



EFM8SB2 Sleepy Bee STK	
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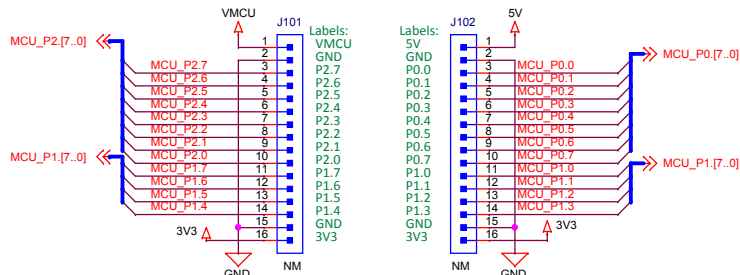
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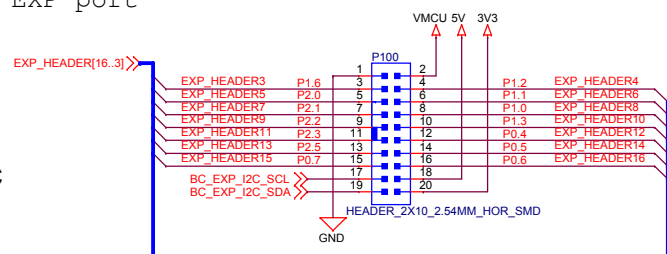
Revision History	
Rev.	Description
A00	Initial release for production.
A01	Removed ST1 and J103 from the BOM.
A02	Updated PCB revision.
A03	Updated EFM8 to Rev B. Un-mounted D801.
A04	Changed joystick to L-KLS7-MT-03

/ STK		Schematic Title	
		EFM8SB2 Sleepy Bee STK	
		Page Title	
		Title Page	
Designed: MRW		Approved: JNO	
Size: A3		BOM Doc No:	
Design Created Date: Wednesday, December 03, 2008		Document number: BRD5100A	
		Revision: A05	
		Sheet Created Date: Thursday, May 15, 2014	
		Sheet Modified Date: Wednesday, October 30, 2019	
		Sheet 1 of 11	

## Breakout Connections



## EXP port



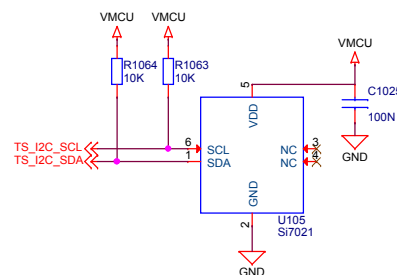
## EXP-Header Functionality

\*\* Indicates potential STK hardware conflicts

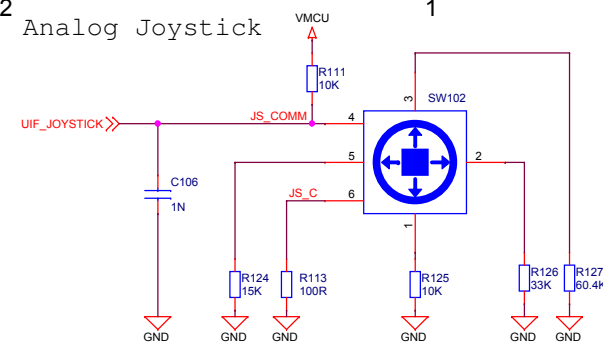
1	GND			
3	P1.6		CMP_P7/ADC0.14	** STK LED0
5	P2.0		CMP_P8/ADC0.16	** STK LED1
7	P2.1		CMP_P9/ADC0.17	** STK LED2
9	P2.2		CMP_P10/ADC0.18	
11	P2.3		CMP_P11/ADC0.19	
13	P2.5		CMP_P12/ADC0.21	
15	P0.7		CMP_P13/ADC0.7	
17			Reserved for EXP Board Identification	
19			Reserved for EXP Board Identification	

2	VMCU			
4	P1.2	SPI0_MOSI	CMP_P5/ADC0.10	
6	P1.1	SPI0_MISO	CMP_P4/ADC0.9	
8	P1.0	SPI0_SCK	CMP_P3/ADC0.8	
10	P1.3	SPI0_NSS	CMP_P2/ADC0.11	
12	P0.4	UART0_TX	CMP_P1/ADC0.4	
14	P0.5	UART0_RX	CMP_P0/ADC0.5	
16	P0.6	I2C0_SDA	CMP_P6/ADC0.6	
18	5V			
20	3V3			

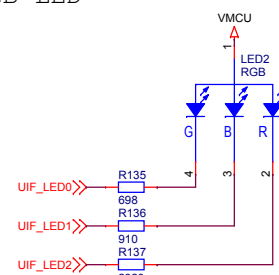
## Temperature & Relative Humidity Sensor



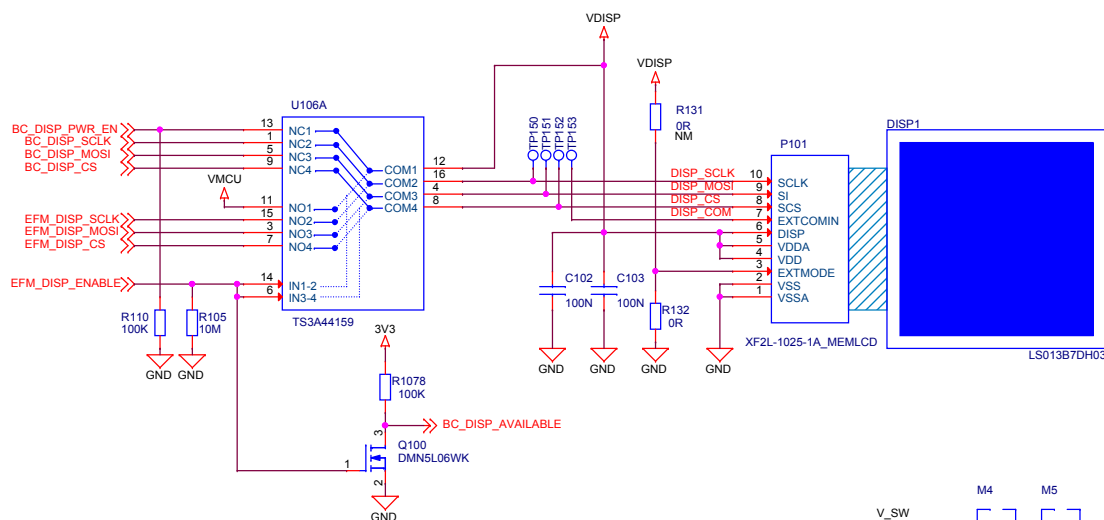
## Analog Joystick



## RGB LED



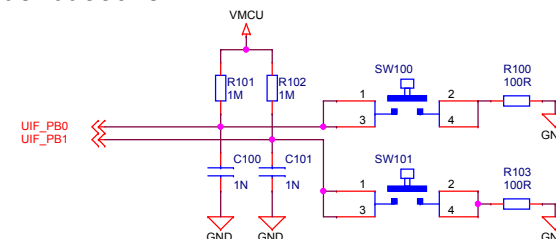
## Memory LCD-TFT Display & Multiplexer



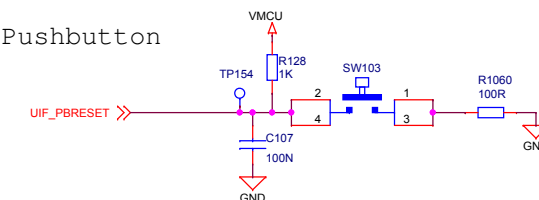
The EFM8 always controls ownership of the display using the EFM\_DISP\_ENABLE signal.

EFM_DISP_ENABLE	DISP_CTRL	VDISP
0	BC	BC_DISP_PWR_EN
1	EFM	VMCU

## User pushbuttons

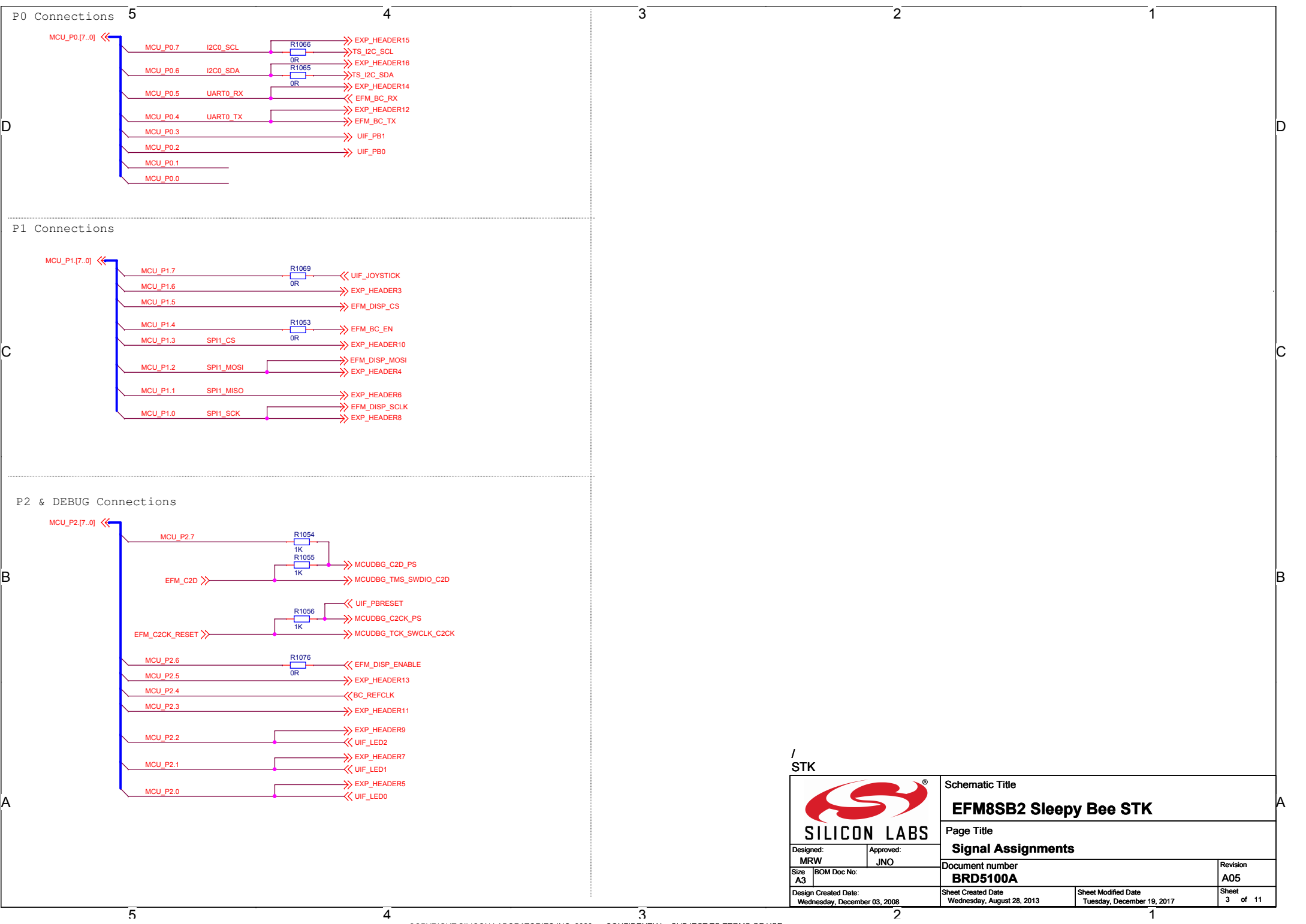



## RESET Pushbutton



/ STK

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		<b>EFM8SB2 Sleepy Bee STK</b>	
Designed: MRW Size: A3 BOM Doc No:		Page Title	
		<b>User Interfaces</b>	
Design Created Date: Wednesday, December 03, 2008		Document number	Revision
		<b>BRD5100A</b>	<b>A05</b>
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Designed: **MRW**

Size: **A3**

Design Created Date: **Wednesday, December 03, 2008**

Approved: **JNO**

BOM Doc No:

Schematic Title

**EFM8SB2 Sleepy Bee STK**

Page Title

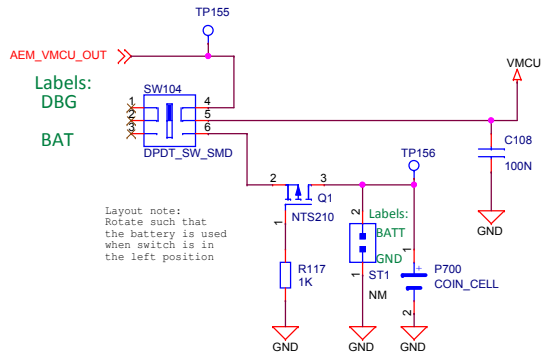
**Signal Assignments**

Document number	Revision
<b>BRD5100A</b>	<b>A05</b>
Sheet Created Date	Sheet Modified Date
<b>Wednesday, August 28, 2013</b>	<b>Tuesday, December 19, 2017</b>
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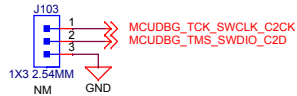
STK

# Power Switch

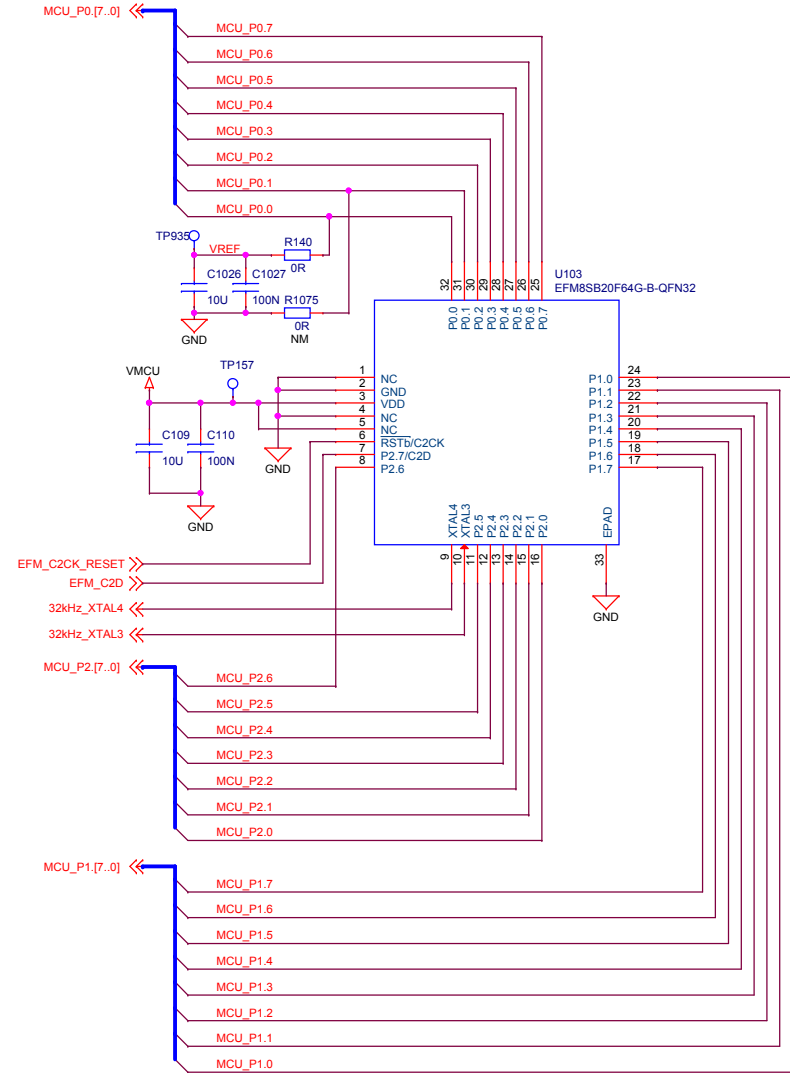
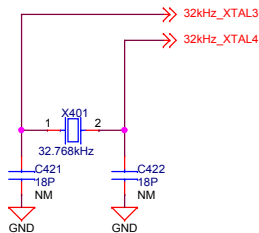
SWITCH POS	MODE DESCRIPTION
DBG	AEM Enabled, VMCU sourced from external 3.3V LDO powered by BC USB 5V supply
BAT	AEM Disabled, VMCU sourced from external coin-cell battery or external power supply



## C2 Debug Header



## Low Frequency Clock

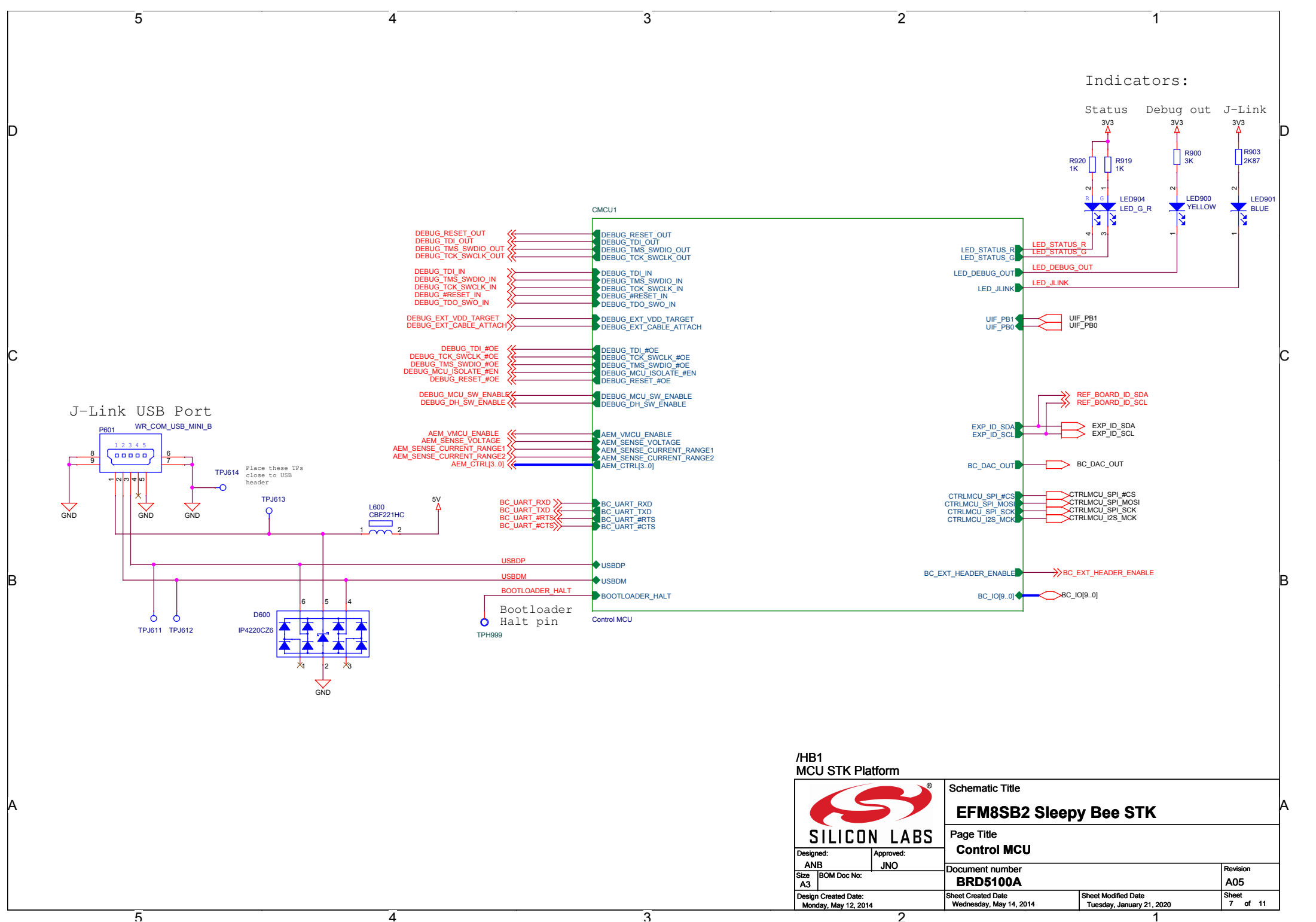


/  
STK


		Schematic Title	
		EFM8SB2 Sleepy Bee STK	
Designed: MRW Size: A3		Page Title	
		EFM8 I/O & Power	
BOM Doc No:		Document number	Revision
Design Created Date:		BRD5100A	A05
Wednesday, December 03, 2008		Sheet Created Date	Sheet Modified Date
		Wednesday, August 28, 2013	Tuesday, December 19, 2017
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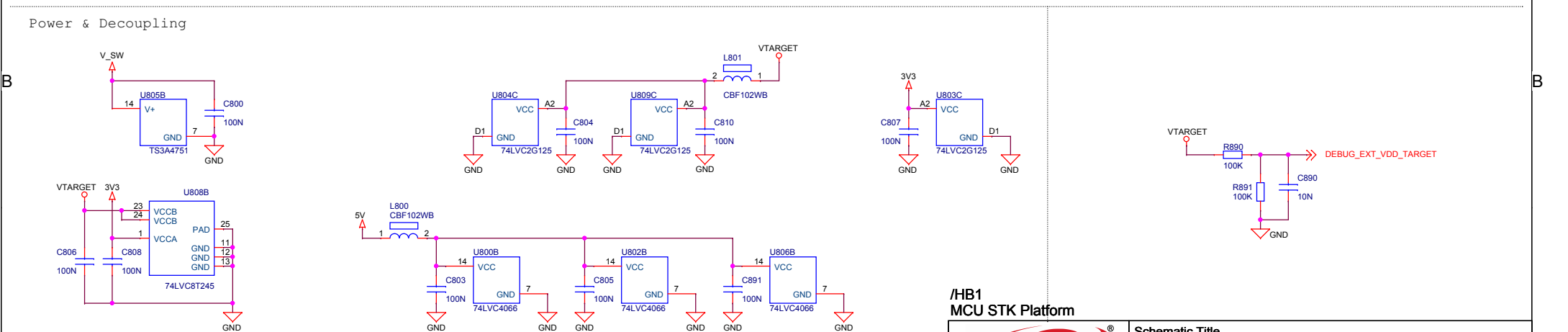
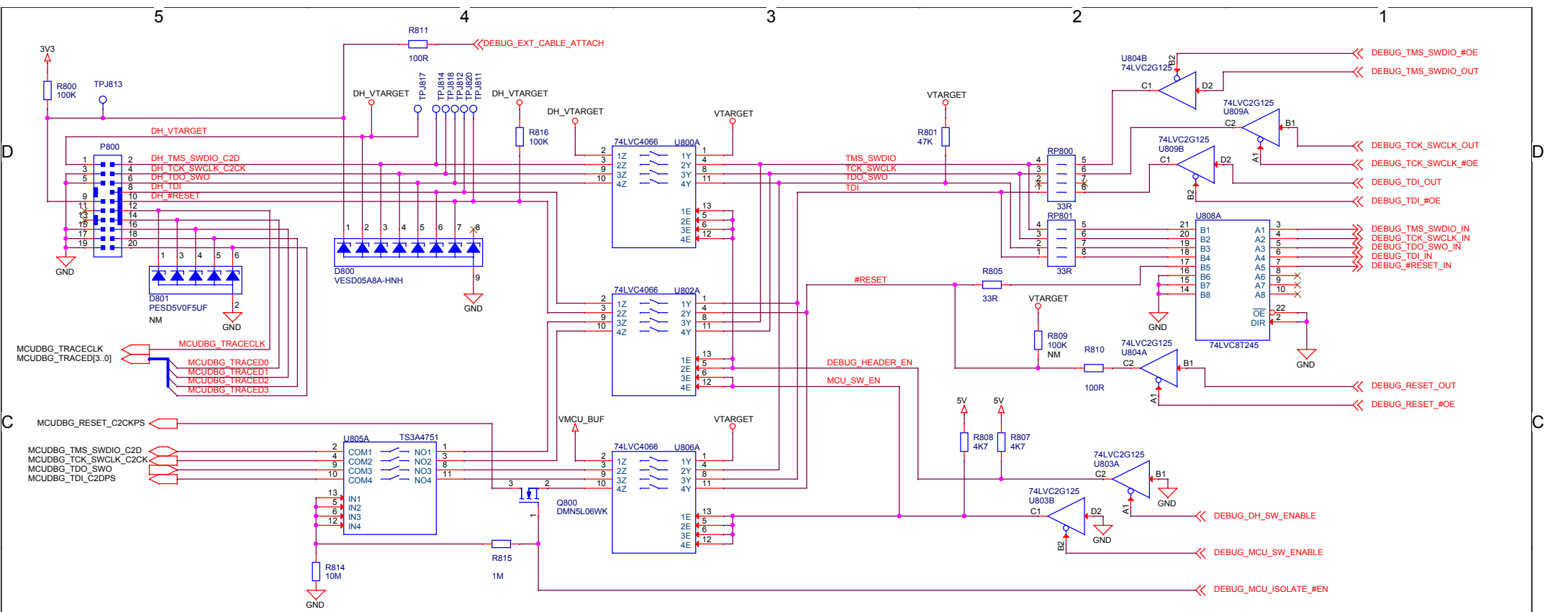






/HB1  
MCU STK Platform

 <b>SILICON LABS</b>		Schematic Title	
		<b>EFM8SB2 Sleepy Bee STK</b>	
Designed: ANB	Approved: JNO	Page Title	
Size A3		<b>Control MCU</b>	
BOM Doc No:		Document number	Revision
Design Created Date: Monday, May 12, 2014		<b>BRD5100A</b>	<b>A05</b>
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<div><div>Mode</div><div>DEBUG_MCU_SW_ENABLE</div><div>DEBUG_DH_SW_ENABLE</div><div>DEBUG_BUF_#OE</div><div>ISOLATE_#EN</div><div>DH_VTARGET</div><div>VTARGET</div></div>						
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	-	-

HB1

MCU STK Platform

Schematic Title

EFM8SB2 Sleepy Bee STK

Page Title

Debug Interface

Document number

BRD5100A

Revision

A05

Design: DDB

Approved: JNO

Size: A3

BOM Doc No:

Design Created Date: Monday, May 12, 2014

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## D



## A

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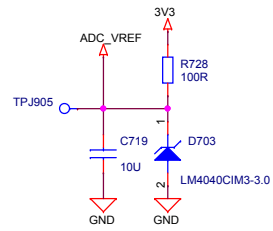
2

## C

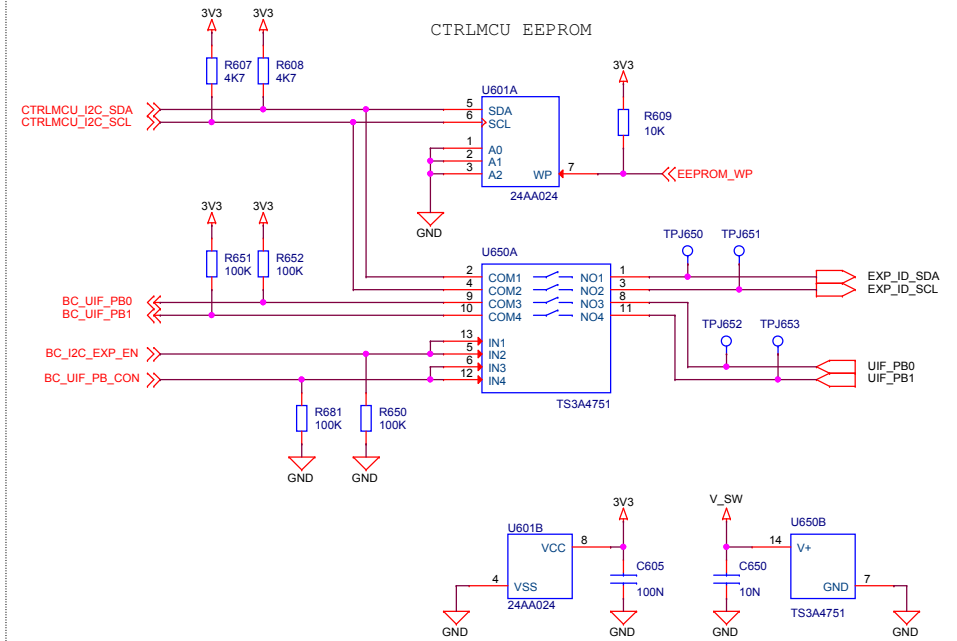
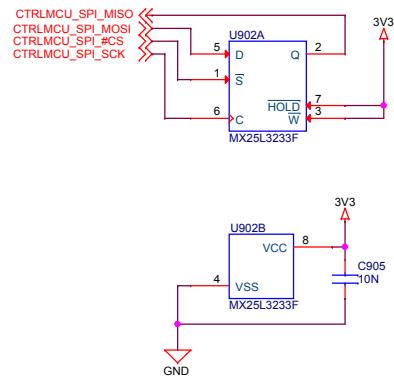




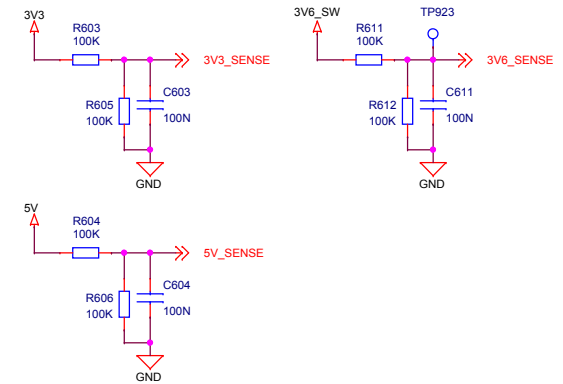
# ADC reference voltage




# CTRLMCU SERIAL FLASH



# POWER SENSE



/HB1/CMCU1  
Control MCU

		Schematic Title	
		<b>EFM8SB2 Sleepy Bee STK</b>	
Designed: ANB		Page Title	
Approved: JNO		<b>Control MCU Misc.</b>	
Size A3	BOM Doc No:	Document number <b>BRD5100A</b>	Revision <b>A05</b>
Design Created Date: Monday, May 12, 2014		Sheet Created Date Wednesday, February 11, 2015	Sheet Modified Date Wednesday, October 07, 2020
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