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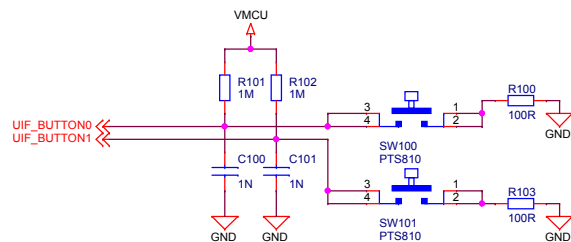


Revision History	
Rev.	Description
C00	updated to new STK platform

EFM32 Giant Gecko STK	
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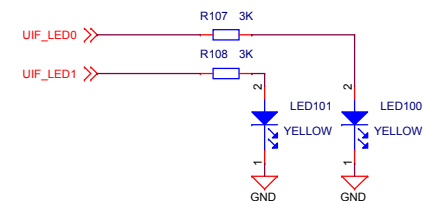
 <b>SILICON LABS</b>		Schematic Title <b>EFM32 Wonder Gecko Starter Kit</b>	
Designed: HEL		Approved: JSH	
Size A3	BOM Doc No:		Revision C01
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## User Pushbuttons



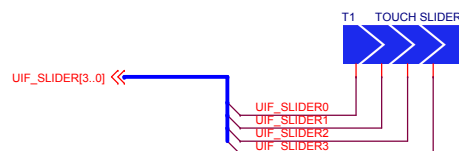
User LEDs

User LEDs

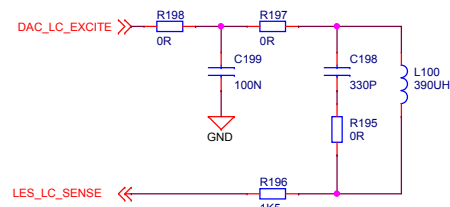


## Touch Pads

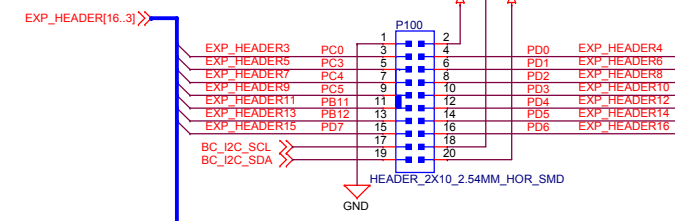
Touch slider



## LESENSE LC-Sensor

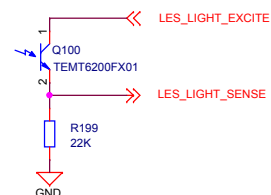


## EXP Header

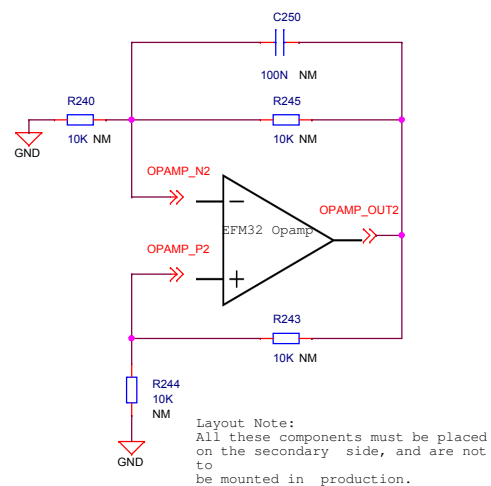



## EXP-Header Functionality

	<b>GND</b>	<b>1</b>	<b>2</b>	<b>VMCU</b>		
ACMP0_04	P00	3	4	P00	US1_TX	ADC0_00
ACMP0_05	PC3	5	6	PD1	US1_RX	ADC0_01
ACMP1_04	PC4	7	8	PD2	US1_CLK	ADC0_02
ACMP1_05	PC5	9	10	PD3	US1_CS	ADC0_03
DAC0_OUT0	PB11	11	12	PD4	LEU0_TX	ADC0_04
DAC0_OUT1	PB12	13	14	PD5	LEU0_RX	ADC0_05
I2C0_SCL#1	PD7	15	16	PD6	I2C0_SDA#1	
Reserved for EXP Board Identification		17	18	5V		
		19	20			

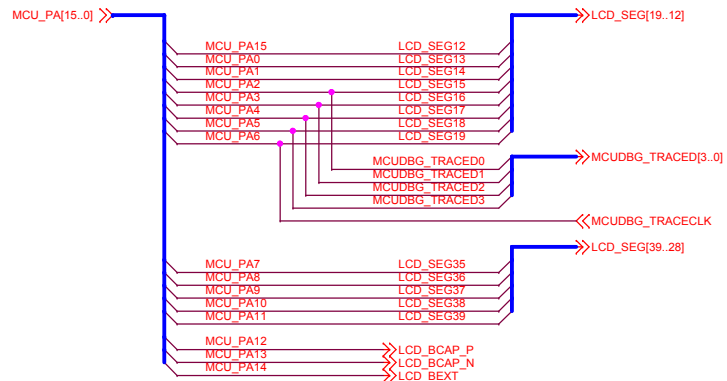
Photo  
Transistor

## OPAMP Connection Footprint

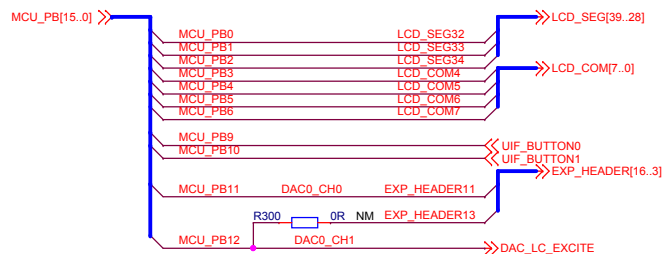


 <b>SILICON LABS</b>		Schematic Title	
		<b>EFM32 Wonder Gecko Starter Kit</b>	
Page Title		<b>User Interfaces</b>	
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Size A3	BOM Doc No:	Document number <b>BRD2400A</b>	Revision <b>C01</b>
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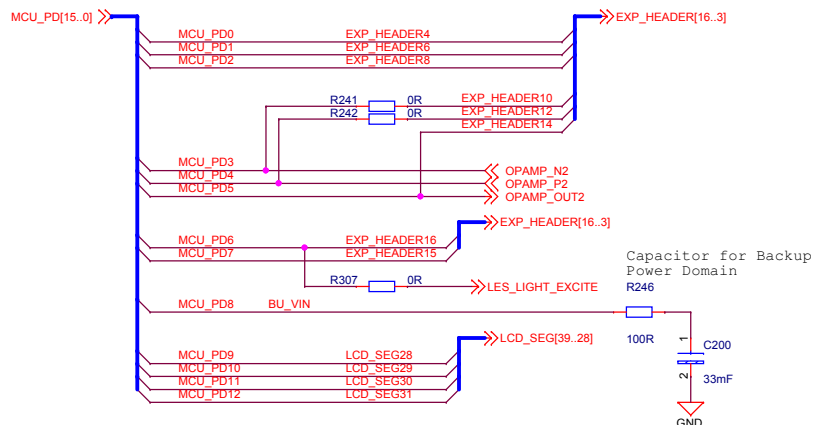
## PA Connections



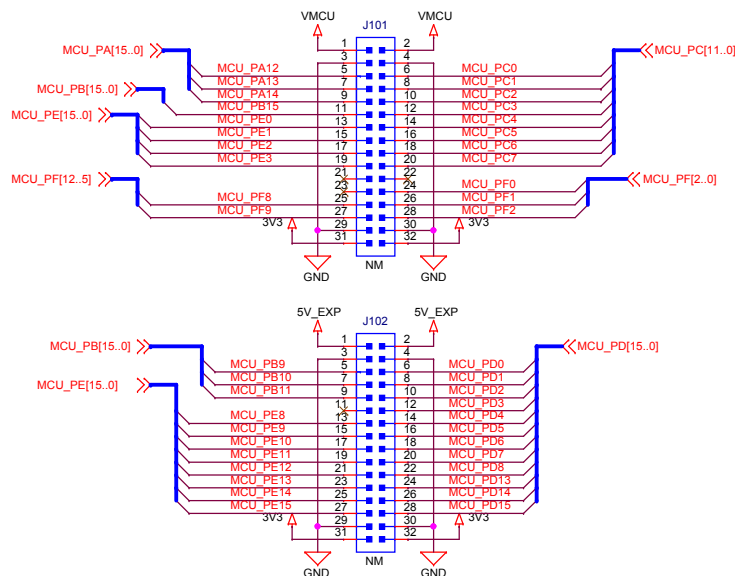
## PB Connections



## PD Connections



## Breakout connections

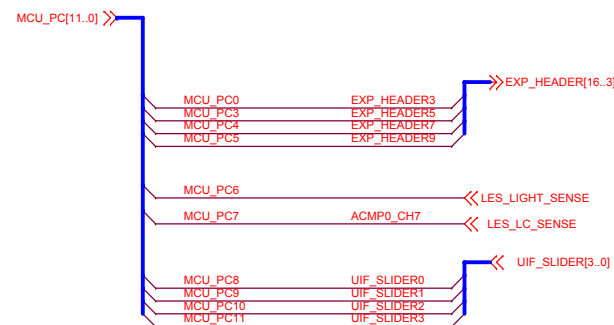


### Breakout header labels:

VMCU	VMCU
GND	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

## PC Connections



Designed: HEL  
Size: A3  
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Approved: JSH

Schematic Title

**EFM32 Wonder Gecko Starter Kit**

Page Title

**Signal Assignments**

Document number

**BRD2400A**

Revision

**C01**

Sheet Created Date

Tuesday, December 06, 2016

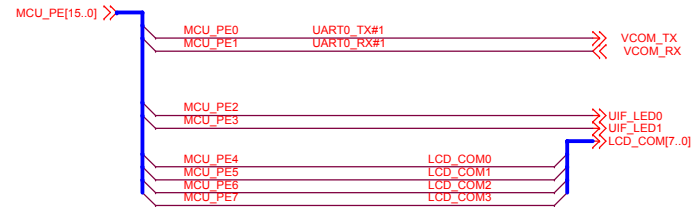
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Thursday, April 23, 2020

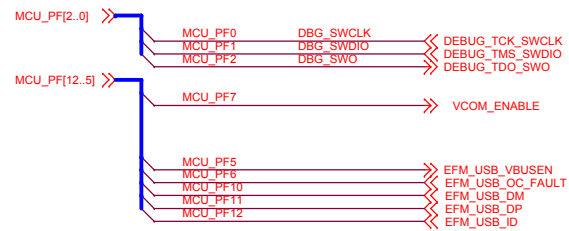
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## PE Connections



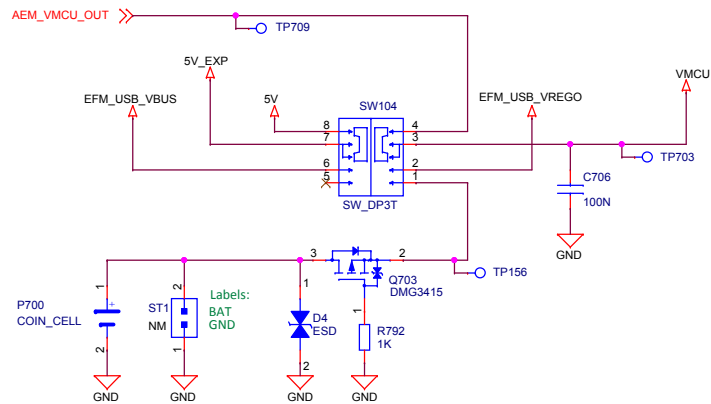
## PF Connections



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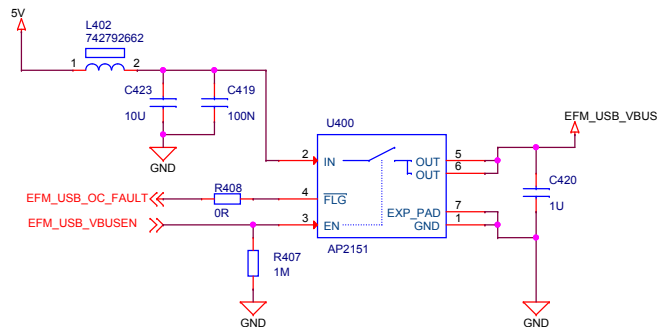


## Power Select Switch: AEM/USB/BAT

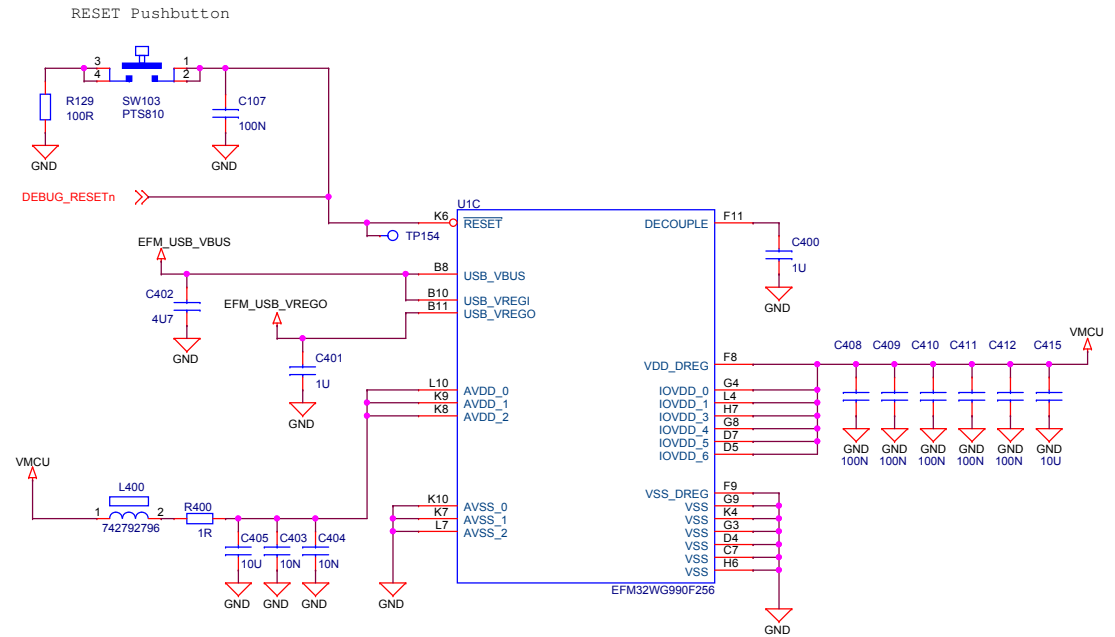


SWITCH POS	MODE DESCRIPTION
AEM	AEM Enabled, VMCU sourced from external 3.3V LDO powered by BC USB 5V supply, EXP header and breakout 5V sourced from BC USB 5V supply
USB	AEM Disabled, VMCU sourced from internal 3.3V LDO powered by MCU USB 5V supply, EXP header and breakout 5V sourced from MCU USB 5V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

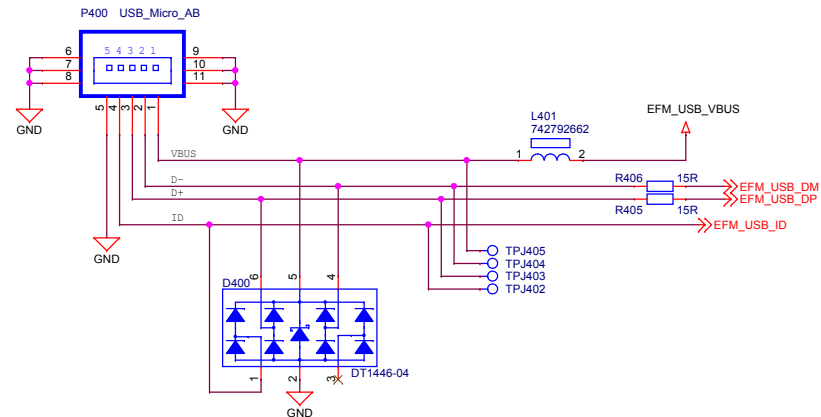
## USB Host Power enable




## EFM32 Power & Reset



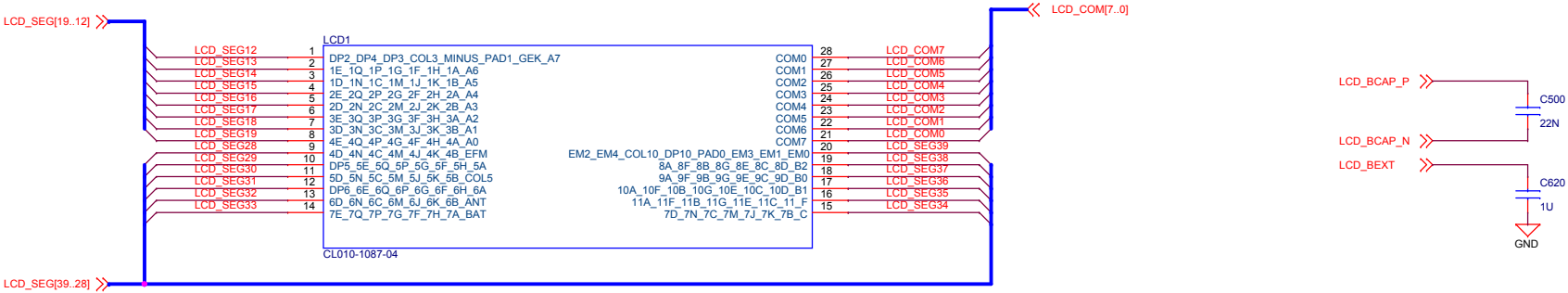
## USB Connection and ESD protection



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LCD signal connections

LCD Boost

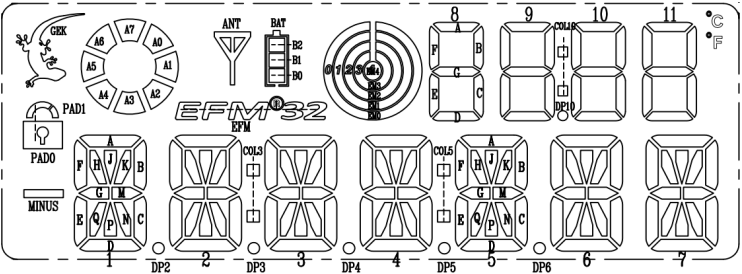



Segment names

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





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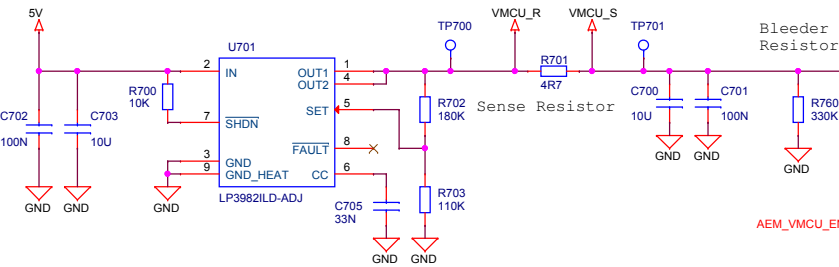
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Page Title: **LCD**

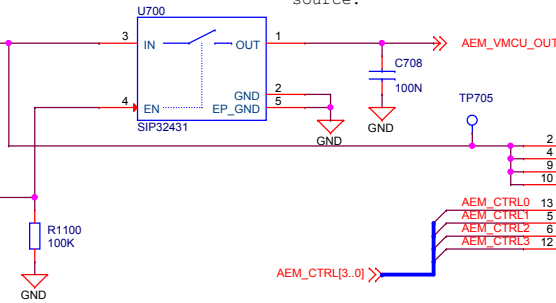
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# MCU power regulator

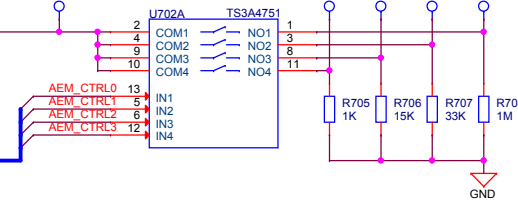


# Isolation switch

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

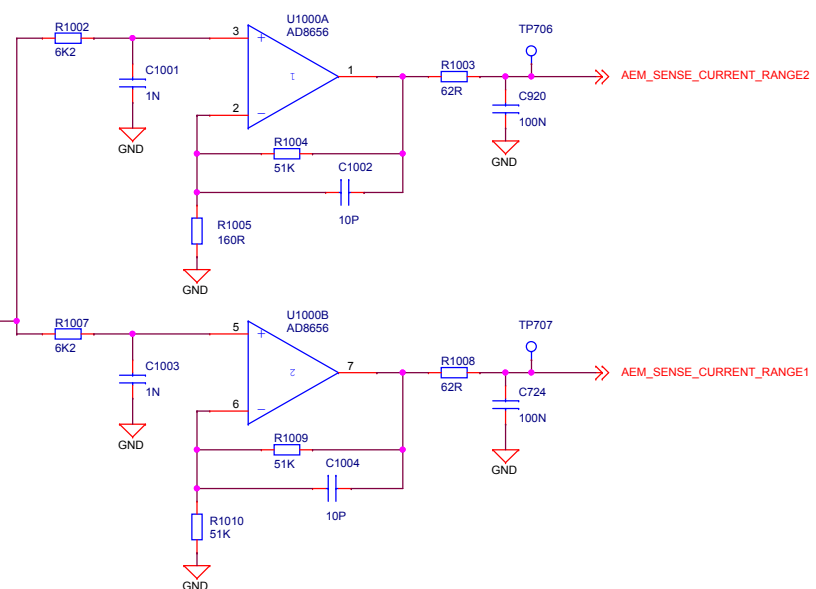
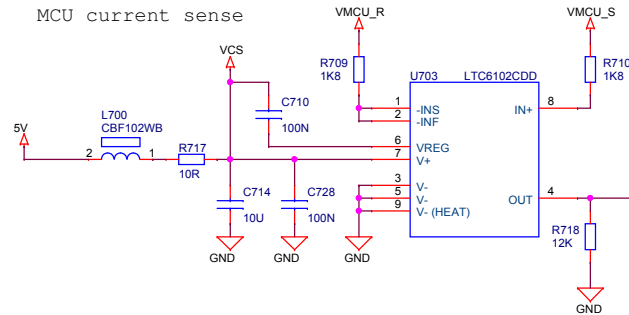


# AEM Calibration

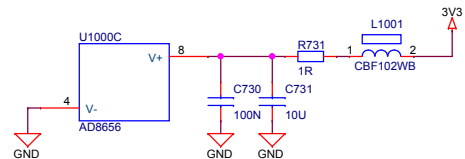
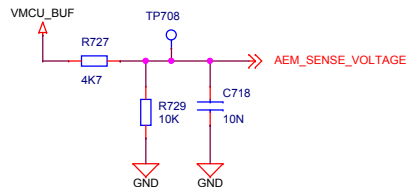


AEM_CTRL	Calibration Current
0x1	3.30 uA
0x2	100 uA
0x4	220 uA
0x6	320 uA
0x8	3.30 mA

# MCU current sense



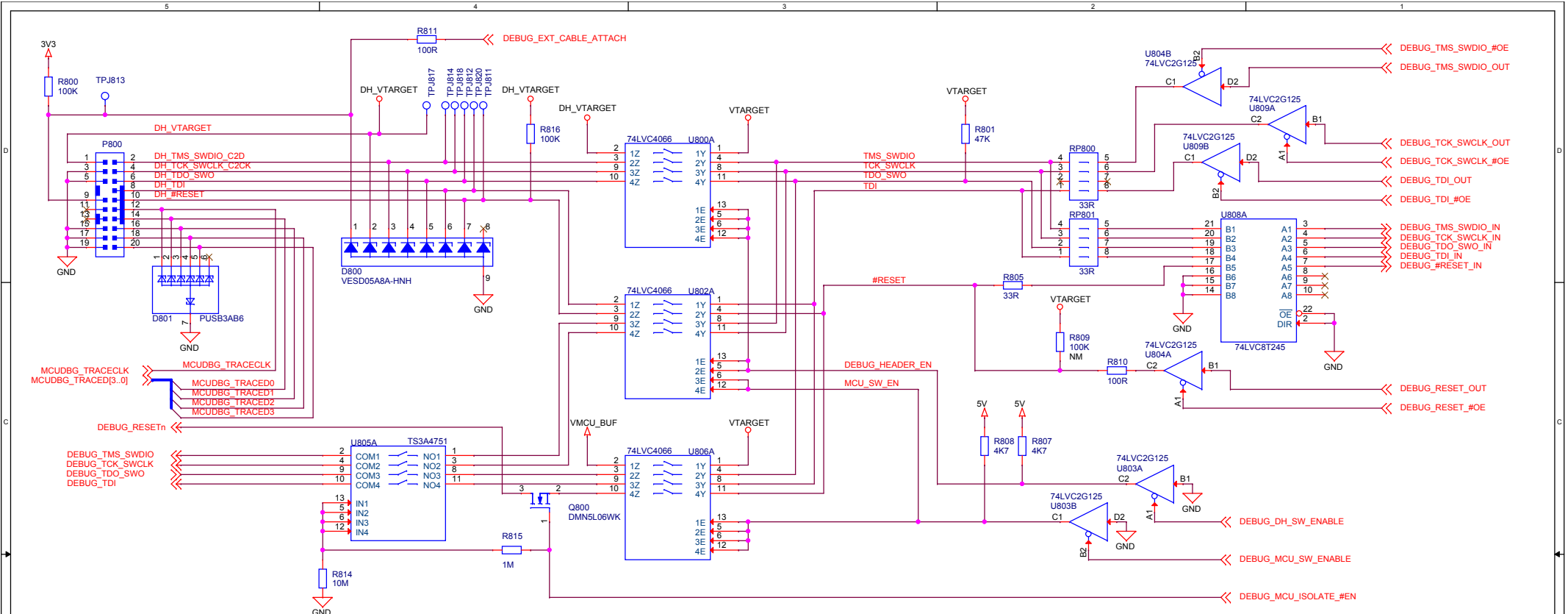
# MCU Voltage Sense



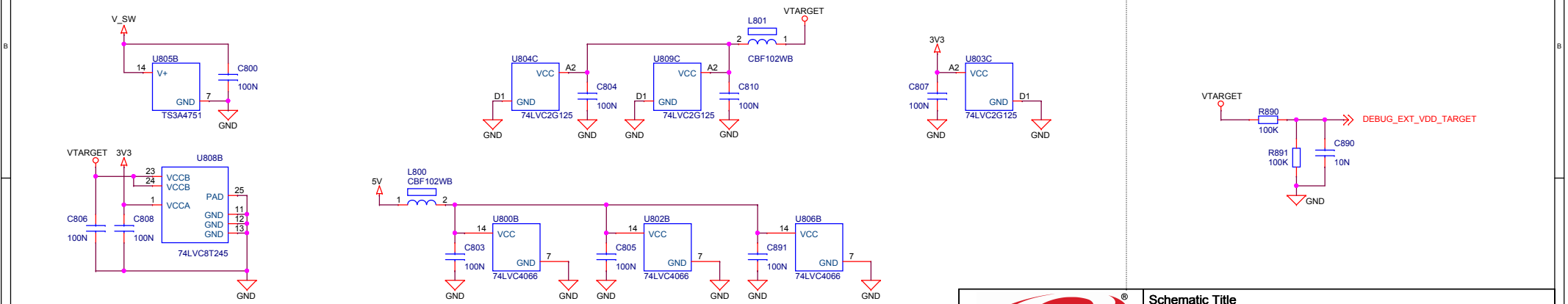
Designed: HEL	Approved: JSH
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Power & Decoupling



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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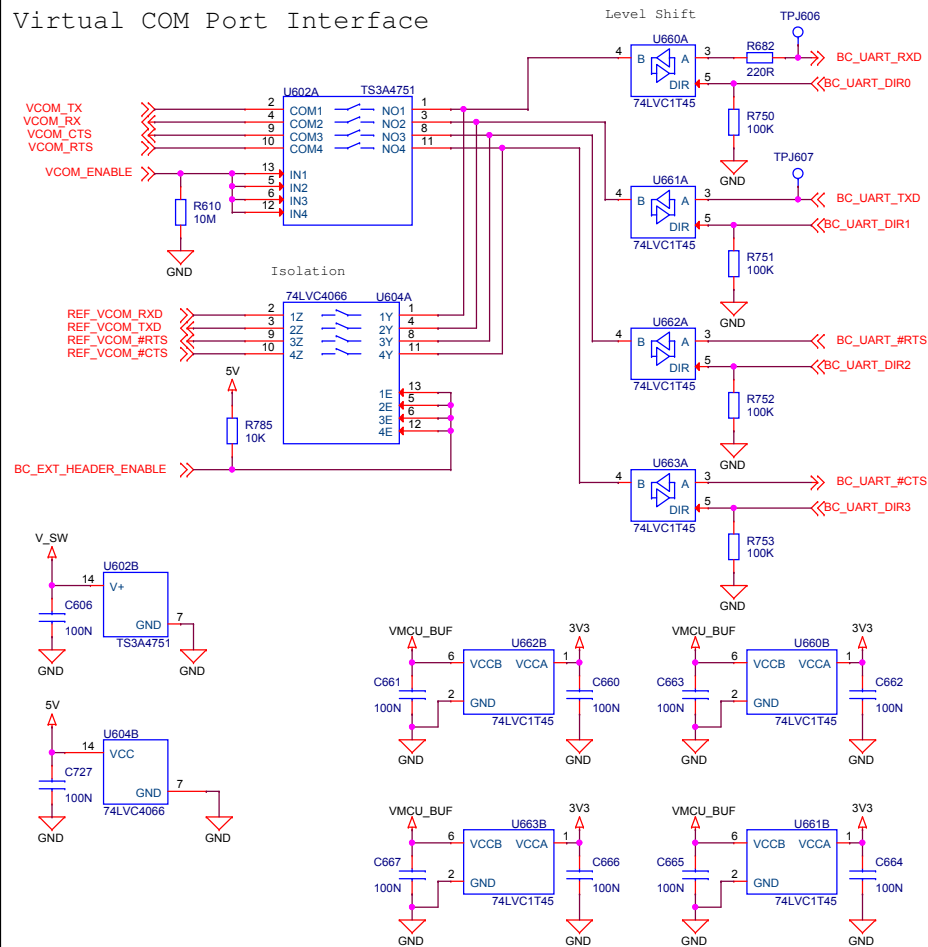
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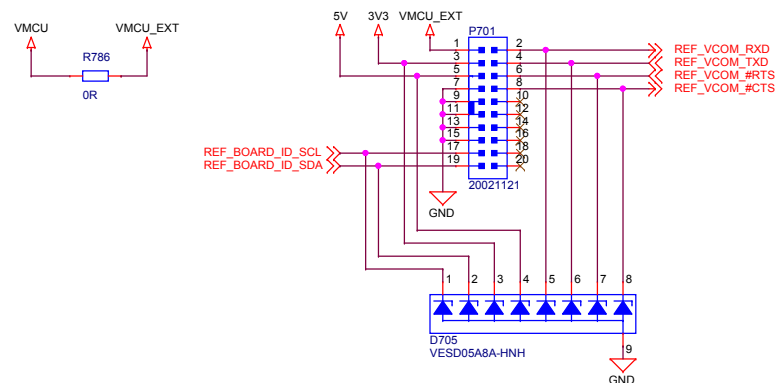
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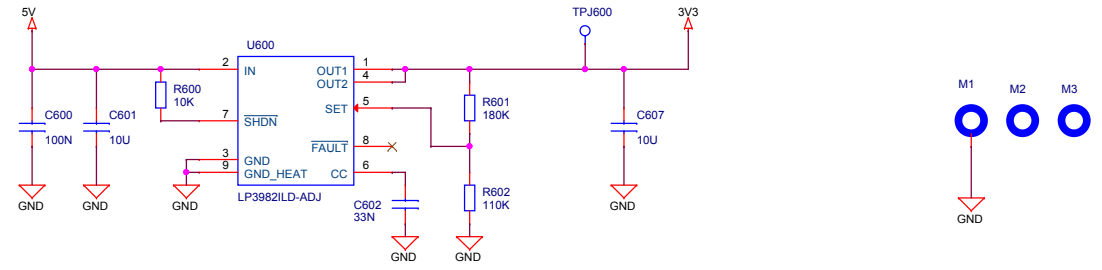
# Virtual COM Port Interface



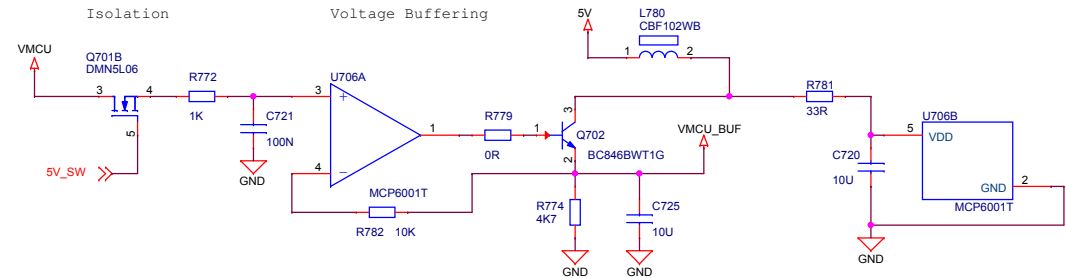
## Simplicity Connector



## 3V3 Regulator



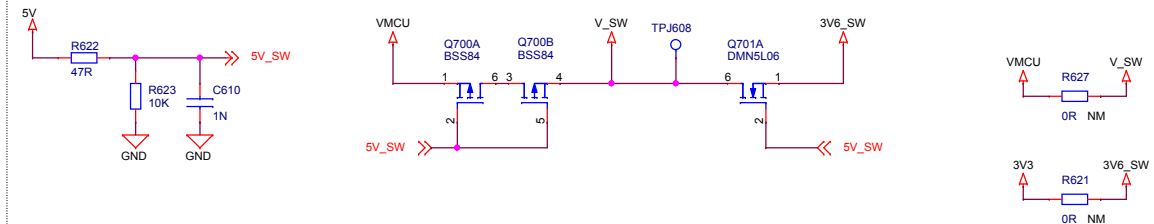
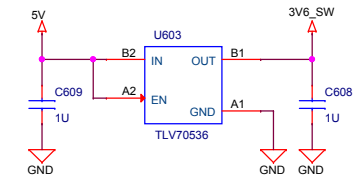
## VMCU Voltage Mirror



## 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



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## EFM32 Wonder Gecko Starter Kit

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### Signal Assignments

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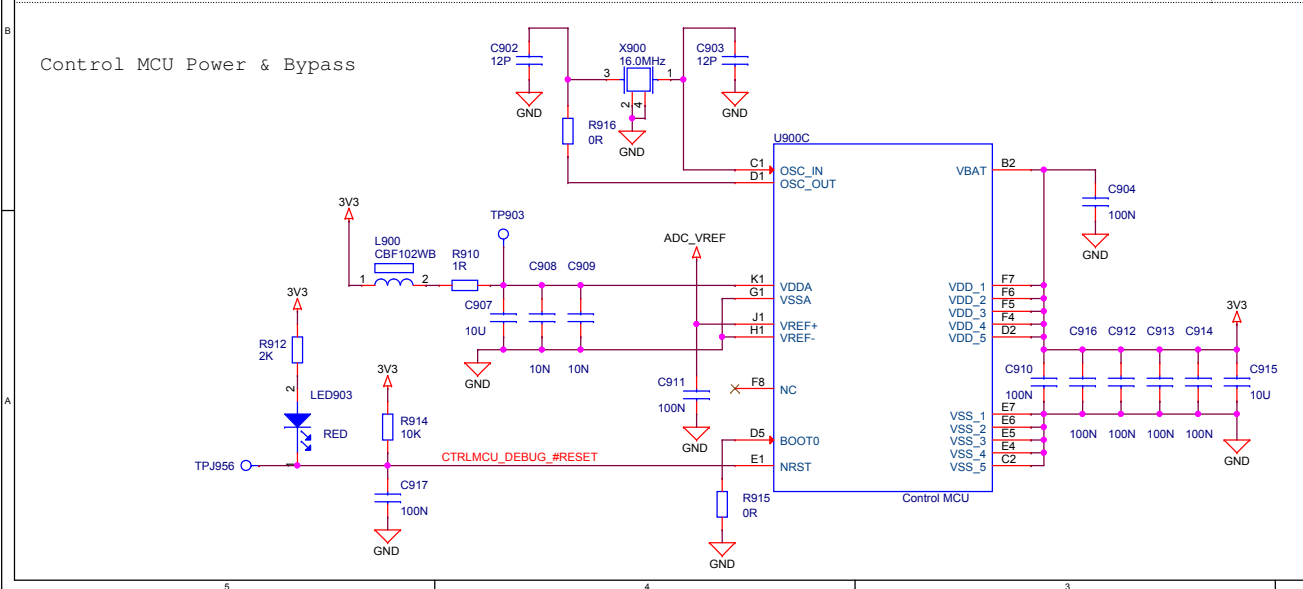
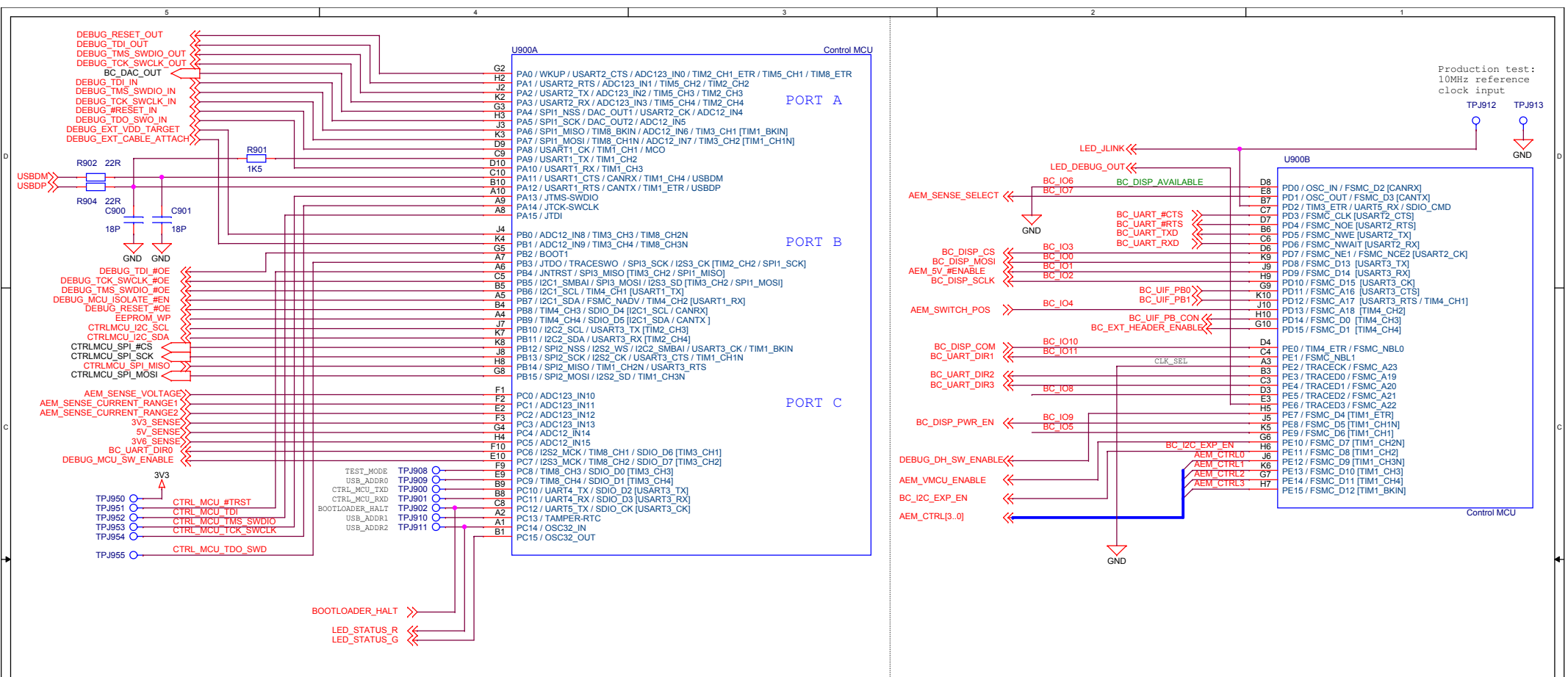
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C01

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