

EFM32 Wonder Gecko Starter Kit

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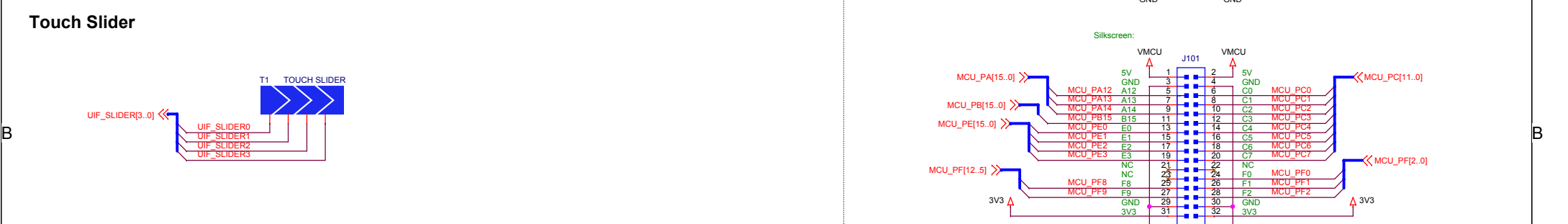
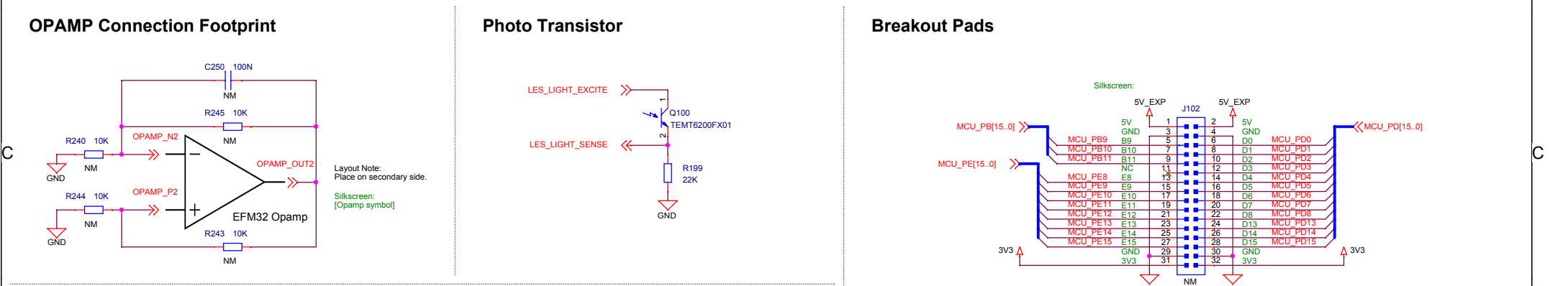
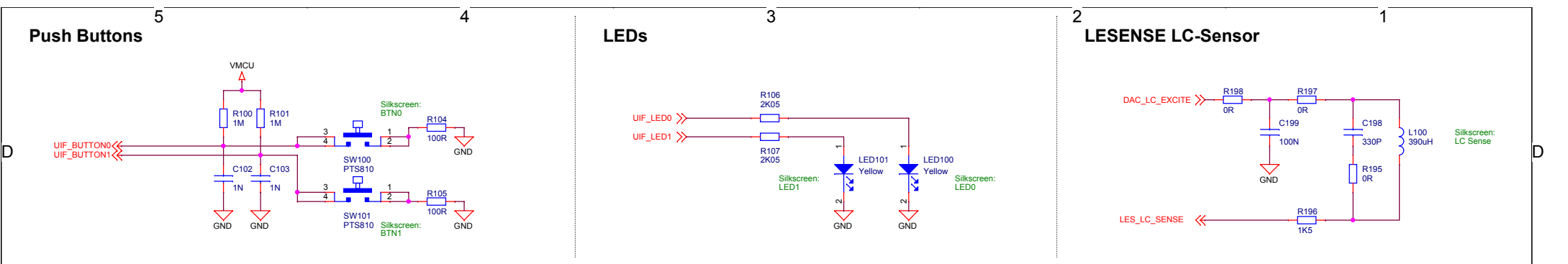
Revision History

Rev.	Description
A00	Initial release. Transition to new STK platform.



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		EFM32 Wonder Gecko Starter Kit	
Designed MAH		Approved RGU	
Size A3		Sheet Modified Date Friday, February 11, 2022	
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EXP Header

EXP Header Functionality

Top Row			
2	VMCU		
4	PD0	US1_TX	ADC0_CH0
6	PD1	US1_RX	ADC0_CH1
8	PD2	US1_CLK	ADC0_CH2
10	PD3	US1_CS	ADC0_CH3
12	PD4	LEU0_TX	ADC0_CH4
14	PD5	LEU0_RX	ADC0_CH5
16	PD6	I2C0_SDA#1	
18	5V		
20	3V3		

Bottom Row			
1	GND		ACMP0_CH4
3	PC0		ACMP0_CH5
5	PC3		ACMP1_CH4
7	PC4		ACMP0_O
9	PC5		DAC0_OUT0
11	PB11		DAC0_OUT1
13	PB12		
15	PD7	I2C0_SCL#1	
17		Reserved for EXP Board Identification	
19		Reserved for EXP Board Identification	

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User Interface

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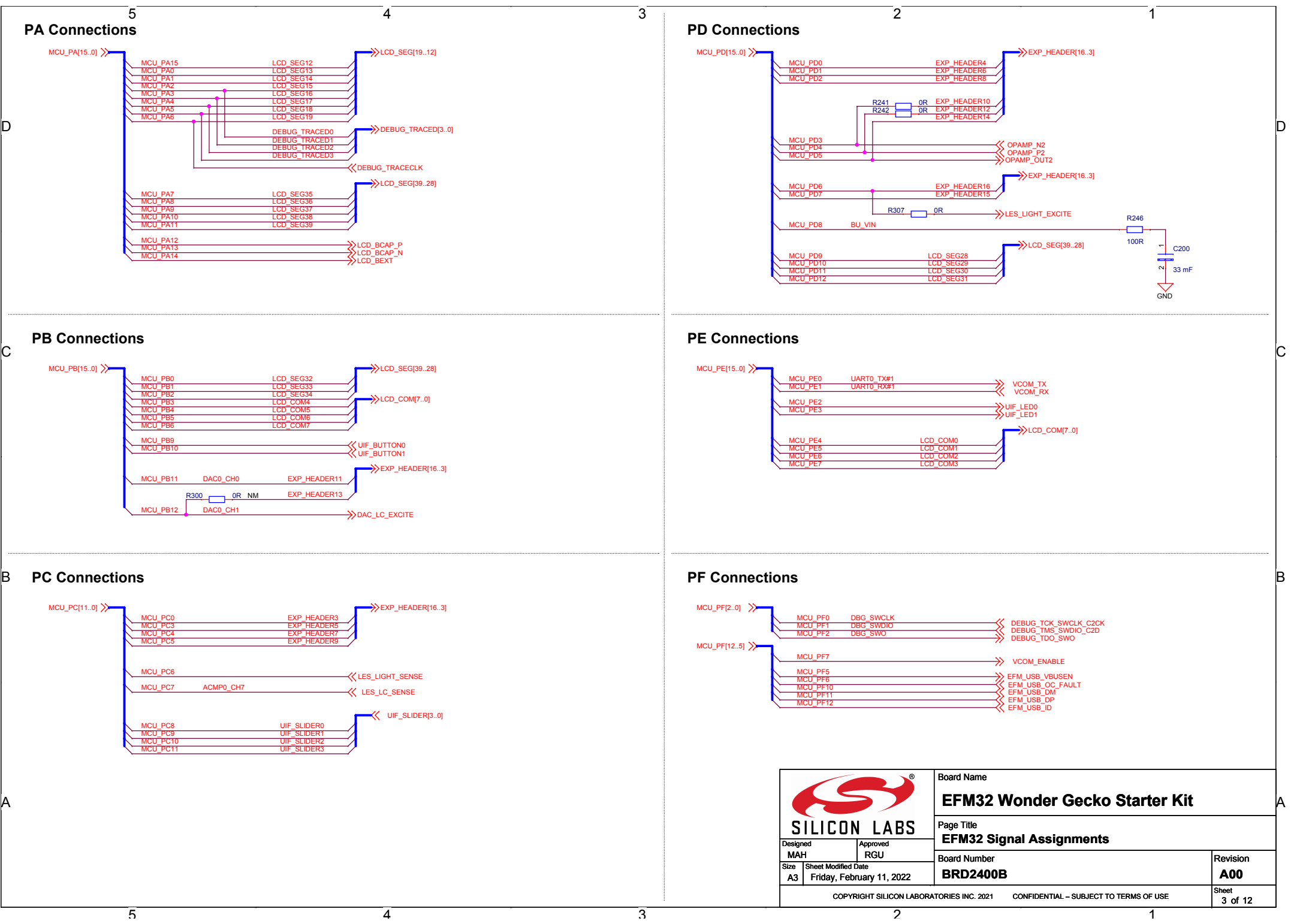
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PB Connections

MCU_PB[15..0]

MCU_PB0

MCU_PB1

MCU_PB2

MCU_PB3

MCU_PB4

MCU_PB5

MCU_PB6

MCU_PB9

MCU_PB10

MCU_PB11

MCU_PB12

LCD_SEG32

LCD_SEG33

LCD_SEG34

LCD_COM4

LCD_COM5

LCD_COM6

LCD_COM7

UIF_BUTTON0

UIF_BUTTON1

EXP_HEADER11

EXP_HEADER13

DAC0_CH0

DAC0_CH1

LCD_SEG[39..28]

LCD_COM[7..0]

EXP_HEADER[16..3]

EXP_HEADER16

EXP_HEADER15

LES_LIGHT_EXCITE

LCD_SEG[39..28]

PC Connections

MCU_PC[11..0]

MCU_PC0

MCU_PC3

MCU_PC4

MCU_PC5

MCU_PC6

MCU_PC7

MCU_PC8

MCU_PC9

MCU_PC10

MCU_PC11

EXP_HEADER3

EXP_HEADER5

EXP_HEADER7

EXP_HEADER9

LES_LIGHT_SENSE

LES_LC_SENSE

UIF_SLIDER0

UIF_SLIDER1

UIF_SLIDER2

UIF_SLIDER3

EXP_HEADER[16..3]

LES_LIGHT_SENSE

LES_LC_SENSE

UIF_SLIDER[3..0]

PE Connections

MCU_PE[15..0]

MCU_PE0

MCU_PE1

MCU_PE2

MCU_PE3

MCU_PE4

MCU_PE5

MCU_PE6

MCU_PE7

UART0_TX#1

UART0_RX#1

UIF_LED0

UIF_LED1

LCD_COM0

LCD_COM1

LCD_COM2

LCD_COM3

VCOM_TX

VCOM_RX

UIF_LED0

UIF_LED1

LCD_COM[7..0]

PF Connections

MCU_PF[2..0]

MCU_PF0

MCU_PF1

MCU_PF2

DBG_SWCLK

DBG_SWDIO

DBG_SWO

DEBUG_TCK_SWCLK_C2CK

DEBUG_TMS_SWDIO_C2D

DEBUG_TDO_SWO

MCU_PF[12..5]

MCU_PF7

MCU_PF5

MCU_PF6

MCU_PF10

MCU_PF11

MCU_PF12

VCOM_ENABLE

EFM_USB_VBUSEN

EFM_USB_OC_FAULT

EFM_USB_DM

EFM_USB_DP

EFM_USB_ID

VCOM_ENABLE

EFM_USB_VBUSEN

EFM_USB_OC_FAULT

EFM_USB_DM

EFM_USB_DP

EFM_USB_ID

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EFM32 Signal Assignments

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BRD2400B

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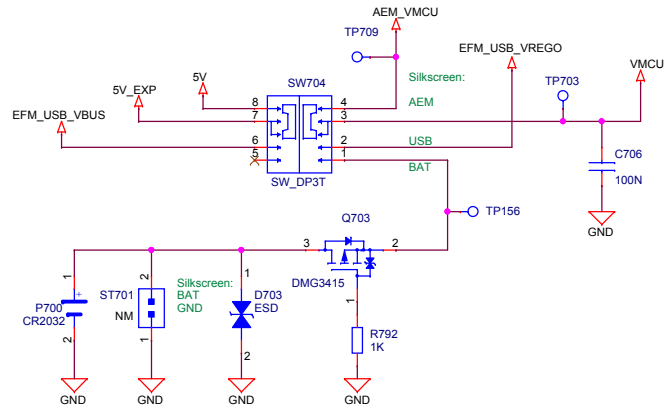
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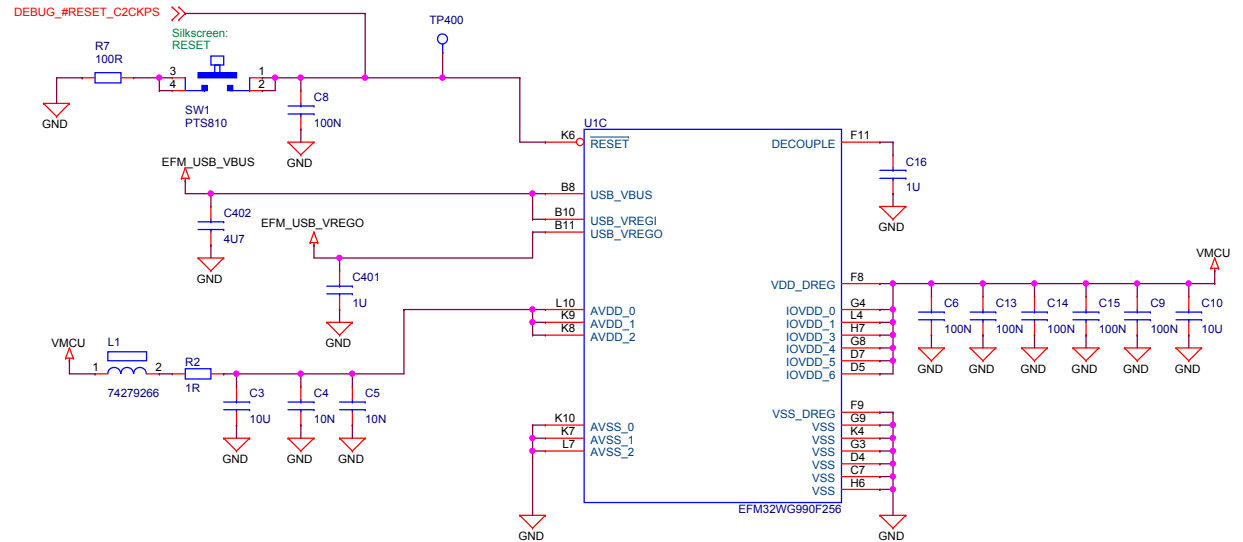
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Power Selection Switch: AEM/USB/BAT

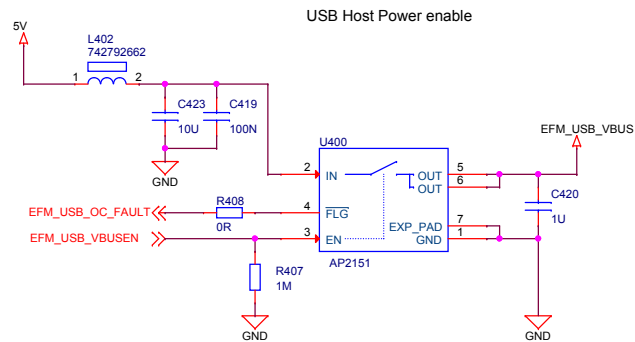
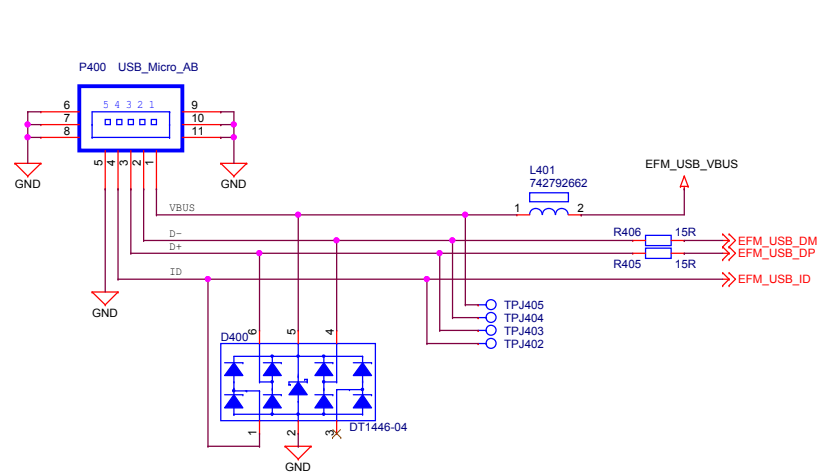



SWITCH POS	MODE DESCRIPTION
AEM	AEM Enabled, VMCU sourced from external 3.3V LDO powered by BC USB 5V supply
USB	AEM Disabled, VMCU sourced from internal 3.3V LDO powered by MCU USB 5V supply, EXP header and breakout 5V sourced from MCU USB 5V supply
BAT	AEM Disabled, VMCU sourced from coin-cell battery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

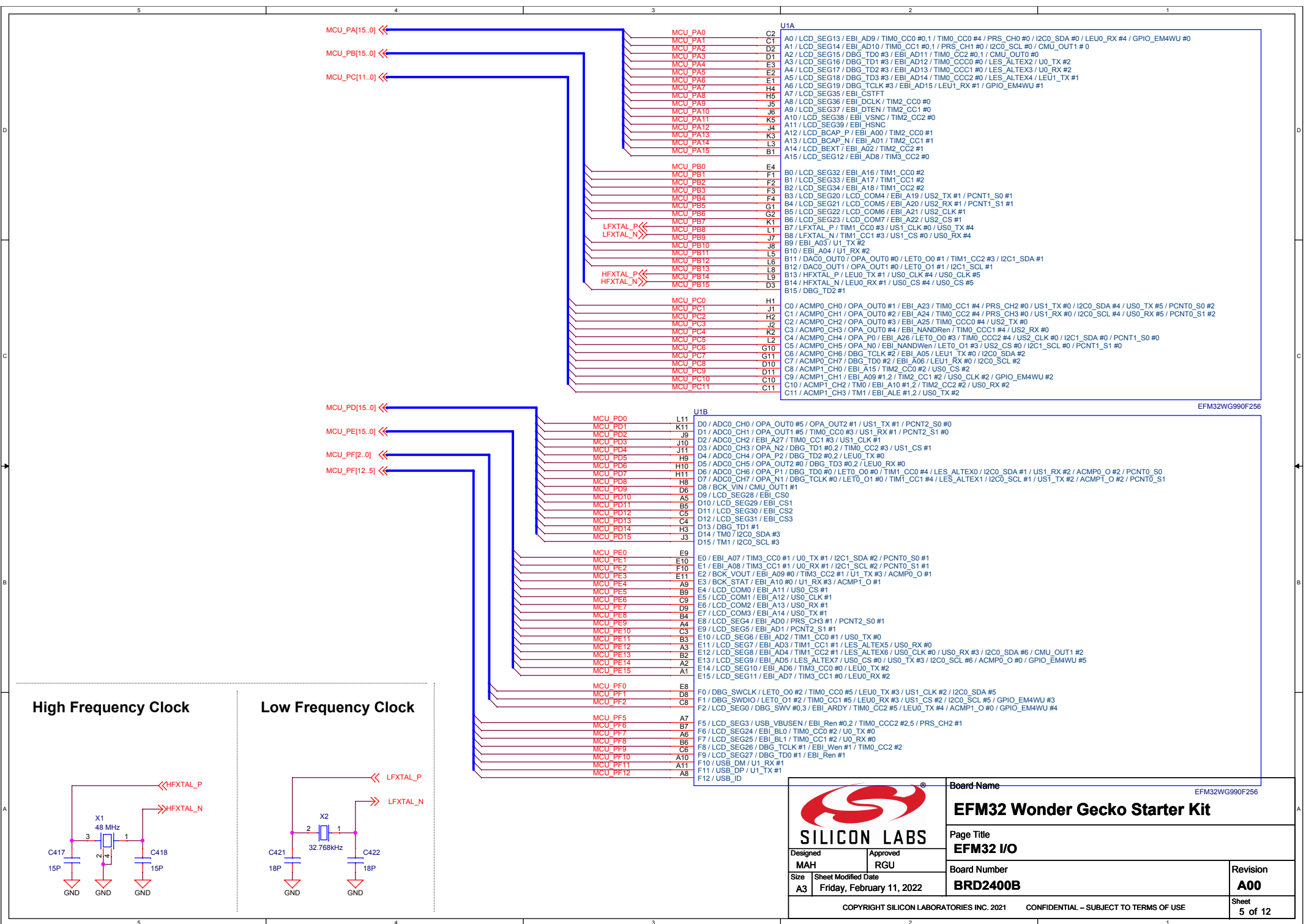
EFM32 Power and Decoupling



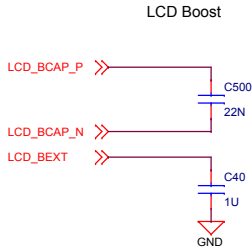
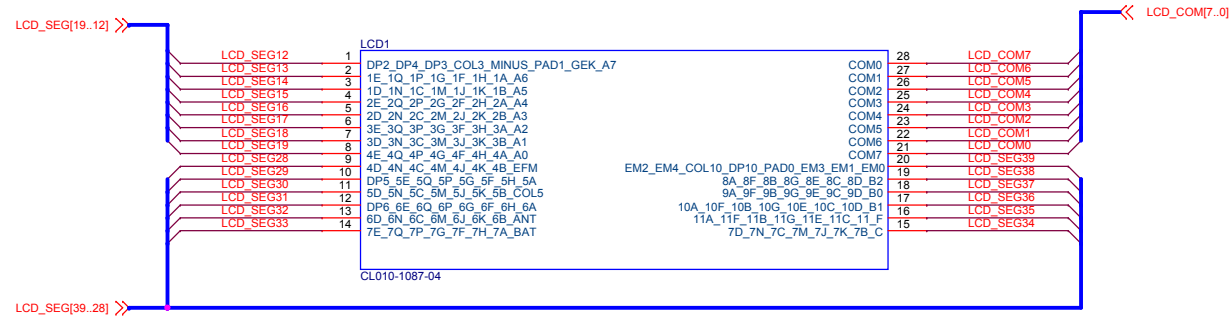
EFM32 USB Interface



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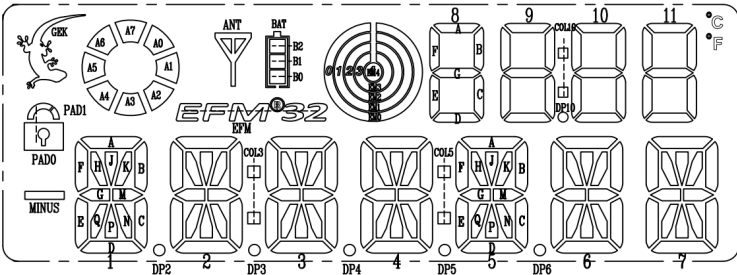
Segment LCD Signal Connections



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								COM0
COM1	7 N	11 F	10 F	9 F	8 F	EM4							COM1	
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							





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Segment LCD

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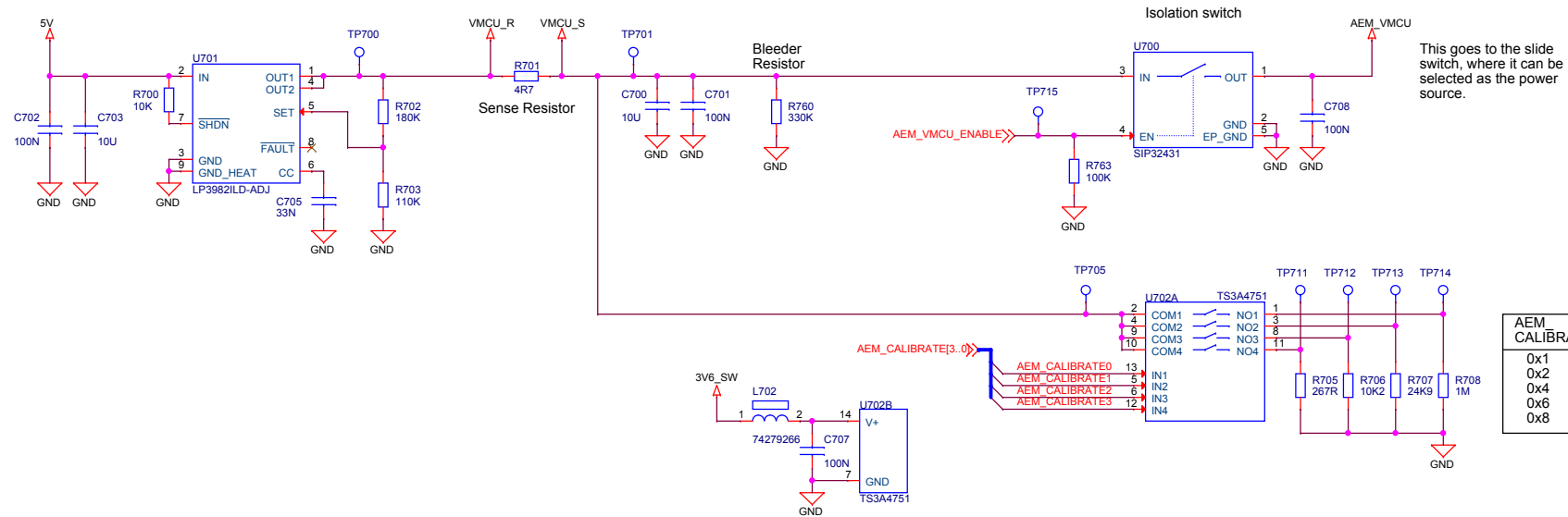
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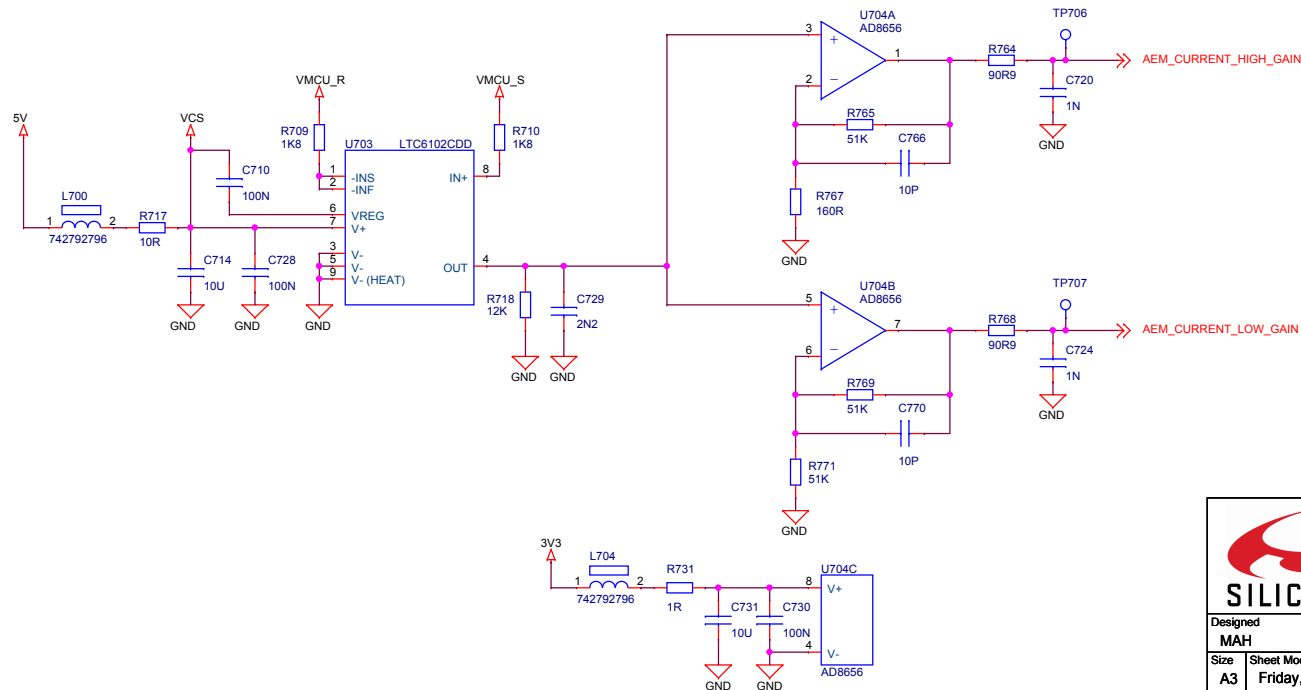
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5 MCU Power Regulator



AEM CALIBRATE	Current
0x1	3.30 uA
0x2	132.5 uA
0x4	323.5 uA
0x6	456.1 uA
0x8	12.36 mA

Advanced Energy Monitoring



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Target Voltage Supply & AEM

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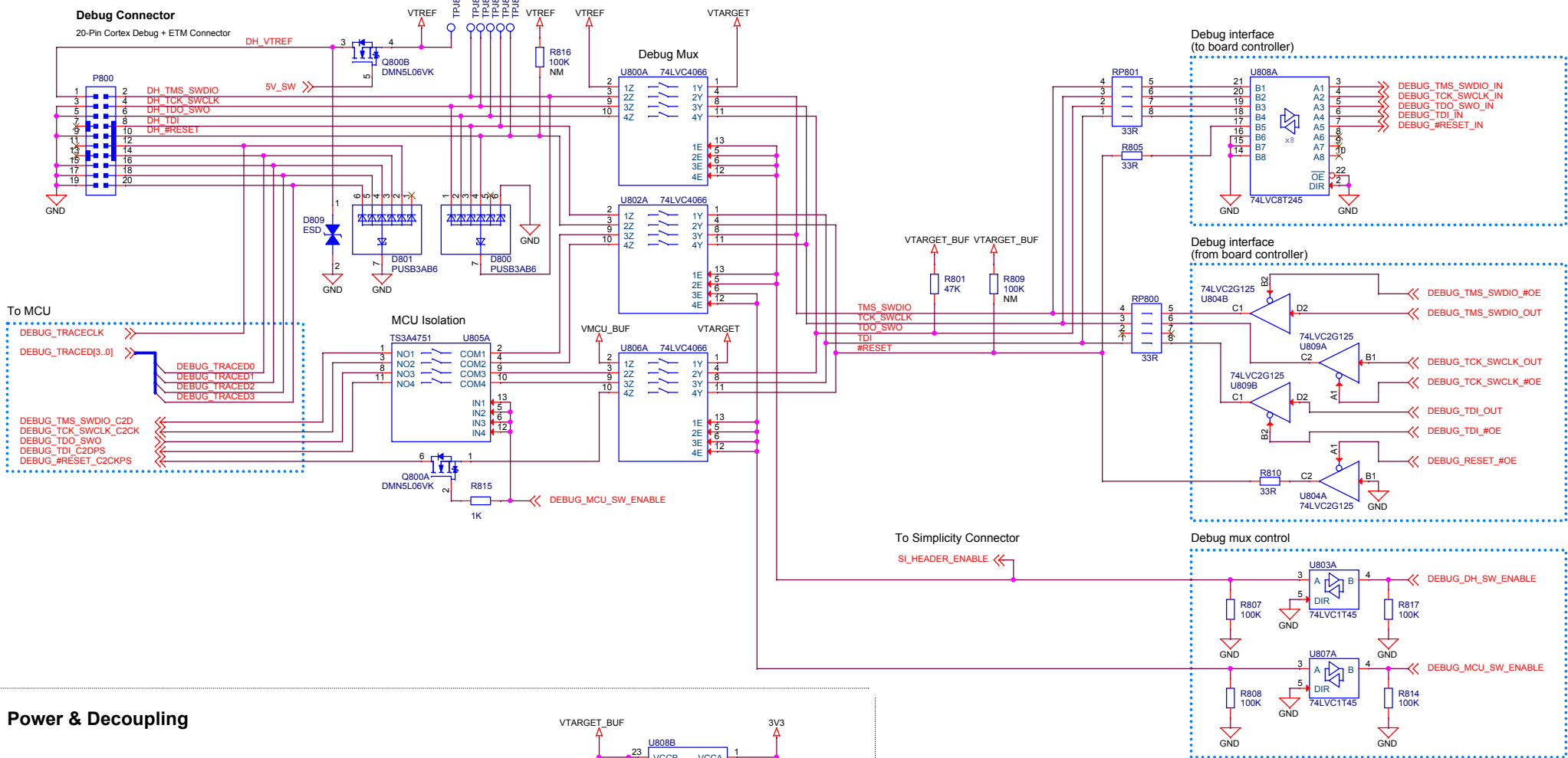
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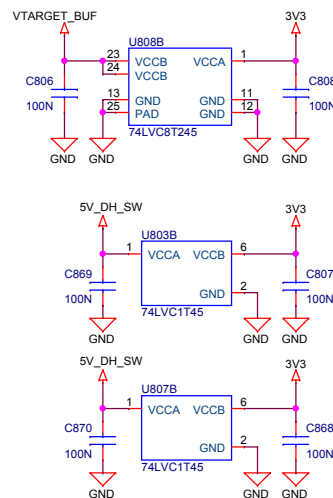
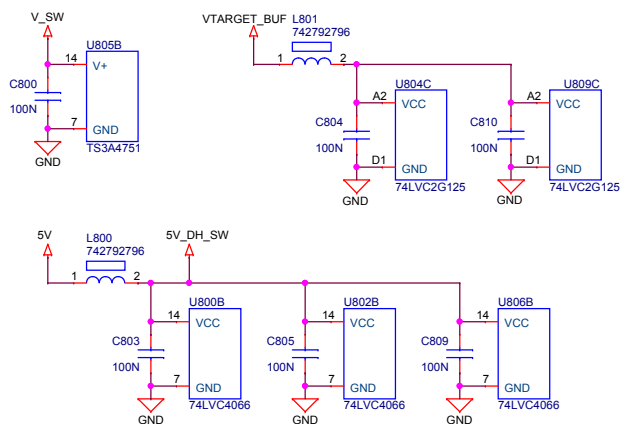
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Debug Mux



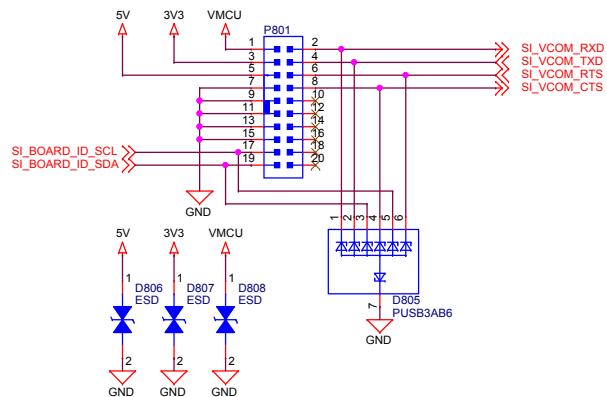
Power & Decoupling



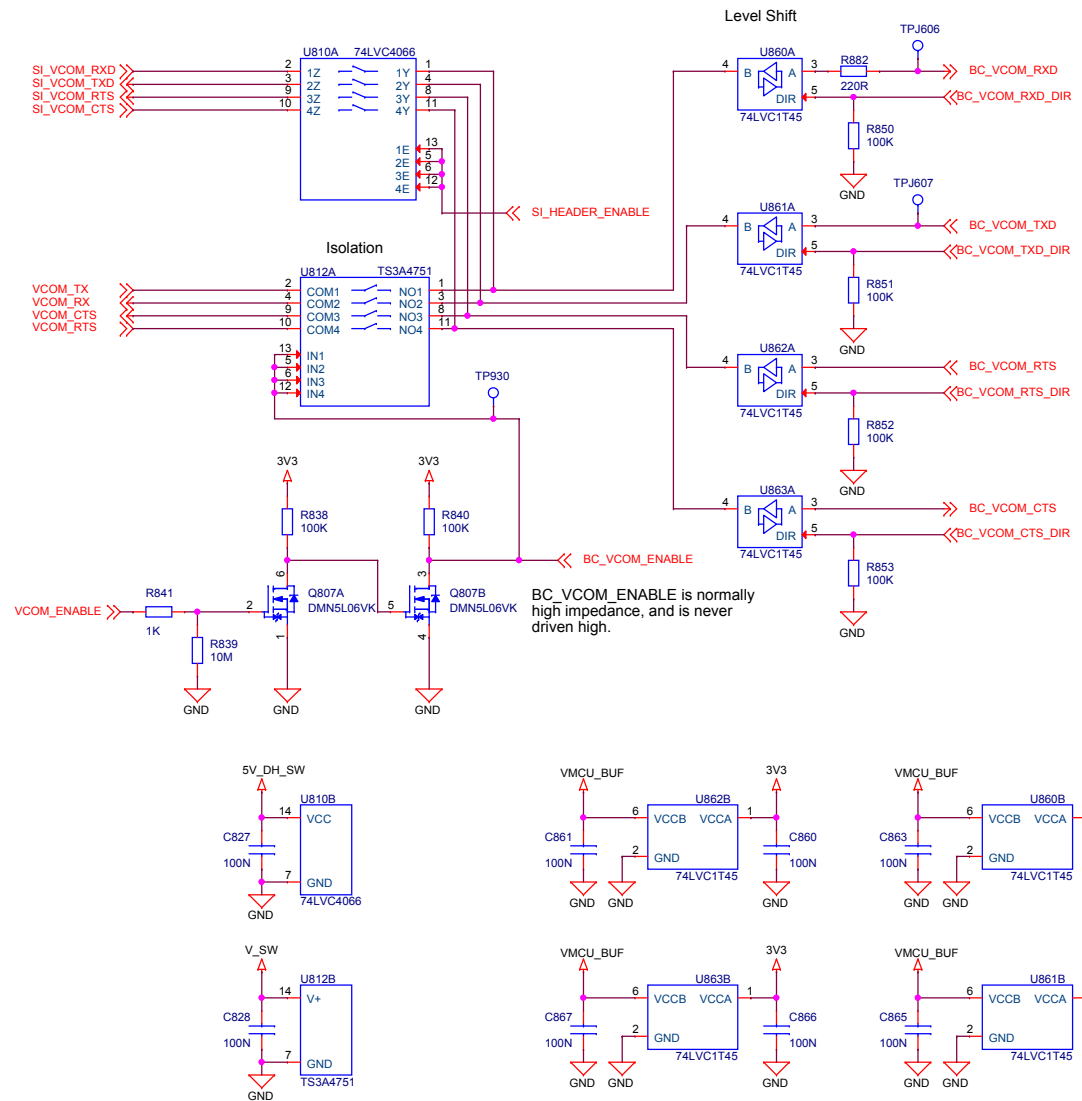
Debug Mode	DH_SW_ENABLE	MCU_SW_ENABLE	Debug Mode	VTARGET Source	VTREF Source
MCU	0	1	MCU	VMCU	None
Debug Out	1	0	Debug Out	VTREF (EXT)	External
Debug In	1	1	Debug In	VMCU	VMCU_BUF
Debug Off	0	0	Debug Off	None	None


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Simplicity Connector



VCOM Interface



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BC Serial Flash

BC_SPL_COP1
BC_SPL_SCLK
BC_SPL_CS
BC_SPL_CIPO

U902A
SI / SIO0
SCLK
CS#
WP# / SIO2
RESET# / SIO3
MX25R8035F

U902B
VCC
GND
MX25R8035F

3V3
3V3
3V3
GND

R906 10K
C914 100N

Board Version

BOARD_VER0
BOARD_VER1

R931 1K
R930 1K

GND GND

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BC Serial Flash

BC_SPL_COP1
BC_SPL_SCLK
BC_SPL_CS
BC_SPL_CIPO

U902A
SI / SIO0
SCLK
CS#
WP# / SIO2
RESET# / SIO3
MX25R8035F

U902B
VCC
GND
MX25R8035F

3V3
3V3
3V3
GND

R906 10K
C914 100N

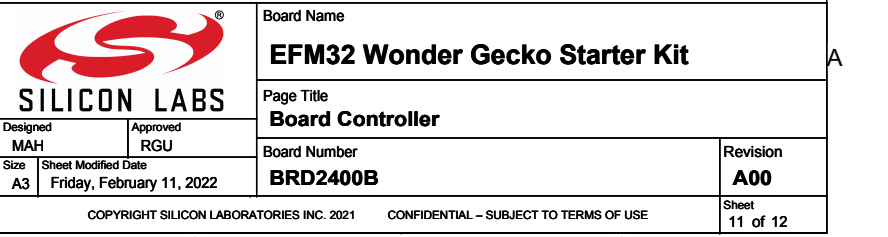
Board Version

BOARD_VER0
BOARD_VER1

R931 1K
R930 1K

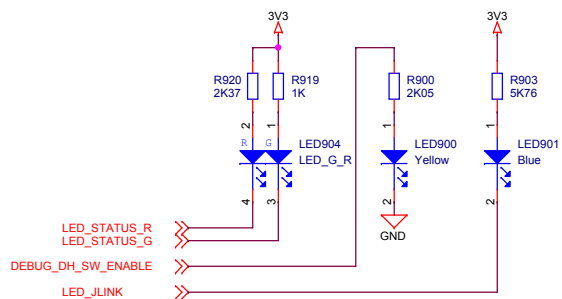
GND GND

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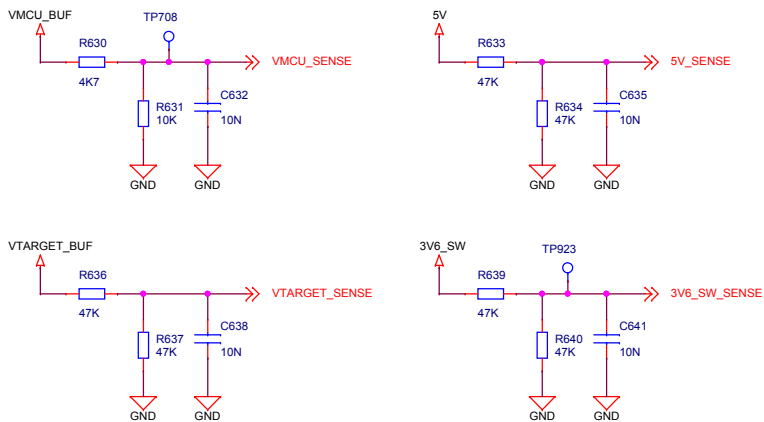


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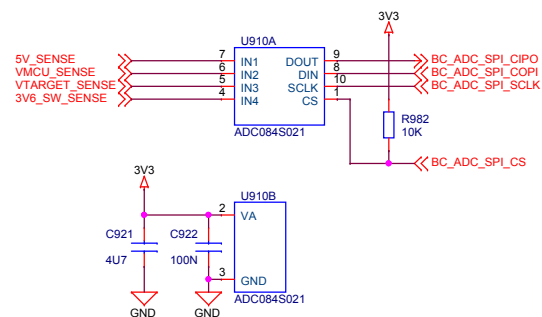
Indicator LEDs



BC Voltage Sense



BC Voltage Sense ADC



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