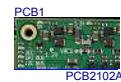




EFM32 Tiny Gecko 11 STK	
Board Function	Page
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User Interface	2
EFM32 Signal Assignments	3
EFM32 Power	4
EFM32 I/O	5
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Debug Interface	8
Power & Misc	9
Board Controller MCU	10
Board Controller Misc	11

Revision History	
Rev.	Description
PA00	Initial release.

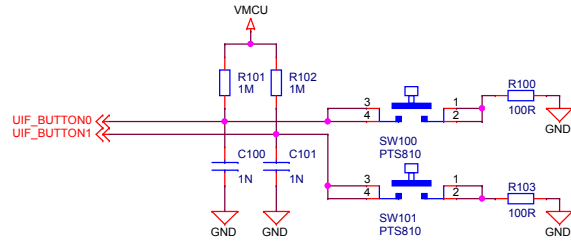
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/
BRD2102A

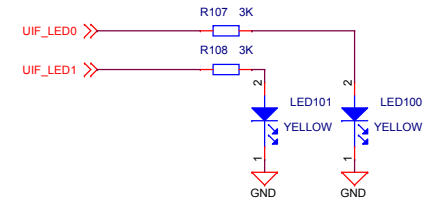
 SILICON LABS		Schematic Title	
		EFM32 Tiny Gecko 11 Starter Kit	
Designed: HEL		Approved: JNO	
Size: A3	BOM Doc No: <Cage Code>	Page Title	
Design Created Date: Tuesday, December 06, 2016		Document number	Revision
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		Sheet Created Date	Sheet Modified Date
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User Pushbuttons

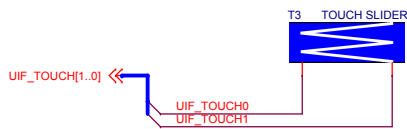


User LEDs

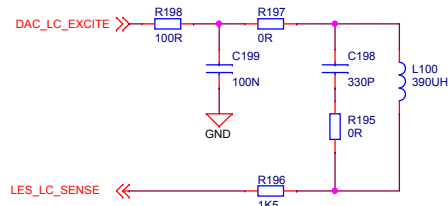
User LEDs



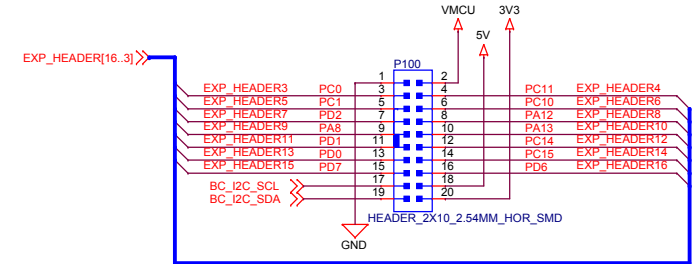
Touch Pads



LESENSE LC-Sensor



EXP Header

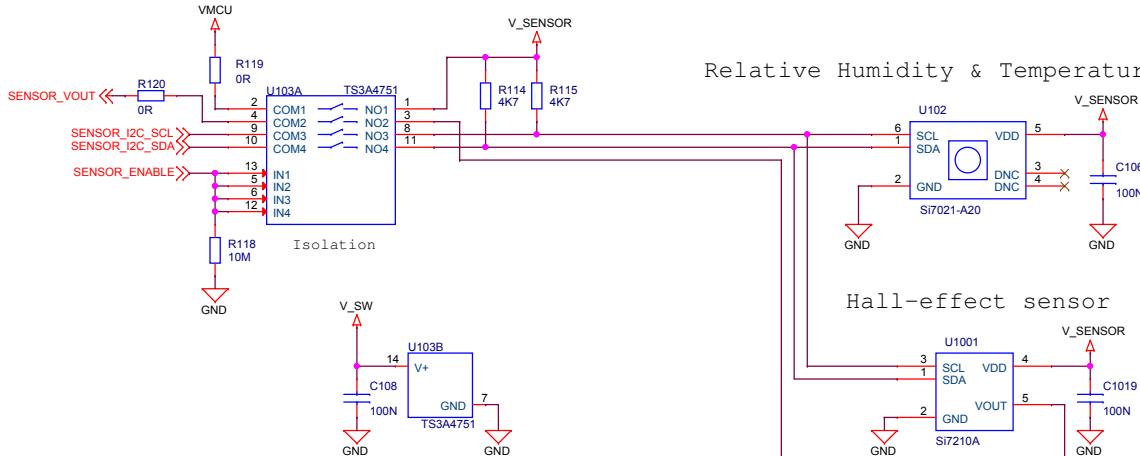


EXP-Header Functionality

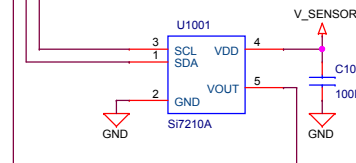
1	GND		
3	PC0	CAN0_RX #0	PCNT0_S0IN #2
5	PC1	CAN0_TX #0	PCNT0_S1IN #2
7	PD2		
9	PA8	VDAC0_OUT1ALT #4	
11	PD1		
13	PD0		
15	PD7	I2C0_SCL #1	
17		Reserved for EXP Board Identification	
19		Reserved for EXP Board Identification	

2	VMCU		
4	PC11	US0_TX #2	
6	PC10	US0_RX#2	
8	PA12	US0_CLK#5	
10	PA13	US0_CS#5	
12	PC14	LEU0_TX #2	
14	PC15	LEU0_RX #2	
16	PD6	I2C0_SDA #1	
18	5V		
20	3V3		

Relative Humidity & Temperature Sensor



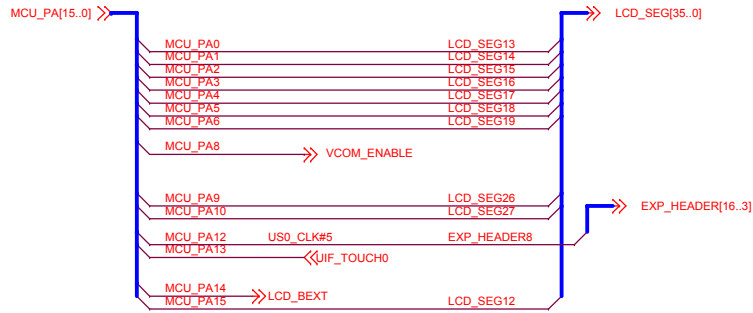
Hall-effect sensor



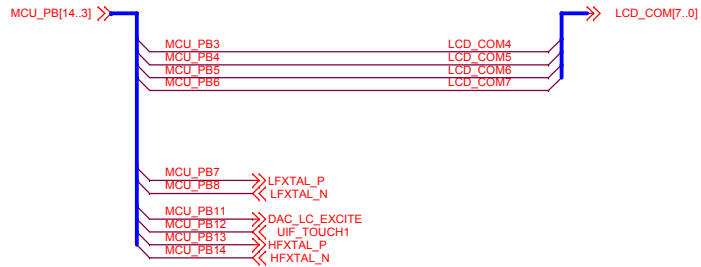
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Designed: HEL Approved: JNO		Page Title	
		User Interfaces	
Size A3	BOM Doc No: <Cage Code>	Document number BRD2102A	Revision A02
Design Created Date: Tuesday, December 06, 2016		Sheet Created Date Tuesday, December 06, 2016	Sheet Modified Date Friday, May 19, 2017
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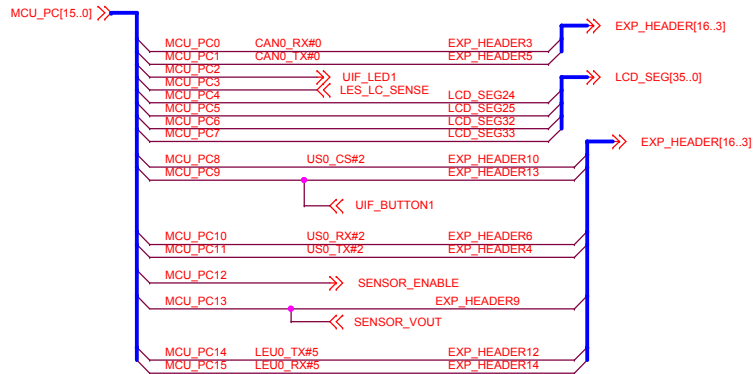
PA Connections



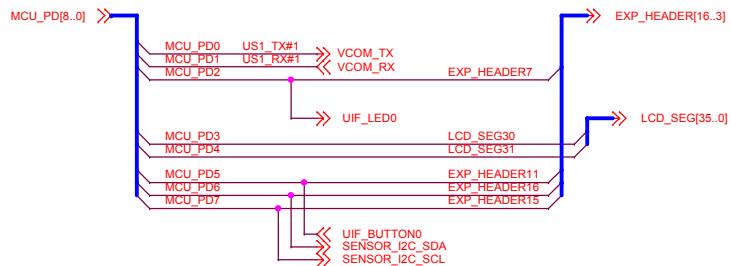
PB Connections



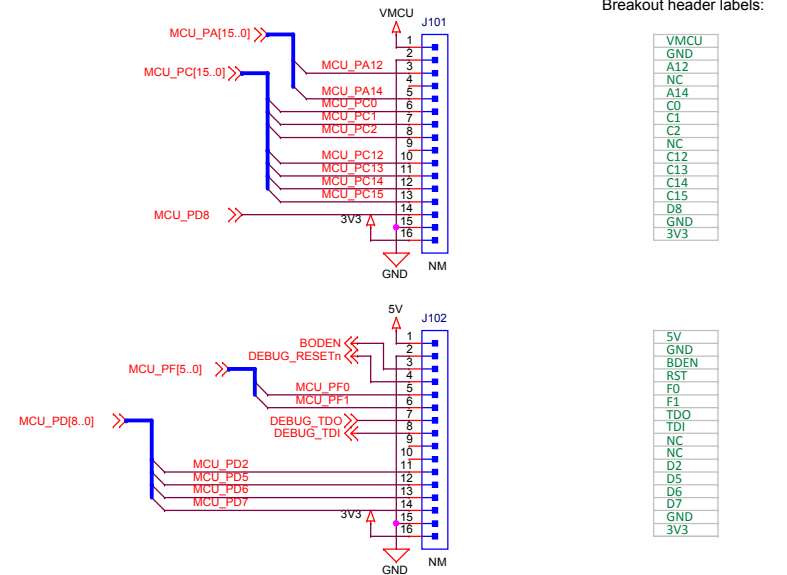
PC Connections



PD Connections



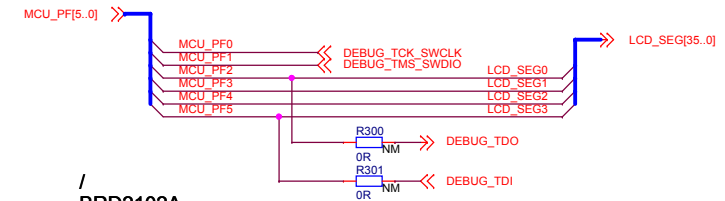
Breakout Connections



PE Connections



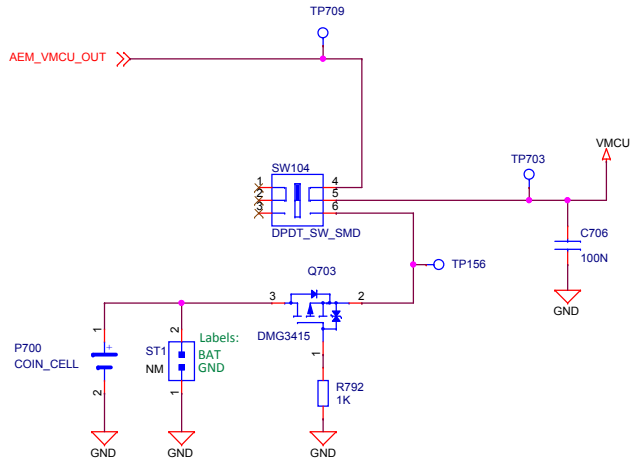
PF Connections



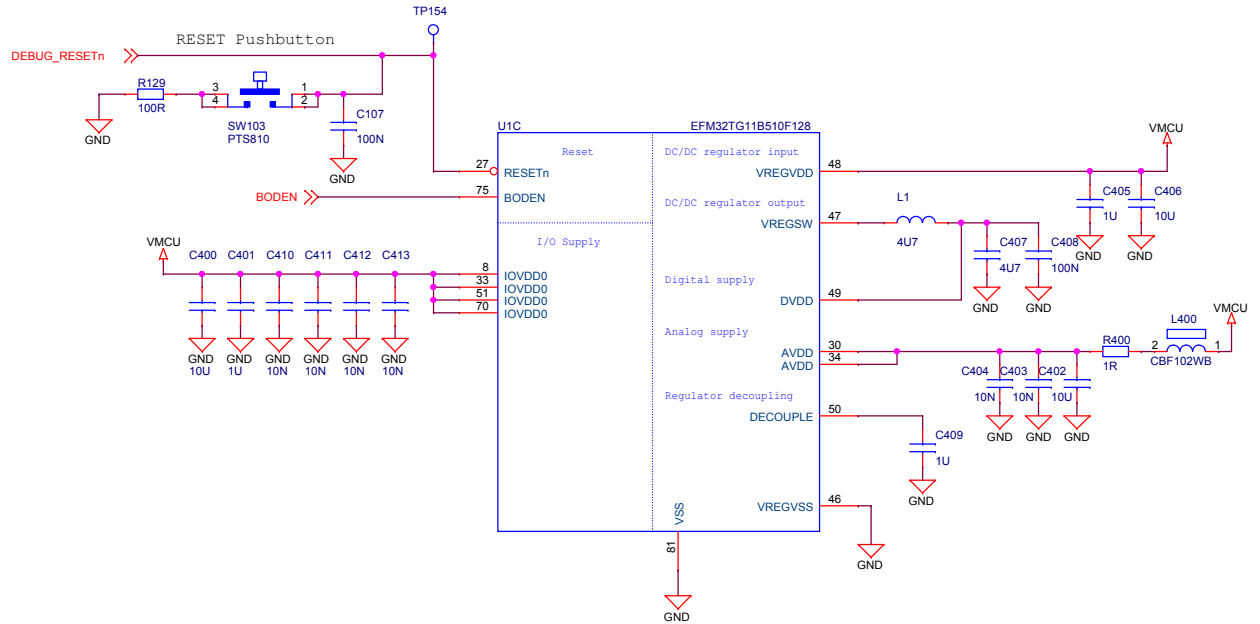
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<p>SILICON LABS</p>		Schematic Title	
		EFM32 Tiny Gecko 11 Starter Kit	
Designed: HEL		Approved: JNO	
Page Title		Signal Assignments	
Size A3		Document number	
BOM Doc No: <Cage Code>		BRD2102A	
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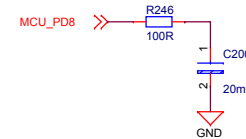
Power Select Switch: AEM/BAT




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

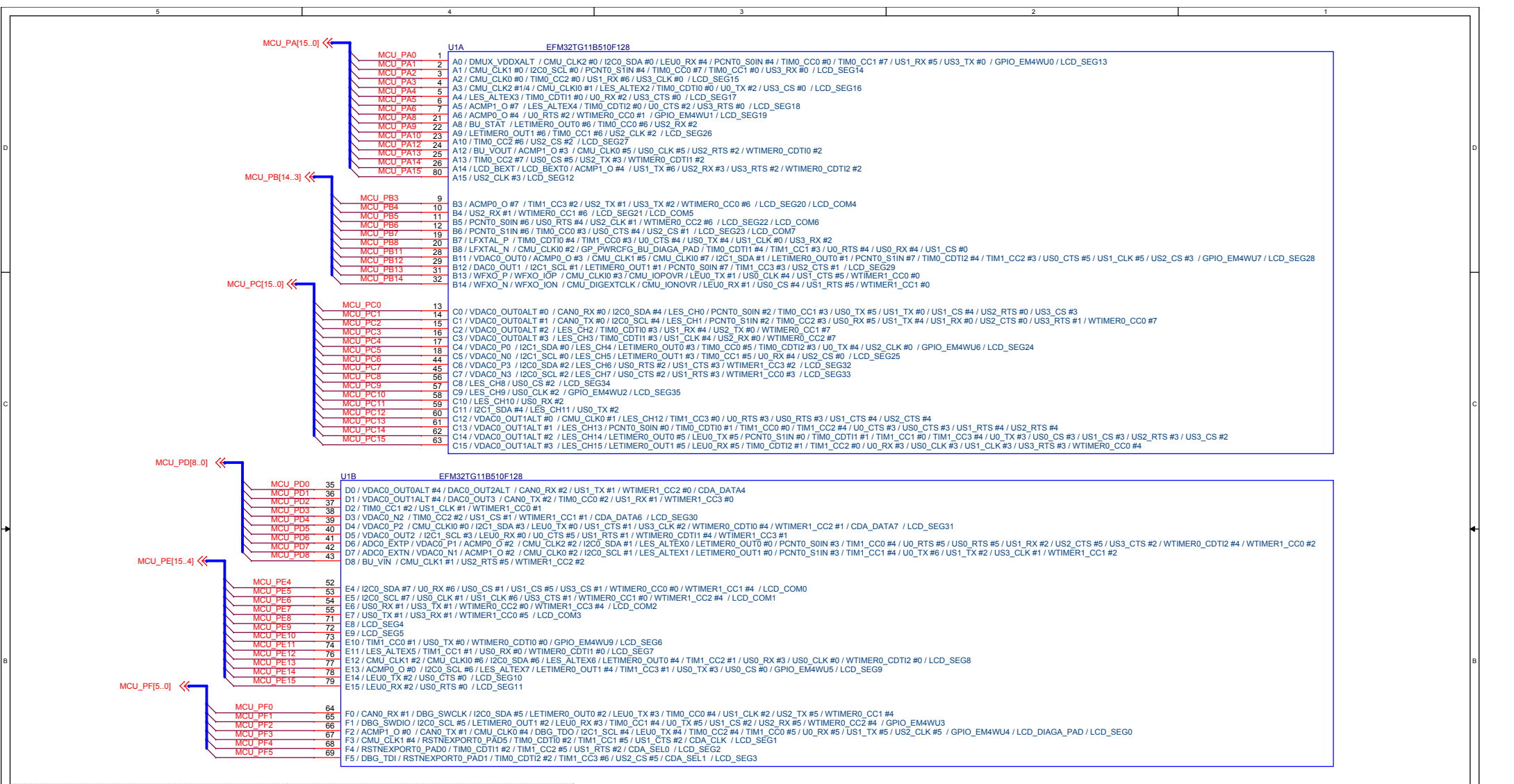


Capacitor for Backup Power Domain



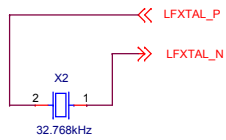
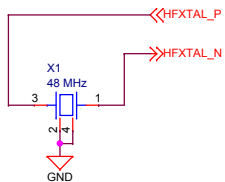
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Designed: HEL		Approved: JNO	
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EFM32 Power		BRD2102A	
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High Frequency Clock

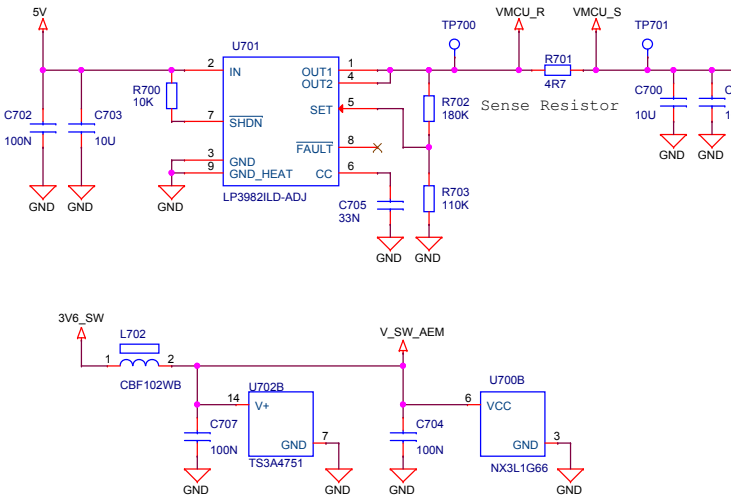
Low Frequency Clock



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		EFM32 I/O	
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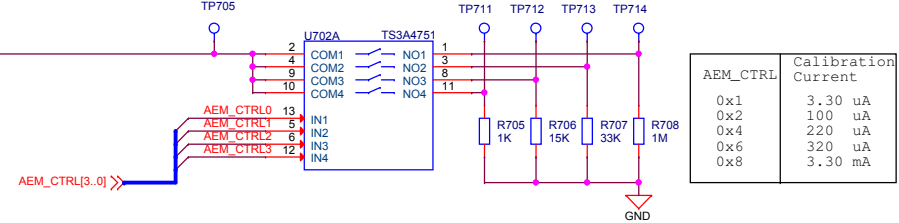
MCU power regulator



Isolation switch

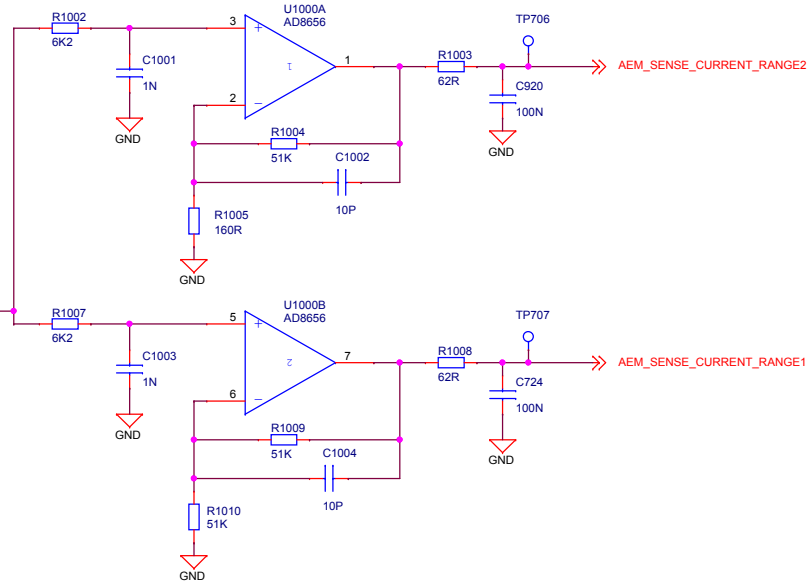
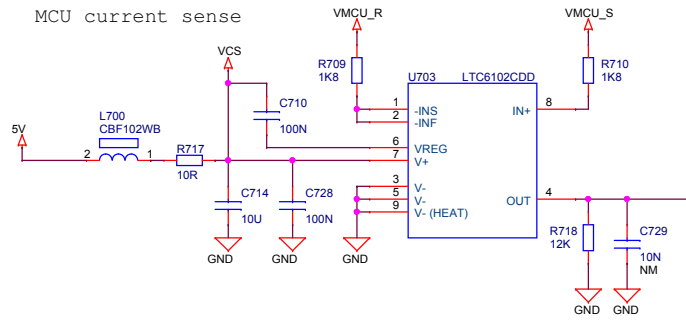
This goes to the slide switch, where it can be selected as the power source.

AEM Calibration

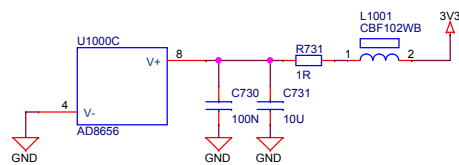
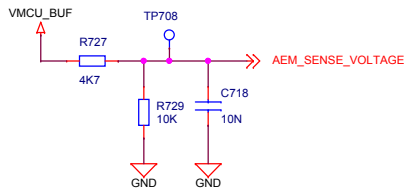


AEM_CTRL	Calibration Current
0x1	3.30 uA
0x2	100 uA
0x4	220 uA
0x6	320 uA
0x8	3.30 mA

MCU current sense



MCU Voltage Sense



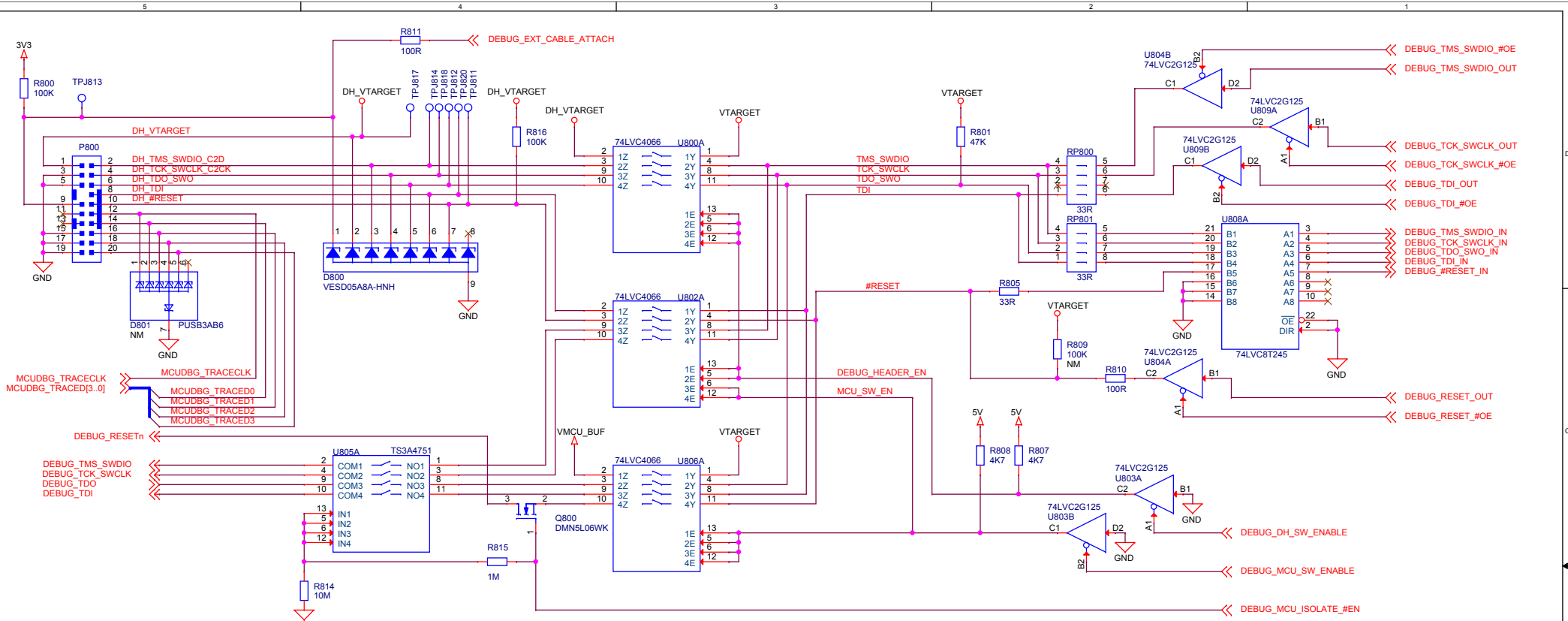
BRD2102A

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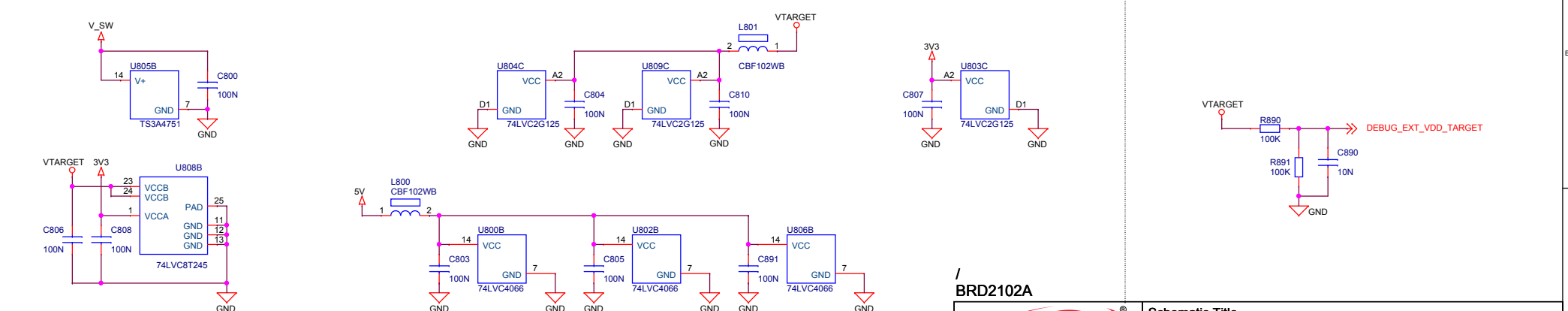
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Approved: JNO
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Power & Decoupling



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	-	-

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Debug Interface

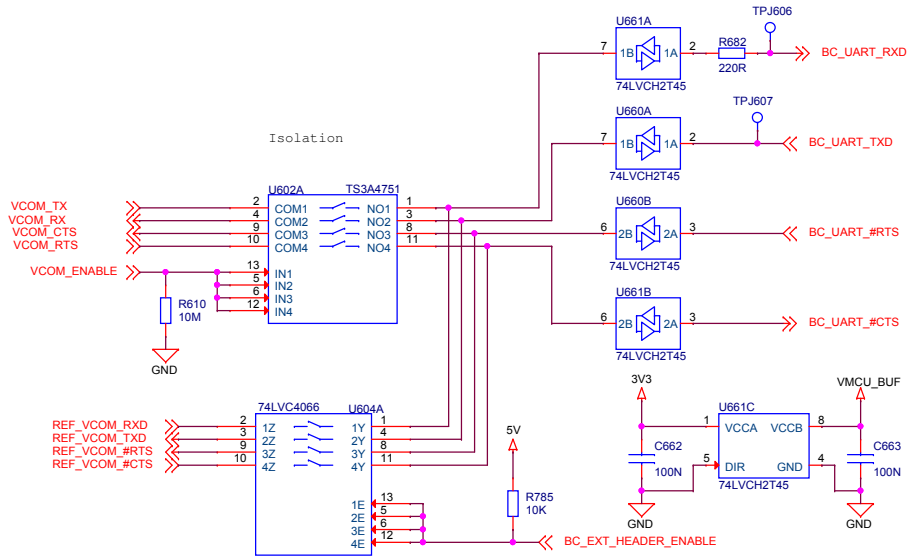
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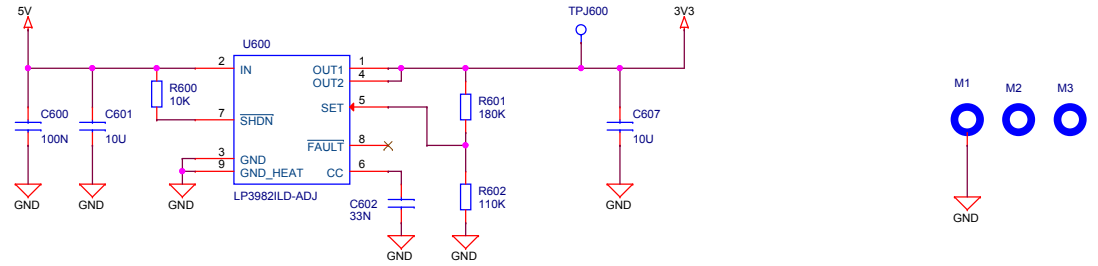
Designed: HEL	Approved: JNO
Size A3	BOM Doc No: <Cage Code>
Design Created Date: Tuesday, December 06, 2016	Sheet Created Date Tuesday, December 06, 2016
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Virtual COM Port Interface

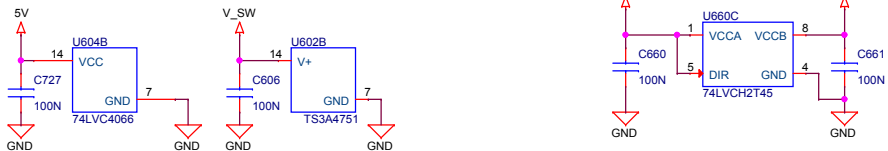
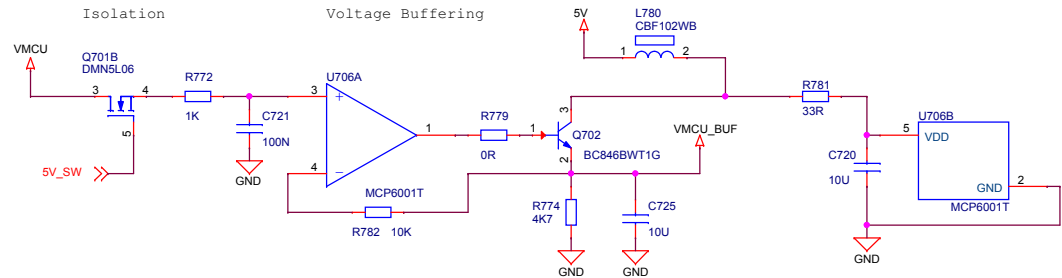
Level Shift



3V3 Regulator



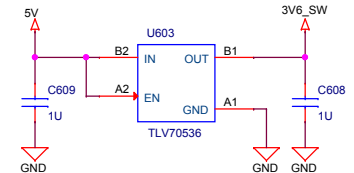
VMCU Voltage Mirror



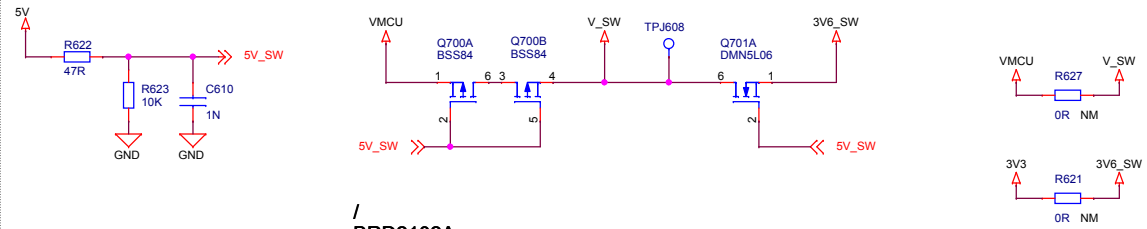
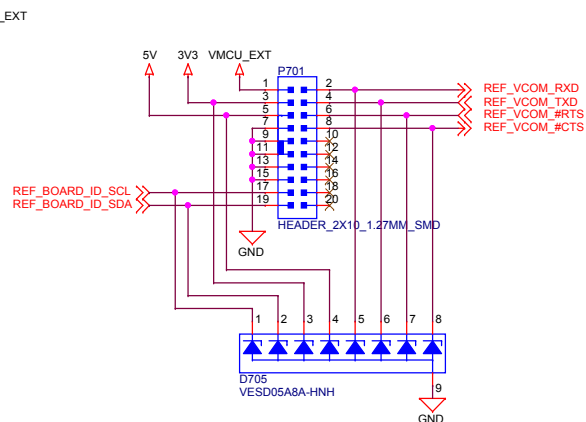
Power Supply for Analog Switches

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



EXTERNAL BOARD



BRD2102A

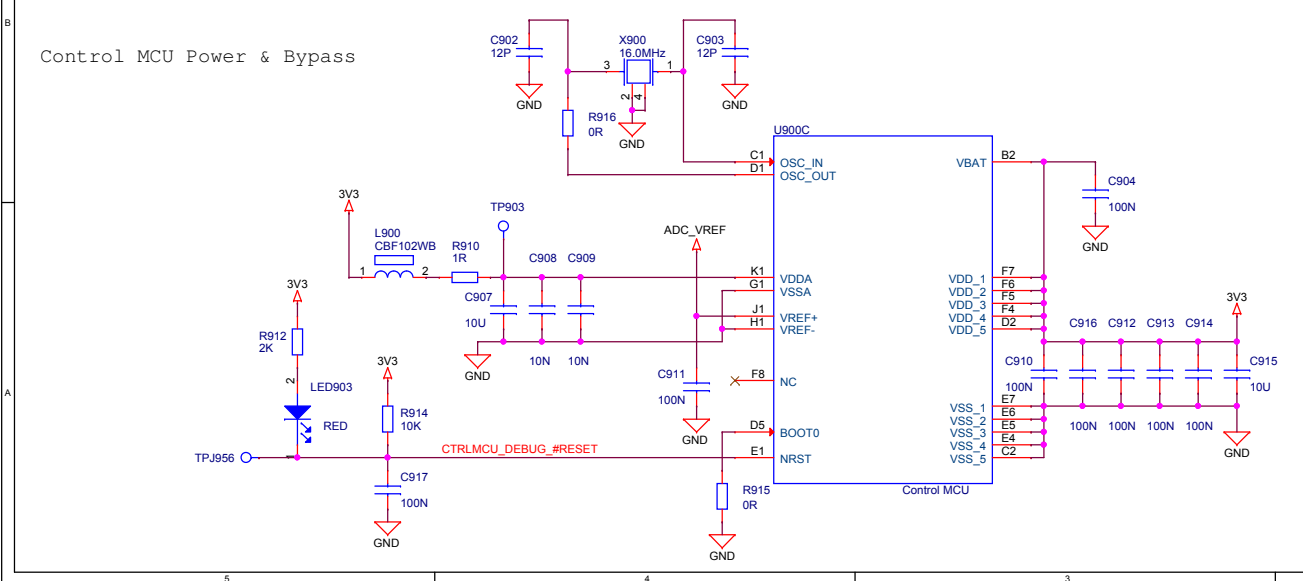
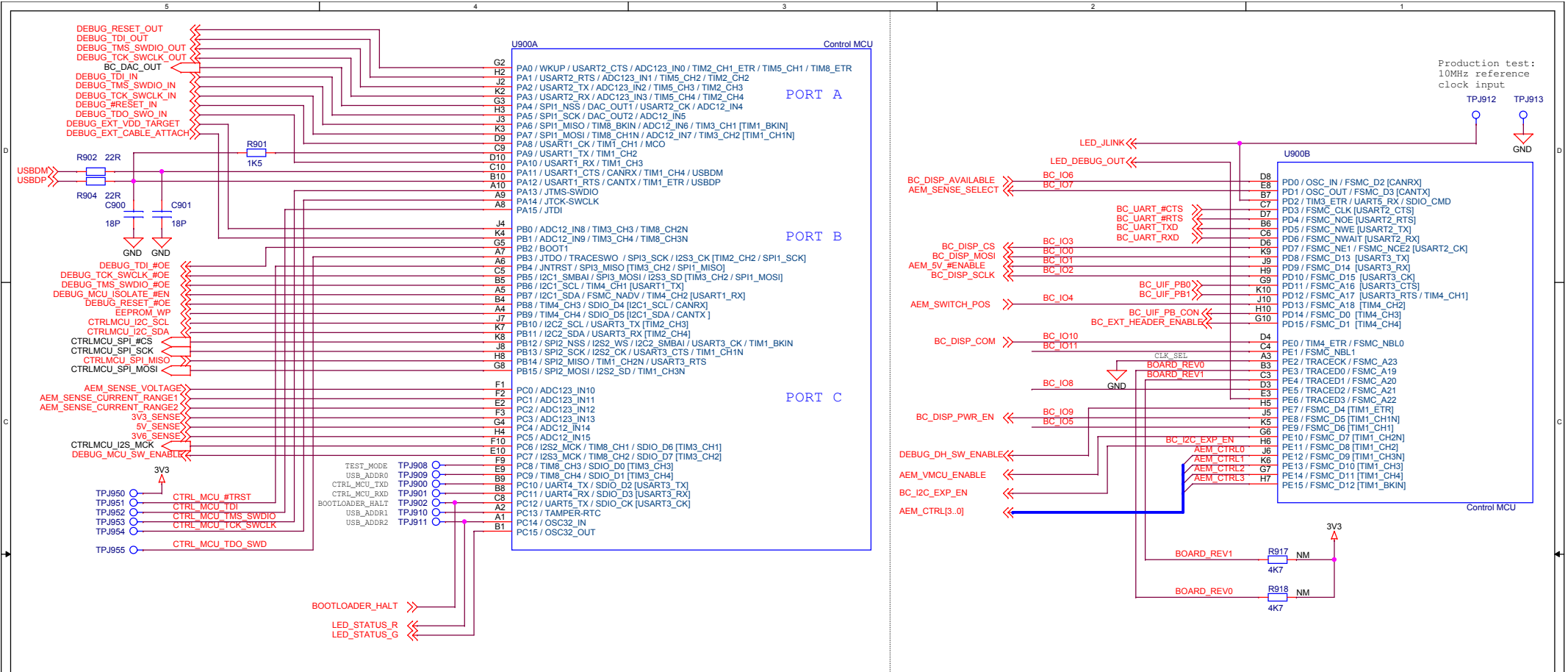


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Schematic Title
EFM32 Tiny Gecko 11 Starter Kit

Page Title
Signal Assignments

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Page Title
Board Controller MCU

Document number
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Revision
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Designed: HEL
Approved: JNO

Size A3
BOM Doc No: <Cage Code>

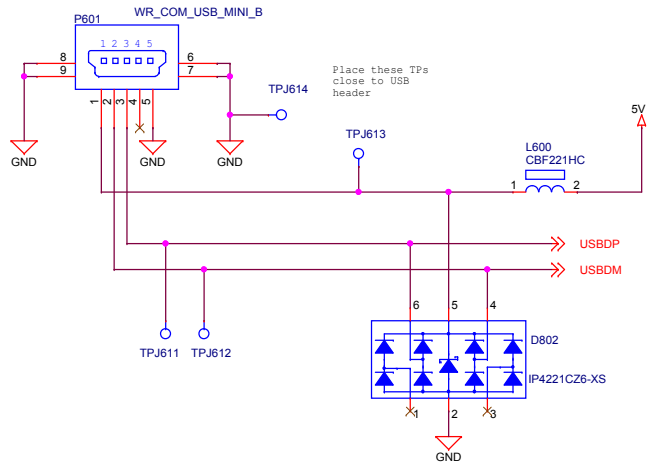
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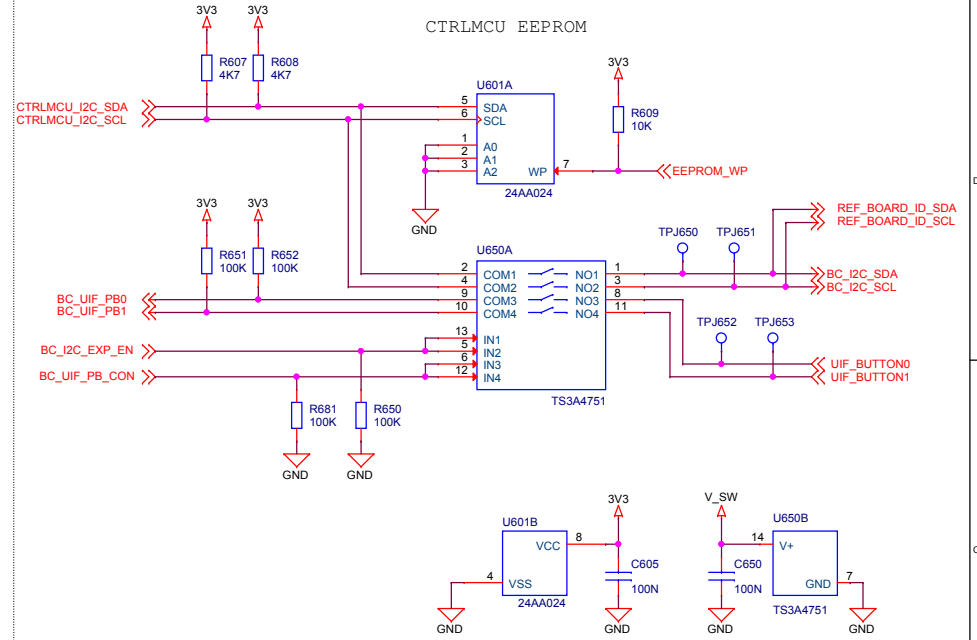
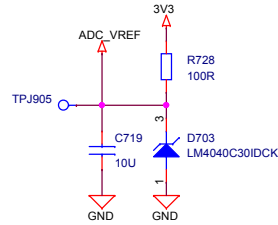
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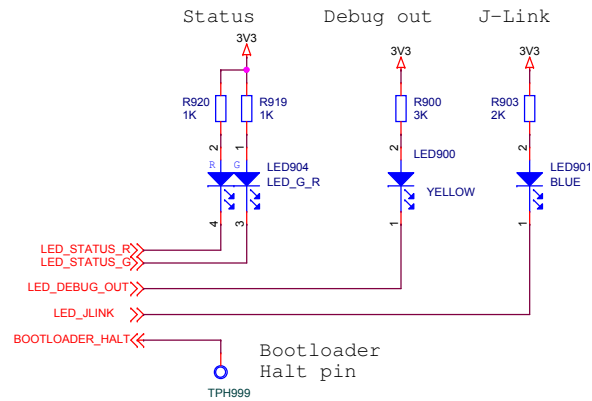
J-Link USB Port



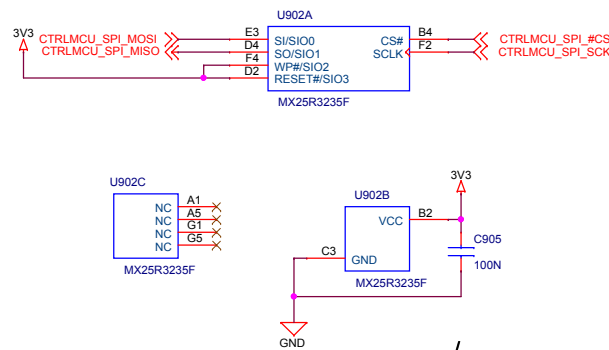
ADC reference voltage



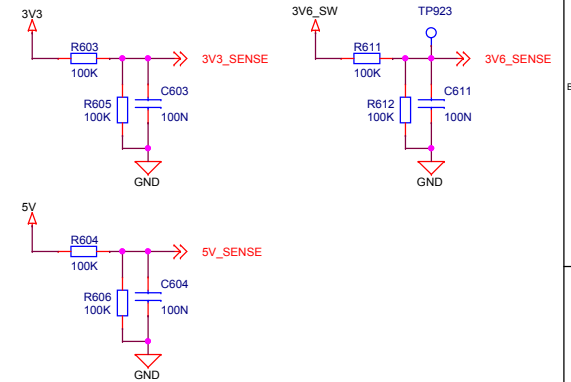
Indicators:



CTRLMCU SERIAL FLASH



POWER SENSE



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