




LEGAL NOTICE:  
SILICON LABORATORIES INC. ("SILICON LABS") AND/OR ITS LICENSORS DO NOT WARRANT THE ACCURACY OR COMPLETENESS OF THIS SCHEMATIC OR ANY INFORMATION CONTAINED WITHIN THIS SCHEMATIC. IT IS PROVIDED "AS-IS" FOR REFERENCE ONLY. SILICON LABS DOES NOT WARRANT THAT THIS DESIGN WILL MEET THE SPECIFICATIONS, BE SUITABLE FOR YOUR APPLICATION OR FIT FOR ANY PARTICULAR PURPOSE, OR WILL OPERATE IN YOUR IMPLEMENTATION. SILICON LABS AND ITS LICENSORS DO NOT WARRANT THAT THE DESIGN IMPLIED IN THIS SCHEMATIC IS PRODUCTION-WORTHY. YOU SHOULD COMPLETELY VALIDATE AND TEST YOUR DESIGN IMPLEMENTATION TO CONFIRM SYSTEM FUNCTIONALITY FOR YOUR APPLICATION.

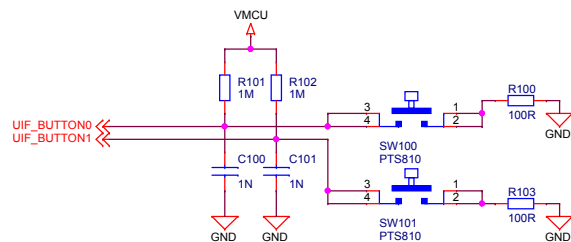


EFM32 Giant Gecko STK	
Board Function	Page
Title Page	1
User Interface	2
EFM32 Signal Assignments 1	3
EFM32 Signal Assignments 2	4
EFM32 Power	5
EFM32 I/O	6
LCD	7
Advanced Energy Monitor	8
Debug Interface	9
Power & Misc	10
Board Controller MCU	11
Board Controller Misc	12

Revision History	
Rev.	Description
C00	updated to new STK platform

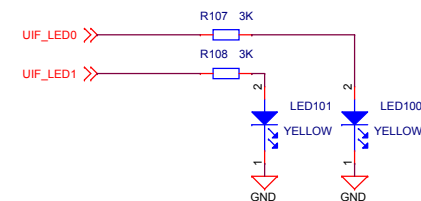
 <b>SILICON LABS</b>		Schematic Title <b>EFM32 Wonder Gecko Starter Kit</b>	
Designed: HEL		Approved: JSH	
Size A3	BOM Doc No:		Revision C00
Design Created Date: Tuesday, December 06, 2016		Document number <b>BRD2400A</b>	Sheet 1 of 12
		Sheet Created Date Tuesday, December 06, 2016	Sheet Modified Date Thursday, December 19, 2019

## User Pushbuttons



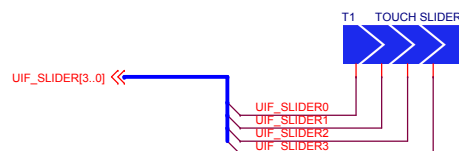
User LEDs

User LEDs

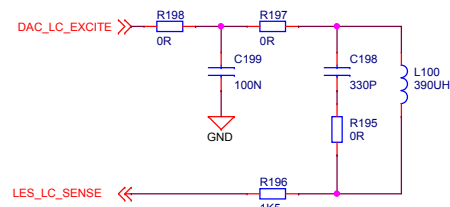


## Touch Pads

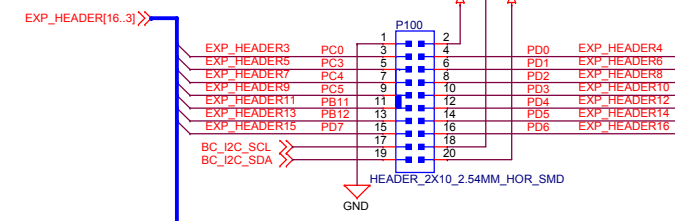
Touch slider



## LESENSE LC-Sensor

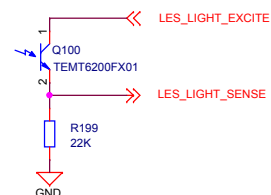


## EXP Header

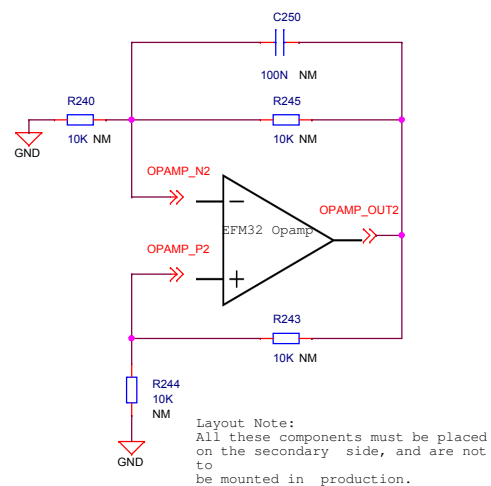


## EXP-Header Functionality

	<b>GND</b>	<b>1</b>	<b>2</b>	<b>VMCU</b>	
ACMP0_04	P00	3	4	PD0	US1_TX
ACMP0_05	PC3	5	6	PD1	US1_RX
ACMP1_04	PC4	7	8	PD2	US1_CLK
ACMP1_05	PC5	9	10	PD3	US1_CS
DAC0_OUT0	PB11	11	12	PD4	LEU0_TX
DAC0_OUT1	PB12	13	14	PD5	LEU0_RX
I2C0_SCL#1	PD7	15	16	PD6	I2C0_SDA#1
Reserved for EXP Board Identification		17	18	5V	
		19	20	GND	

Photo  
Transistor

## OPAMP Connection Footprint



	Schematic Title
1	1.1
2	2.1
3	3.1
4	4.1
5	5.1
6	6.1
7	7.1
8	8.1
9	9.1
10	10.1
11	11.1
12	12.1
13	13.1
14	14.1
15	15.1
16	16.1
17	17.1
18	18.1
19	19.1
20	20.1
21	21.1
22	22.1
23	23.1
24	24.1
25	25.1
26	26.1
27	27.1
28	28.1
29	29.1
30	30.1
31	31.1
32	32.1
33	33.1
34	34.1
35	35.1
36	36.1
37	37.1
38	38.1
39	39.1
40	40.1
41	41.1
42	42.1
43	43.1
44	44.1
45	45.1
46	46.1
47	47.1
48	48.1
49	49.1
50	50.1
51	51.1
52	52.1
53	53.1
54	54.1
55	55.1
56	56.1
57	57.1
58	58.1
59	59.1
60	60.1
61	61.1
62	62.1
63	63.1
64	64.1
65	65.1
66	66.1
67	67.1
68	68.1
69	69.1
70	70.1
71	71.1
72	72.1
73	73.1
74	74.1
75	75.1
76	76.1
77	77.1
78	78.1
79	79.1
80	80.1
81	81.1
82	82.1
83	83.1
84	84.1
85	85.1
86	86.1
87	87.1
88	88.1
89	89.1
90	90.1
91	91.1
92	92.1
93	93.1
94	94.1
95	95.1
96	96.1
97	97.1
98	98.1
99	99.1
100	100.1

## EFM32 Wonder Gecko Starter Kit

Page Title

## User Interfaces

Document number

**BRD2400A**

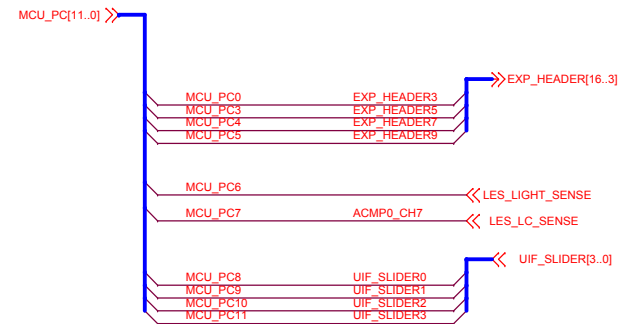
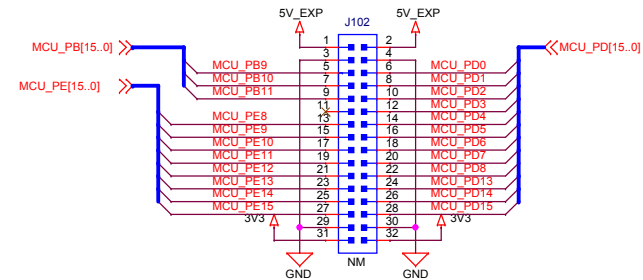
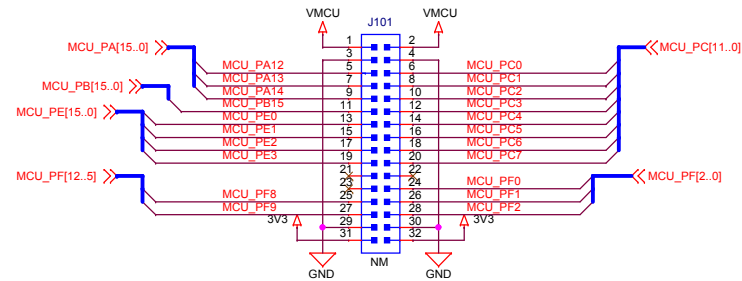
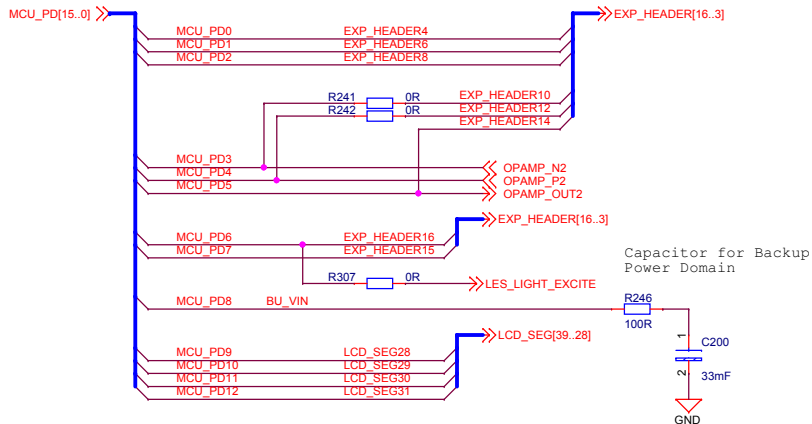
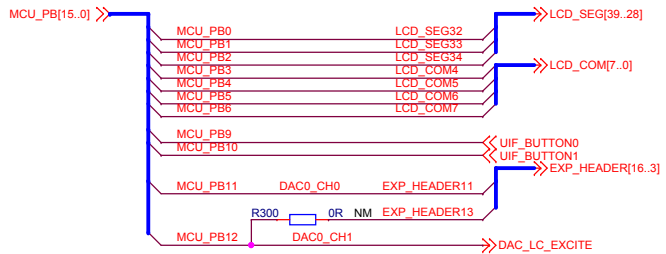
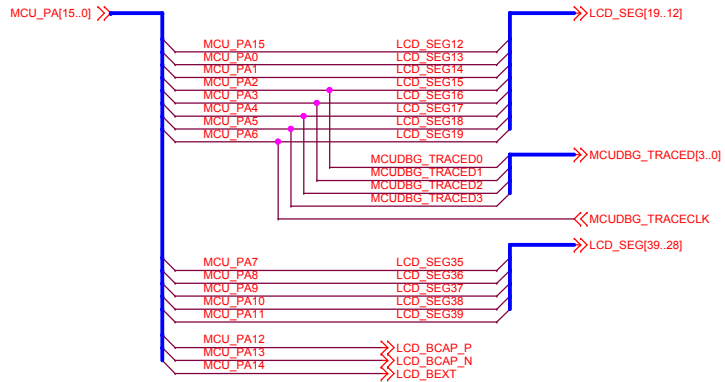
Sheet Created Date  
Tuesday, December 06, 2016

Sheet Modified Date	Thursday, December 19, 2019
---------------------	-----------------------------

	Revision
--	----------

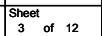
C00

Sheet  
2 of 12

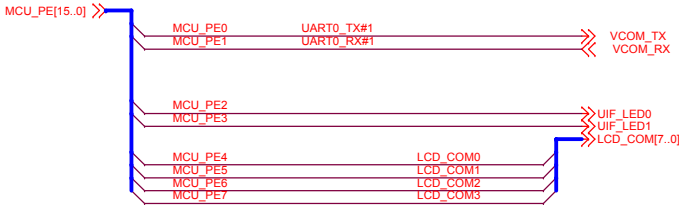


VMCU GND	VMCU GND
A12	C0
A13	C1
A14	C2
B15	C3
E0	C4
E1	C5
E2	C6
E3	C7
NC	NC
NC	F0
F8	F1
F9	F2
GND	GND
3V3	3V3

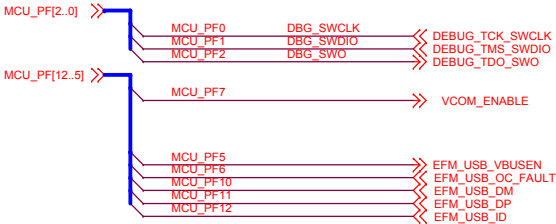
5V	5V
GND	GND
B9	D0
B10	D1
B11	D2
NC	D3
E8	D4
E9	D5
E10	D6
E11	D7
E12	D8
E13	D13
E14	D14
E15	D15
GND	GND
3V3	3V3




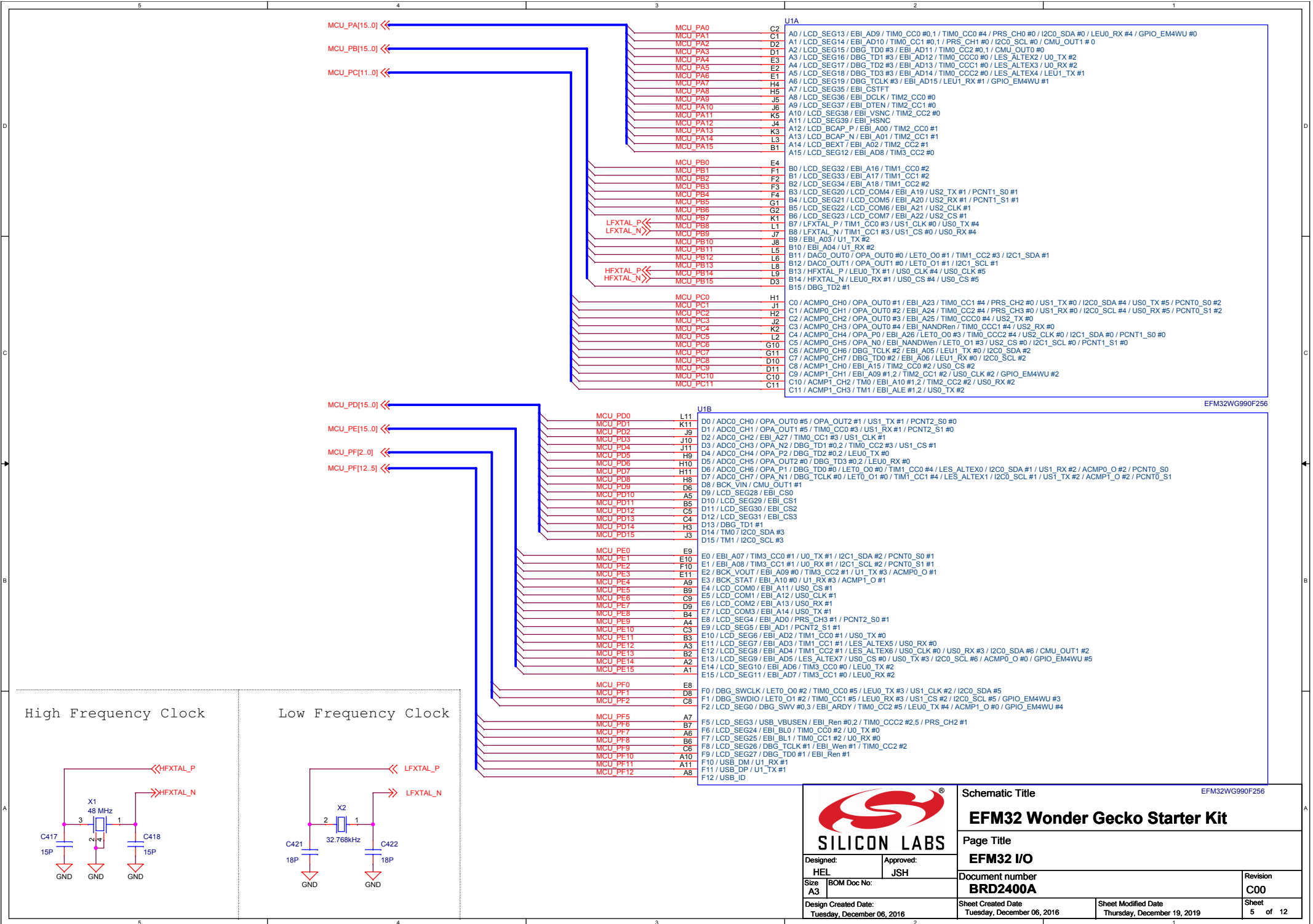
PE Connections



PF Connections



 <b>SILICON LABS</b>		Schematic Title	
		<b>EFM32 Wonder Gecko Starter Kit</b>	
Designed: HEL		Approved: JSH	
Size A3	BOM Doc No:		Revision C00
Design Created Date: Tuesday, December 06, 2016		Document number <b>BRD2400A</b>	Sheet 4 of 12
Sheet Created Date: Tuesday, June 20, 2017		Sheet Modified Date: Thursday, December 19, 2019	



## D



**B**

**A**

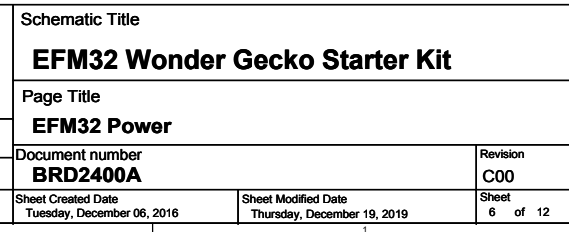


---

2

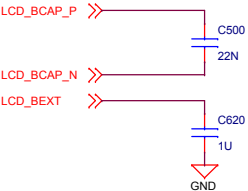
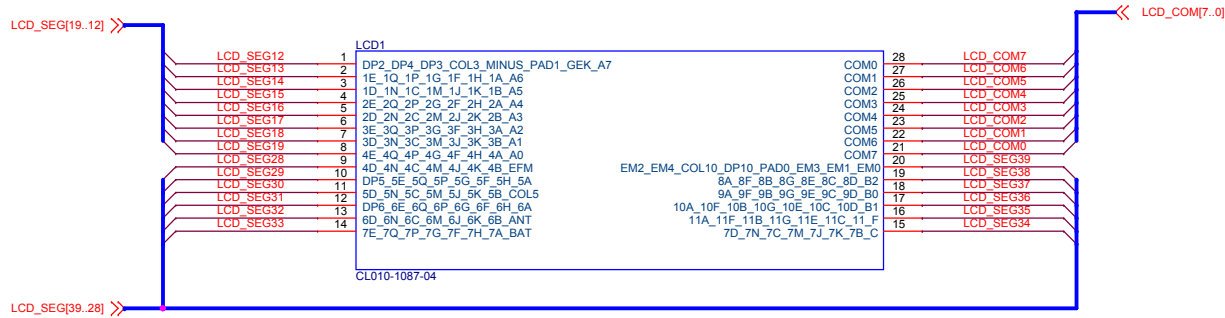


---

2

LCD signal connections

LCD Boost

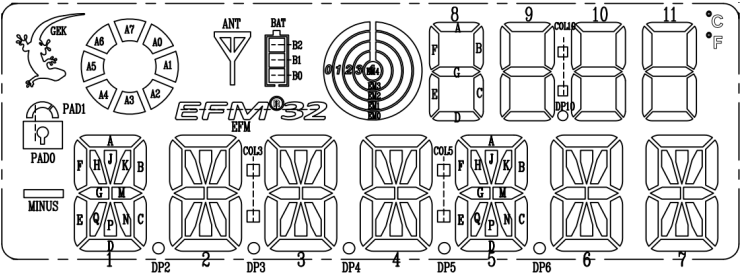



Segment names

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14
---	S0	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
COM0	DP2	1 E	1 D	2 E	2 D	3 E	3 D	4 E	4 D	DP5	5 D	DP6	6 D	7 E
COM1	DP4	1 Q	1 N	2 Q	2 N	3 Q	3 N	4 Q	4 N	5 E	5 N	6 E	6 N	7 Q
COM2	DP3	1 P	1 C	2 P	2 C	3 P	3 C	4 P	4 C	5 Q	5 C	6 Q	6 C	7 P
COM3	COL3	1 G	1 M	2 G	2 M	3 G	3 M	4 G	4 M	5 P	5 M	6 P	6 M	7 G
COM4	MINUS	1 F	1 J	2 F	2 J	3 F	3 J	4 F	4 J	5 G	5 J	6 G	6 J	7 F
COM5	PAD1	1 H	1 K	2 H	2 K	3 H	3 K	4 H	4 K	5 F	5 K	6 F	6 K	7 H
COM6	GEK	1 A	1 B	2 A	2 B	3 A	3 B	4 A	4 B	5 H	5 B	6 H	6 B	7 A
COM7	A7	A6	A5	A4	A3	A2	A1	A0	EFM	5 A	COL5	6 A	ANT	BAT

PIN	15	16	17	18	19	20	21	22	23	24	25	26	27	28
---	S14	S15	S16	S17	S18	S19	COM7	COM6	COM5	COM4	COM3	COM2	COM1	COM0
COM0	7 D	11 A	10 A	9 A	8 A	EM2							COM1	COM0
COM1	7 N	11 F	10 F	9 F	8 F	EM4								
COM2	7 C	11 B	10 B	9 B	8 B	COL10						COM2		
COM3	7 M	11 G	10 G	9 G	8 G	DP10					COM3			
COM4	7 J	11 E	10 E	9 E	8 E	PAD0				COM4				
COM5	7 K	11 C	10 C	9 C	8 C	EM3			COM5					
COM6	7 B	11 D	10 D	9 D	8 D	EM1		COM6						
COM7	*C	*F	B1	B0	B2	EM0	COM7							

Segment placement





**SILICON LABS**

Designed: HEL  
Size: A3  
BOM Doc No:  
Design Created Date: Tuesday, December 06, 2016

Approved: JSH  
Sheet Created Date: Tuesday, December 06, 2016

Schematic Title

**EFM32 Wonder Gecko Starter Kit**

Page Title

**LCD**

Document number

**BRD2400A**

Sheet Created Date: Tuesday, December 06, 2016

Sheet Modified Date: Thursday, December 19, 2019

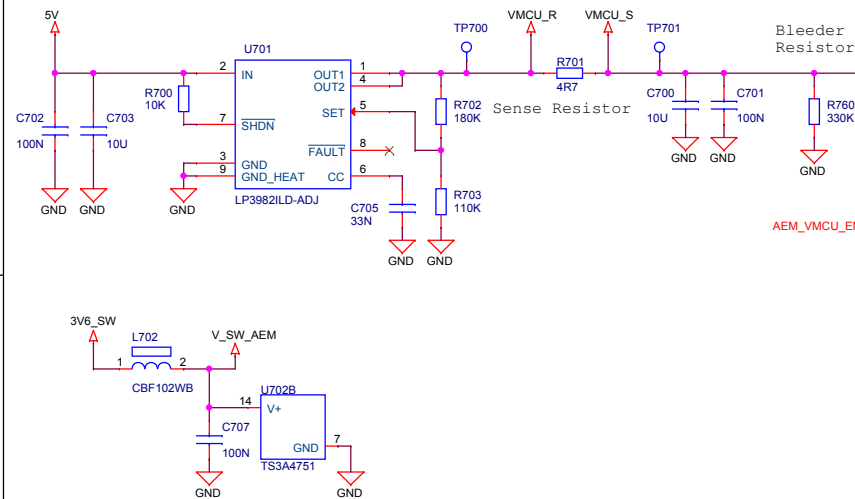
Revision

**C00**

Sheet

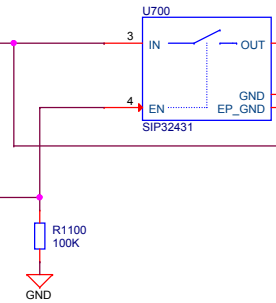
7 of 12

# MCU power regulator

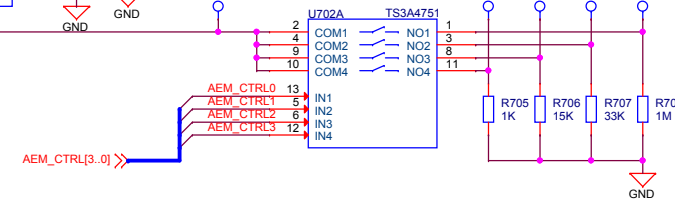


# Isolation switch

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

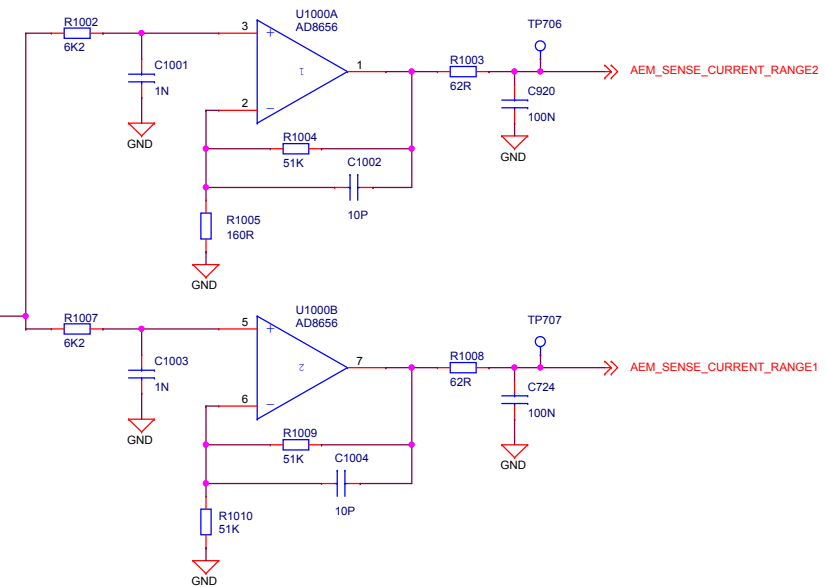
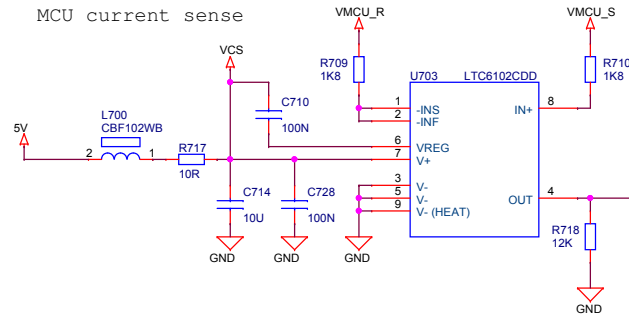


# AEM Calibration

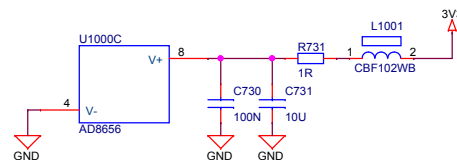
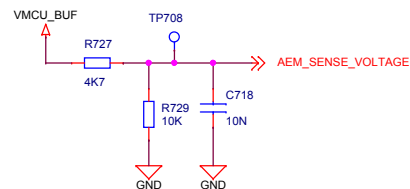


AEM_CTRL	Calibration Current
0x1	3.30 uA
0x2	100 uA
0x4	220 uA
0x6	320 uA
0x8	3.30 mA

# MCU current sense



# MCU Voltage Sense

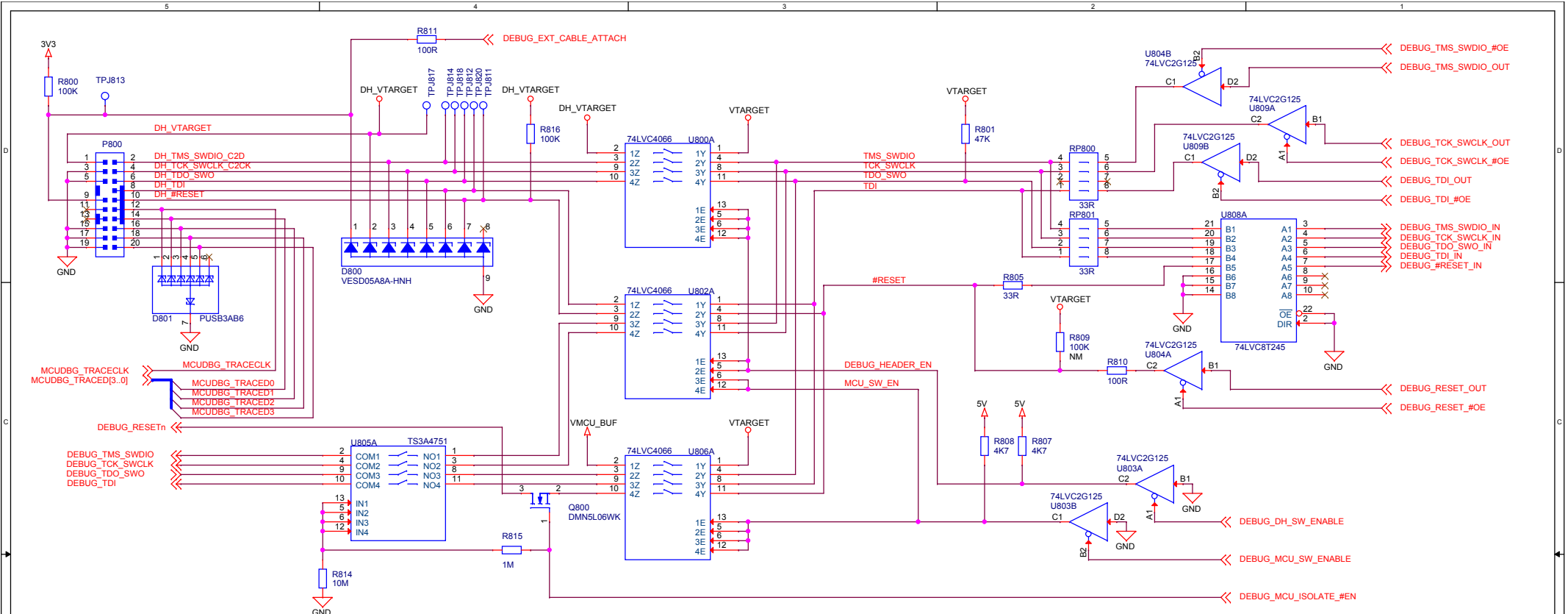


Designed: HEL  
Size: A3  
Design Created Date: Tuesday, December 06, 2016

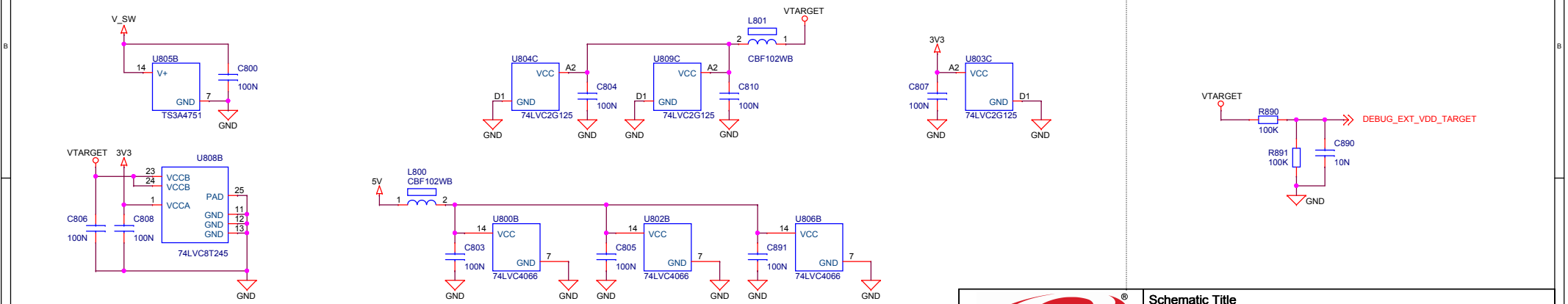
Approved: JSH  
BOM Doc No:  
Sheet Created Date: Tuesday, December 06, 2016

Schematic Title	
<b>EFM32 Wonder Gecko Starter Kit</b>	
Page Title	
<b>Advanced Energy Monitor</b>	
Document number	Revision
<b>BRD2400A</b>	<b>C00</b>
Sheet Created Date	Sheet Modified Date
Tuesday, December 06, 2016	Thursday, December 19, 2019
Sheet	of 12
8	






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	-	-



**SILICON LABS**

**Schematic Title**

**EFM32 Wonder Gecko Starter Kit**

**Page Title**

**Debug Interface**

Designed: HEL Approved: JSH

Size A3 BOM Doc No: BRD2400A

Design Created Date: Tuesday, December 06, 2016

Document number

Sheet Created Date: Tuesday, December 06, 2016

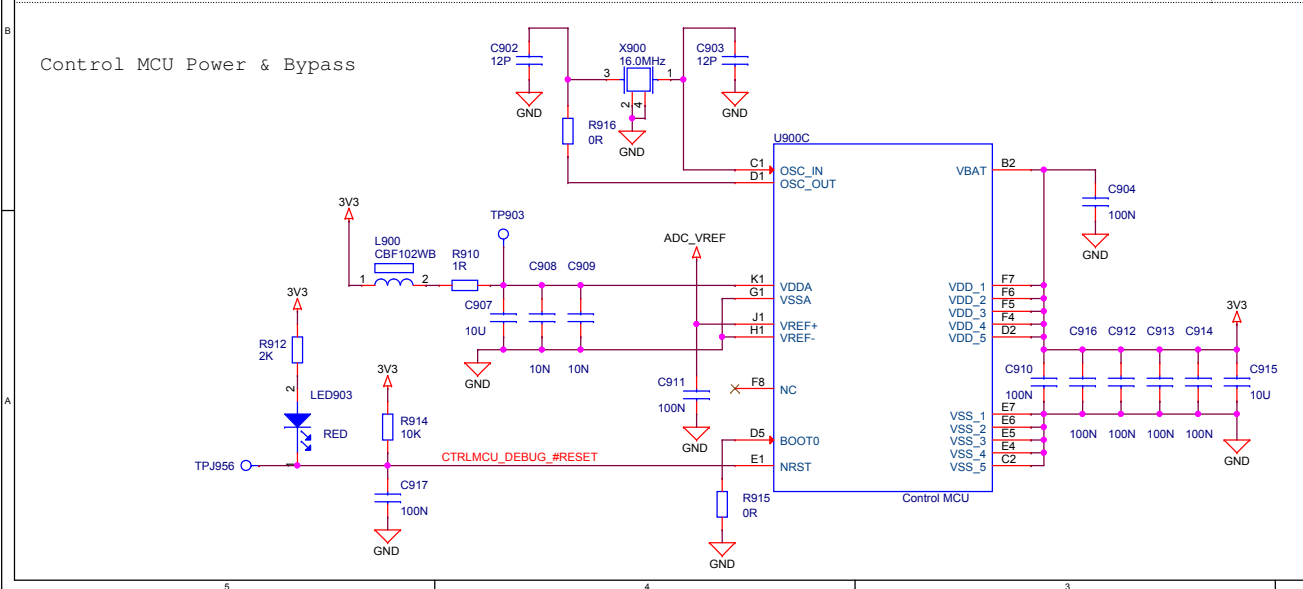
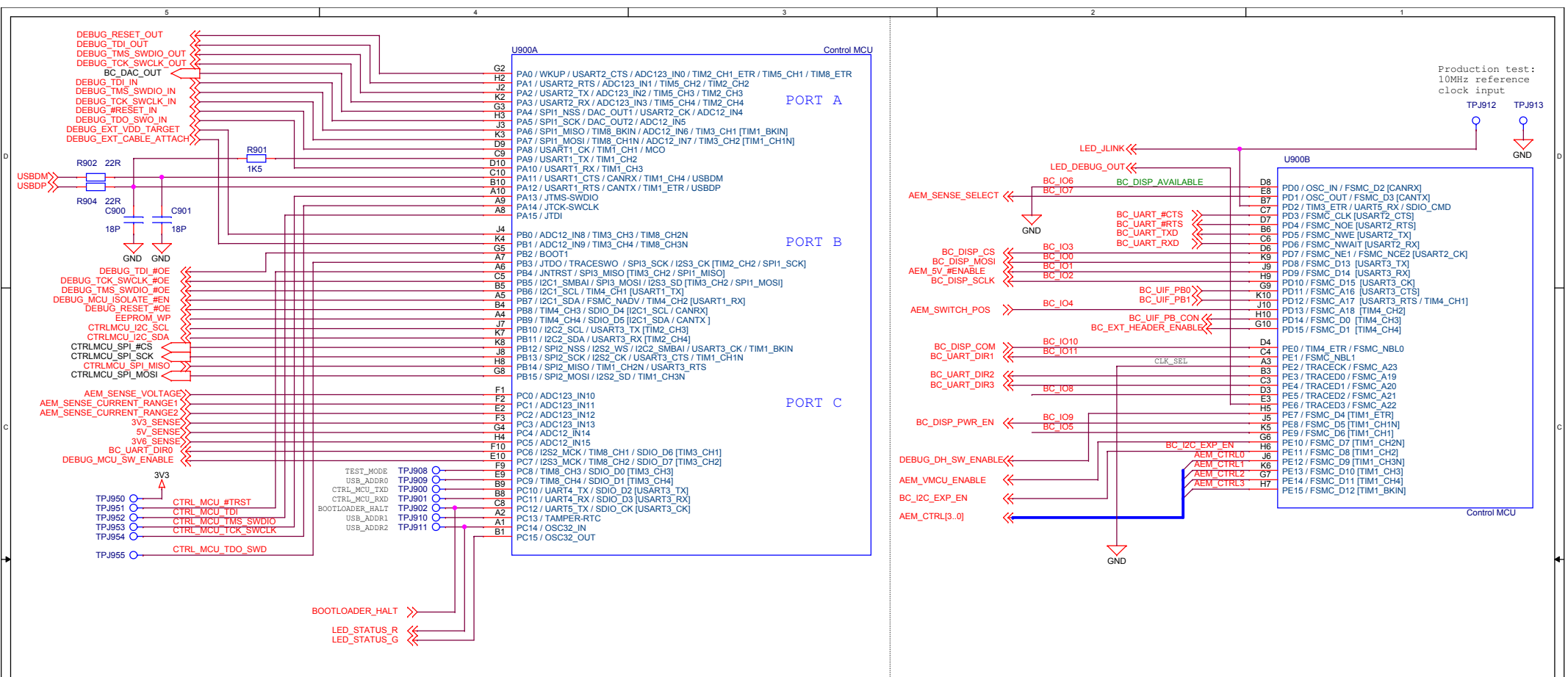
Sheet Modified Date: Thursday, December 19, 2019


Revision

C00

Sheet 9 of 12







**SILICON LABS**

Designed: HEL		Approved: JSH	
Size A3	BOM Doc No:		
Design Created Date: Tuesday, December 06, 2016		Sheet Created Date: Tuesday, December 06, 2016	

Schematic Title	
<b>EFM32 Wonder Gecko Starter Kit</b>	
Page Title	
<b>Board Controller MCU</b>	
Document number	Revision
<b>BRD2400A</b>	<b>C00</b>
Sheet Modified Date: Thursday, December 19, 2019	Sheet 11 of 12

