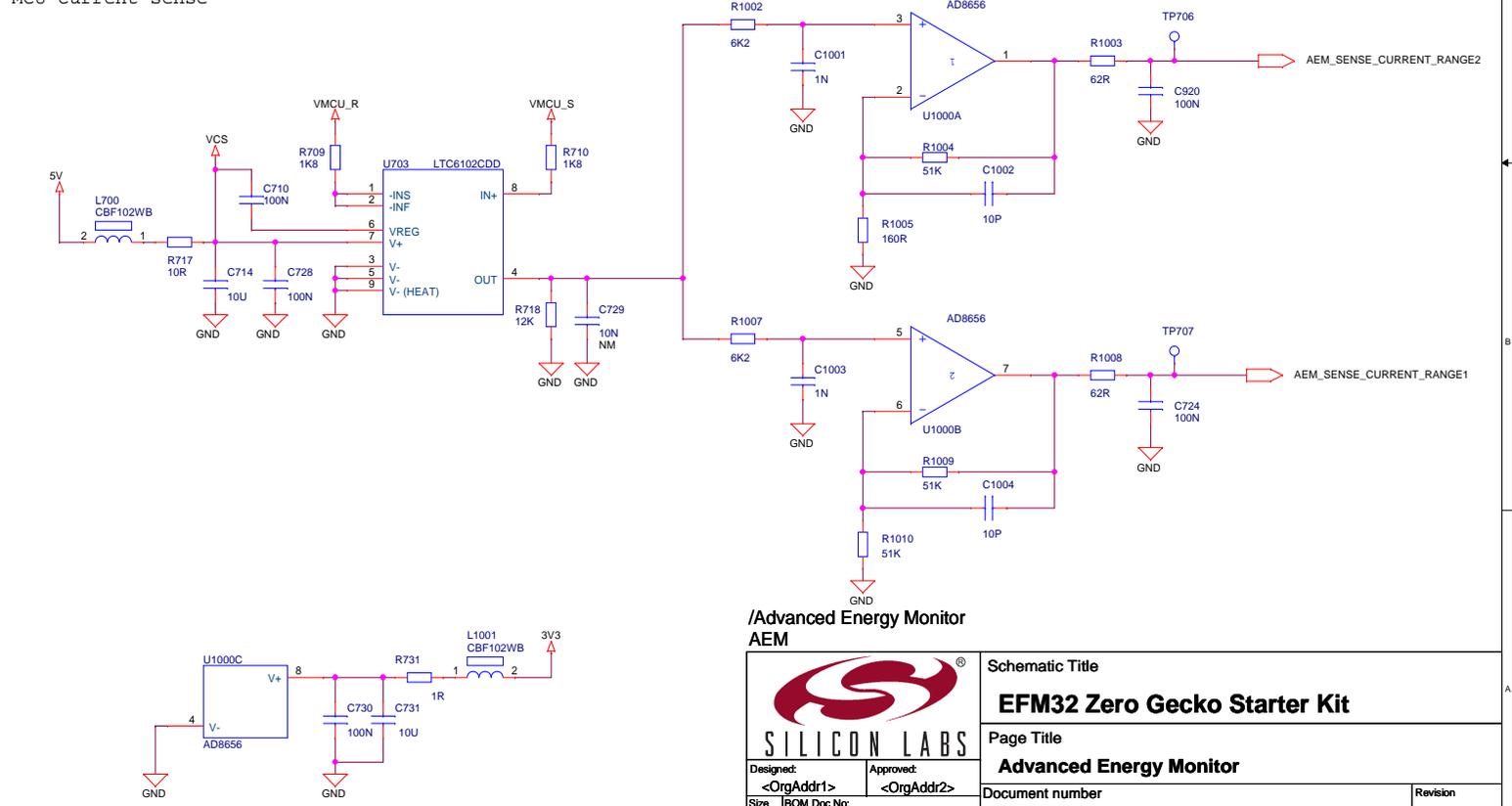


AEM_CTRL	Calibration Current
0x1	3.30 uA
0x2	100 uA
0x4	220 uA
0x6	320 uA
0x8	3.30 mA

MCU Voltage Sense

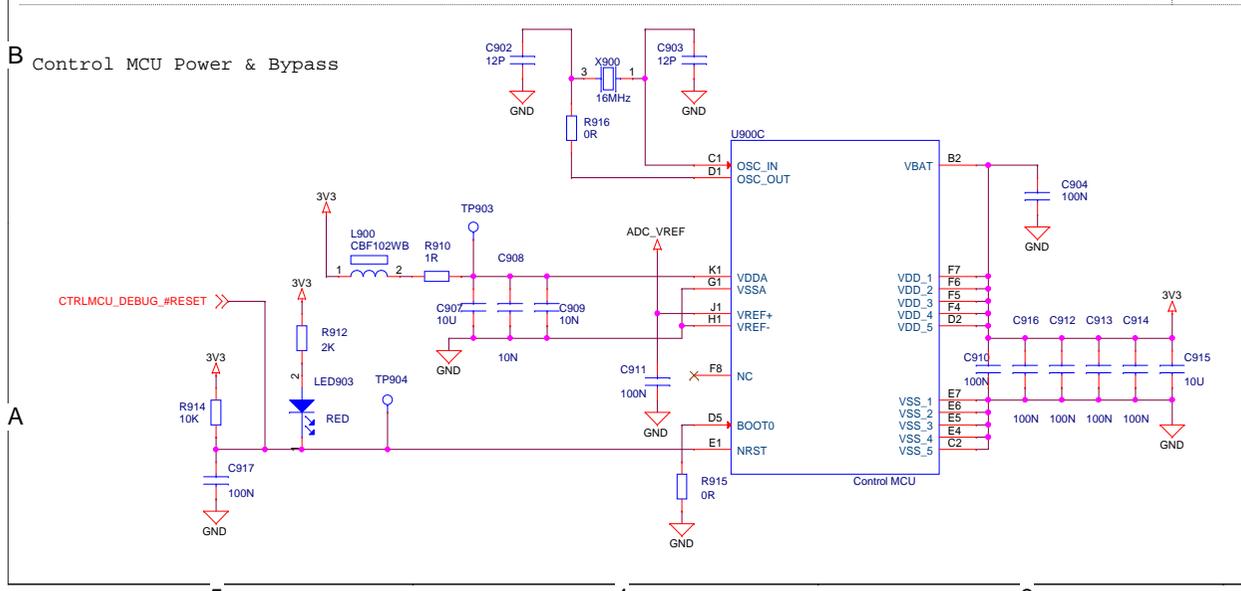
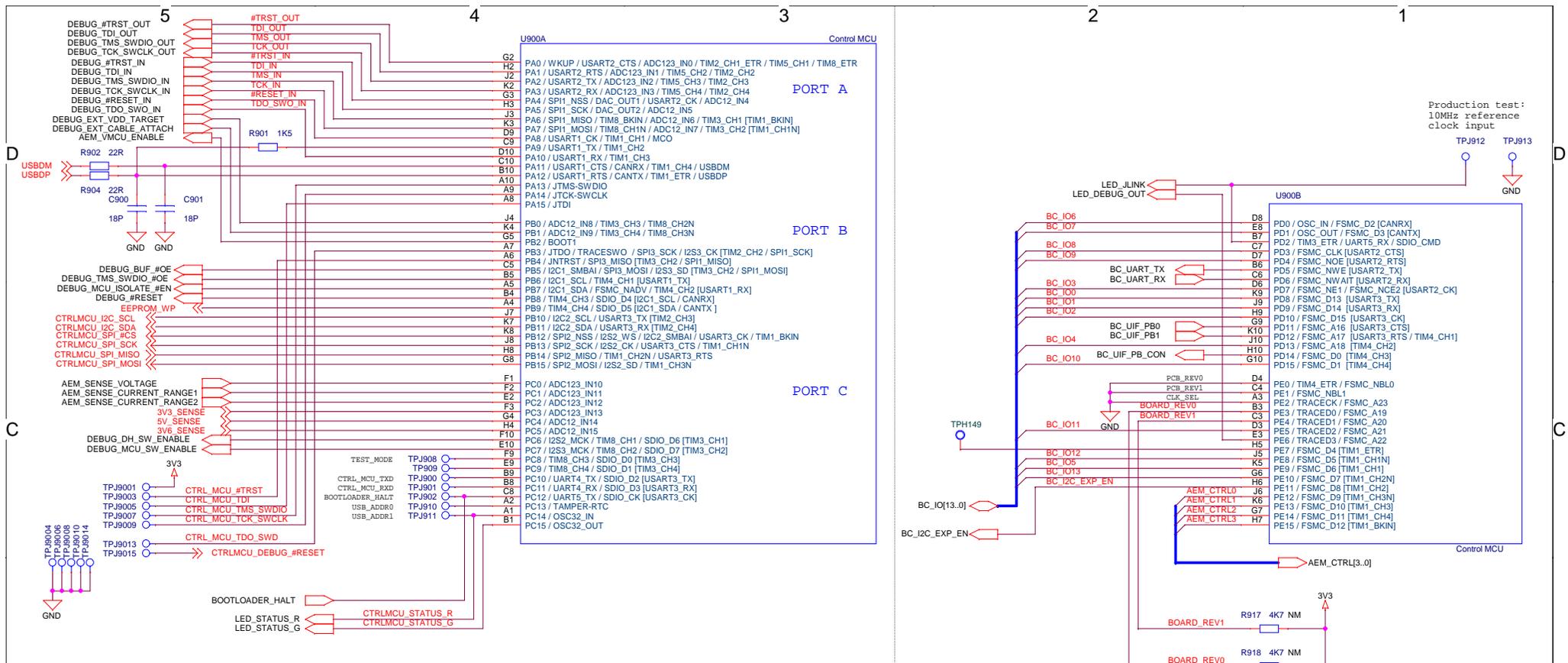


MCU current sense



/Advanced Energy Monitor
AEM

	Schematic Title	
	EFM32 Zero Gecko Starter Kit	
Designed: <OrgAddr1> Size A3	Page Title	
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BOM Doc No: <Cage Code>	Document number	Revision
	BRD2010A	B01
Design Created Date: Friday, August 09, 2013	Sheet Created Date: Friday, August 09, 2013	Sheet Modified Date: Friday, August 09, 2013
		Sheet 9 of 11



/Board Controller BOARD CONTROLLER

Schematic Title
EFM32 Zero Gecko Starter Kit

Page Title
Control MCU

Designed: ANB **Approved:** JNO

Size: A3 **BOM Doc No:** <Cage Code>

Document number
BRD2010A

Design Created Date: Wednesday, June 12, 2013

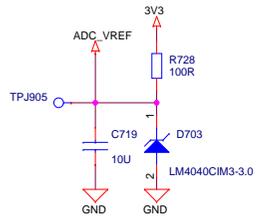
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Sheet Modified Date
Wednesday, August 28, 2013

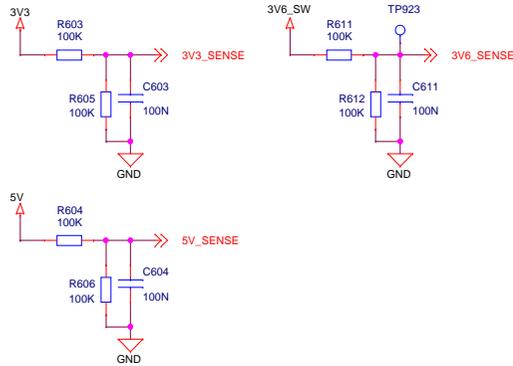
Revision
B01

Sheet 10 of 11

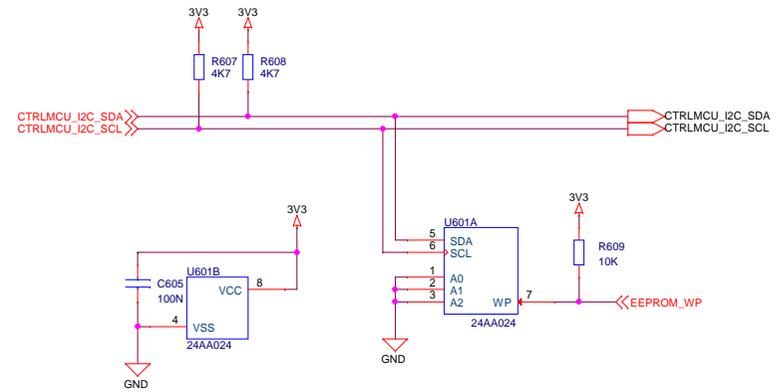
ADC reference voltage



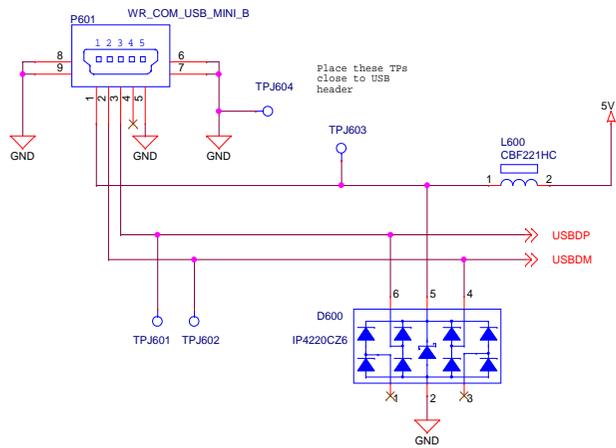
POWER SENSE



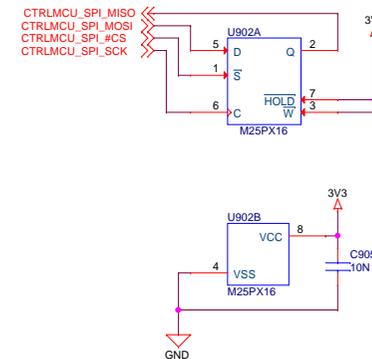
CTRLMCU EEPROM



J-Link USB Port



CTRLMCU SERIAL FLASH



/Board Controller
BOARD CONTROLLER

		Schematic Title	
		EFM32 Zero Gecko Starter Kit	
Designed: ANB Approved: JNO		Page Title	
		Board Controller Misc	
Size A3	BOM Doc No: <Cage Code>	Document number BRD2010A	Revision B01
Design Created Date: Wednesday, June 12, 2013	Sheet Created Date Wednesday, June 12, 2013	Sheet Modified Date Wednesday, August 28, 2013	Sheet 11 of 11