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Revision History	
Rev.	Description
A00	Initial version.
A01	Bump U1 revision.
A02	Not mount clamping diodes for ADC input.
A03	Remove AEM bypass, clamping diodes.
A04	Updated U1 OPN.

		Board Name	
		EFM32PG23 Pro Kit	
Designed MAH		Approved RGU	
Size A3	Sheet Modified Date Friday, April 29, 2022	Board Number BRD2504A	
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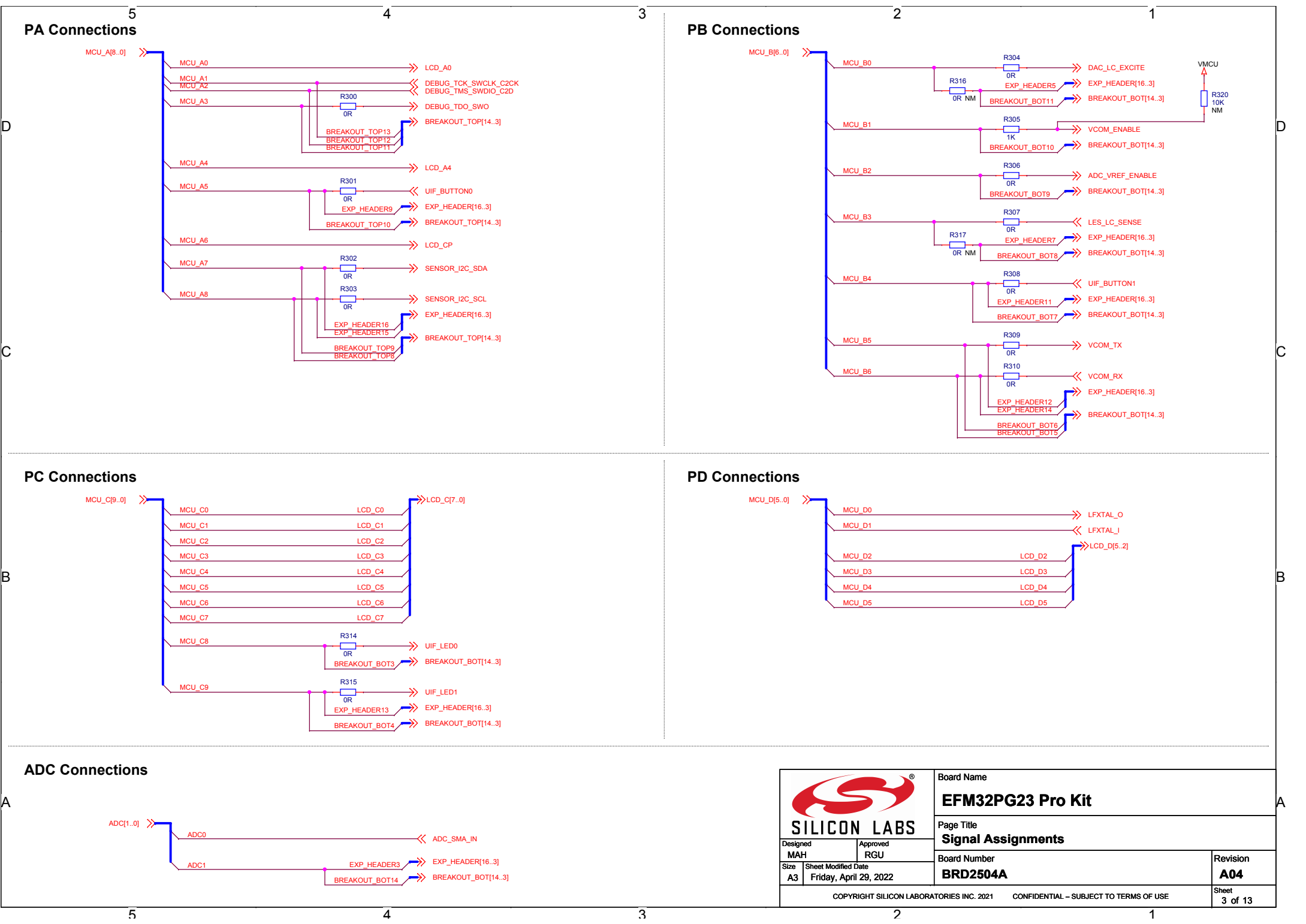


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PA Connections

PB Connections

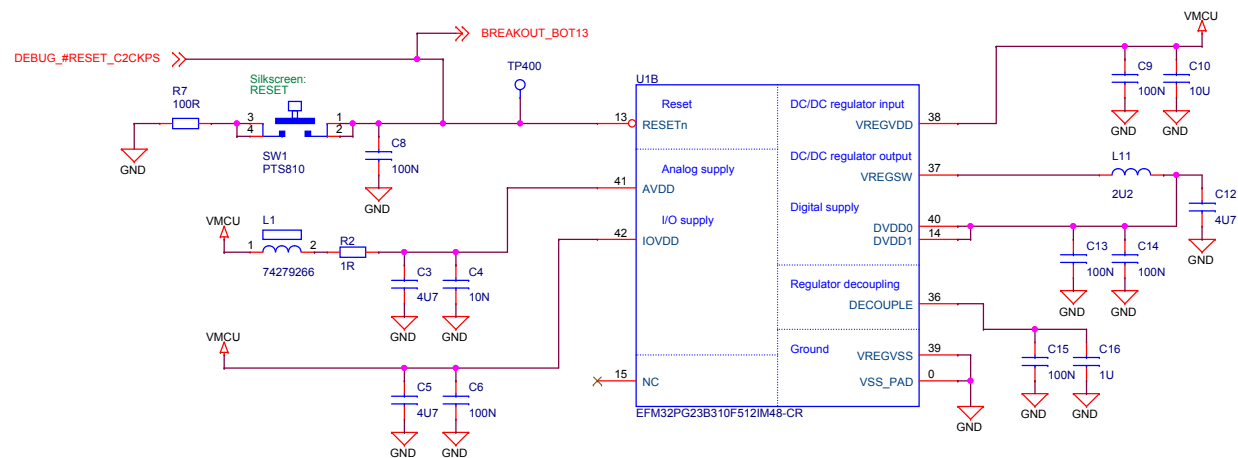
PC Connections

PD Connections

ADC Connections

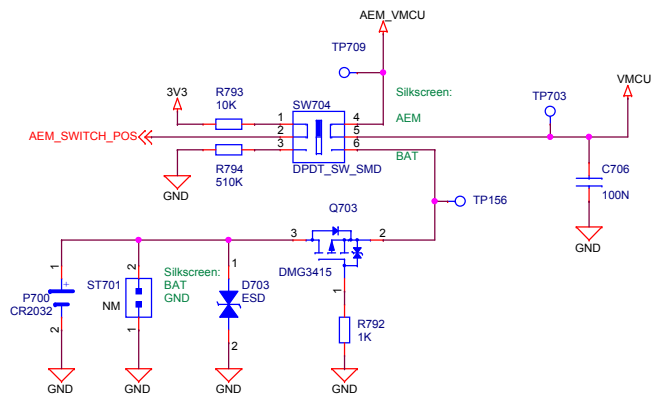
 SILICON LABS		Board Name EFM32PG23 Pro Kit	
		Page Title Signal Assignments	
Designed MAH	Approved RGU	Board Number BRD2504A	Revision A04
Size A3	Sheet Modified Date Friday, April 29, 2022	Copyright Silicon Laboratories Inc. 2021 CONFIDENTIAL – SUBJECT TO TERMS OF USE	
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EFM32 Power and Decoupling

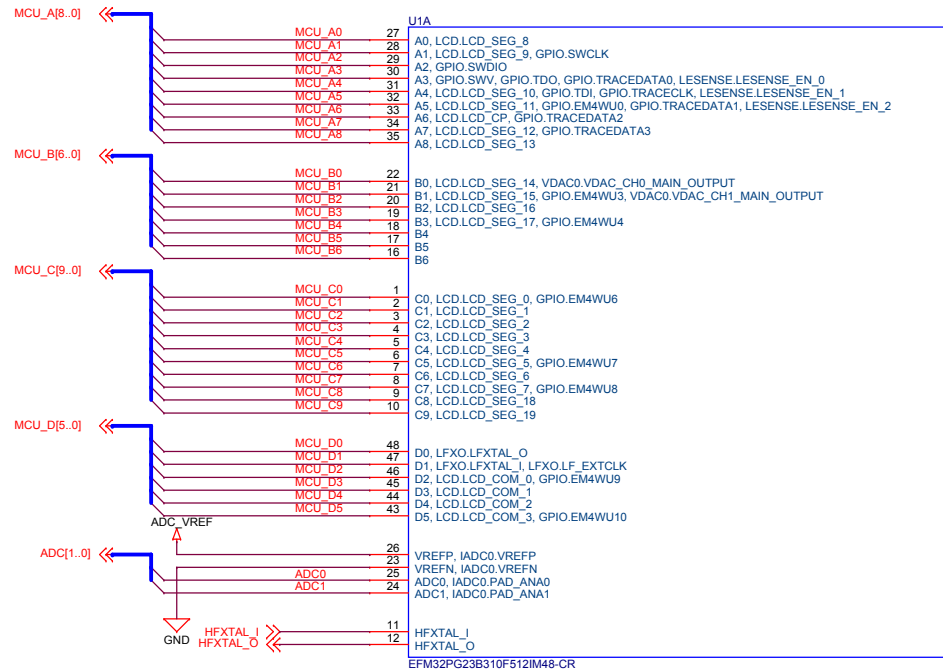


Power Select Switch: AEM/BAT

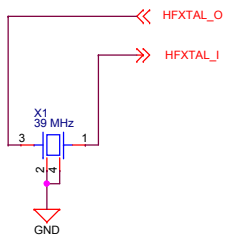
SWITCH POS	MODE DESCRIPTION
AEM	AEM Enabled, VMCU sourced from external 3.3V LDO powered by BC USB 5V supply
BAT	AEM Disabled, VMCU sourced from coin-cell battery or external power supply



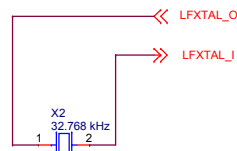
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		Page Title EFM32 Power	
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High Frequency Clock

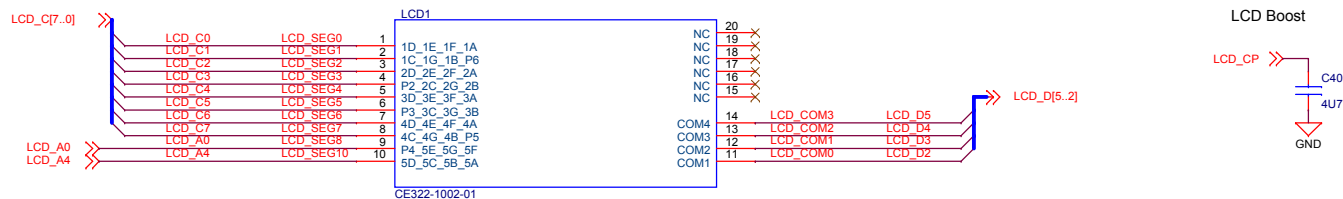


Low Frequency Clock



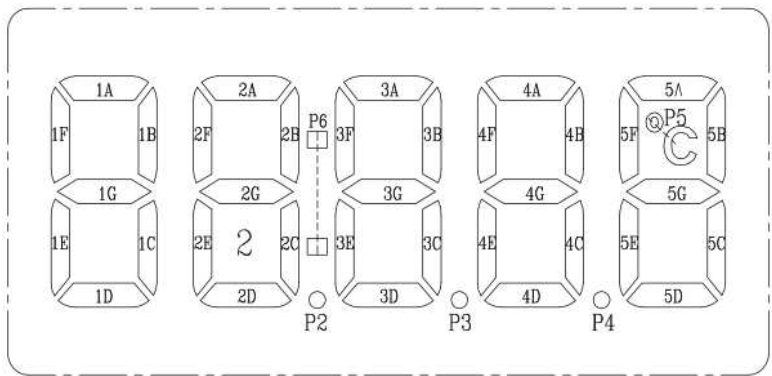
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MAH		EFM32 I/O	
Size		Board Number	
A3		BRD2504A	
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Segment LCD Signal Connections



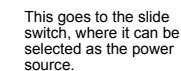
Segment Names

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
COM1	1D	1C	2D	P2	3D	P3	4D	4C	P4	5D	COM1	--	--	--	--	--	--	--	--	--
COM2	1E	1G	2E	2C	3E	3C	4E	4G	5E	5C	--	COM2	--	--	--	--	--	--	--	--
COM3	1F	1B	2F	2G	3F	3G	4F	4B	5G	5B	--	--	COM3	--	--	--	--	--	--	--
COM4	1A	P6	2A	2B	3A	3B	4A	P5	5F	5A	--	--	--	COM4	--	--	--	--	--	--



 SILICON LABS		Board Name	
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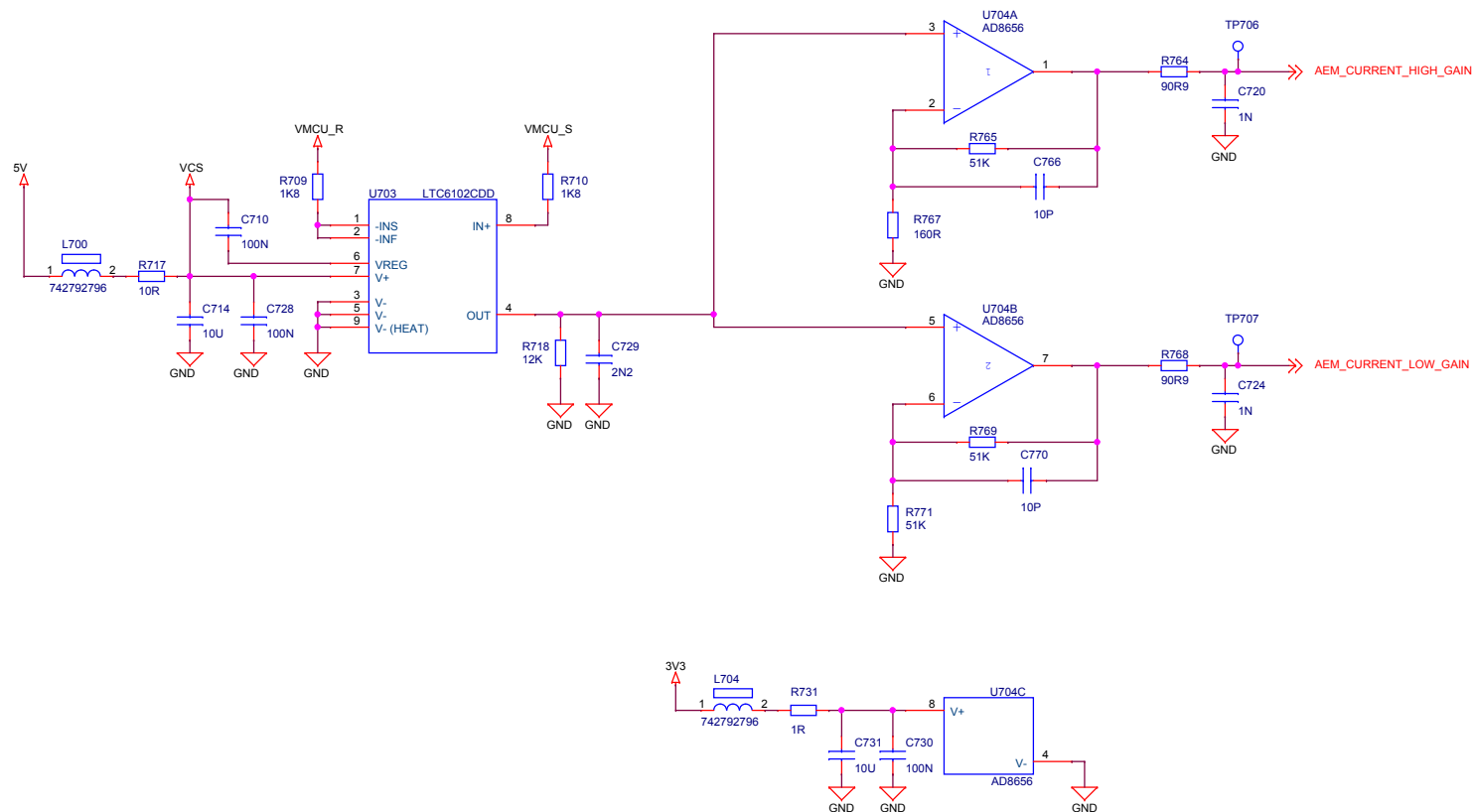
A



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



MCU Current Sense



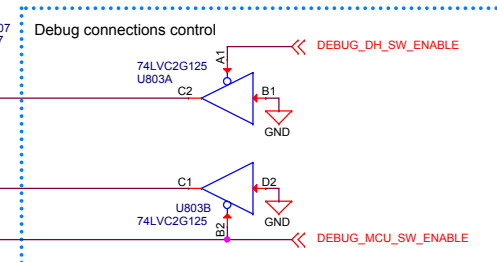
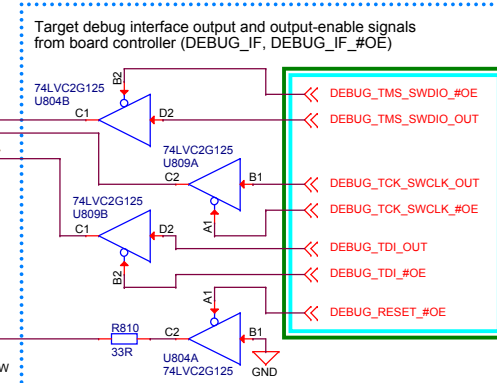
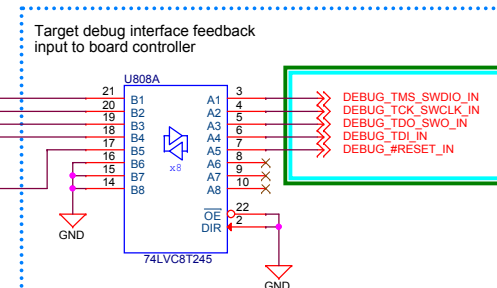
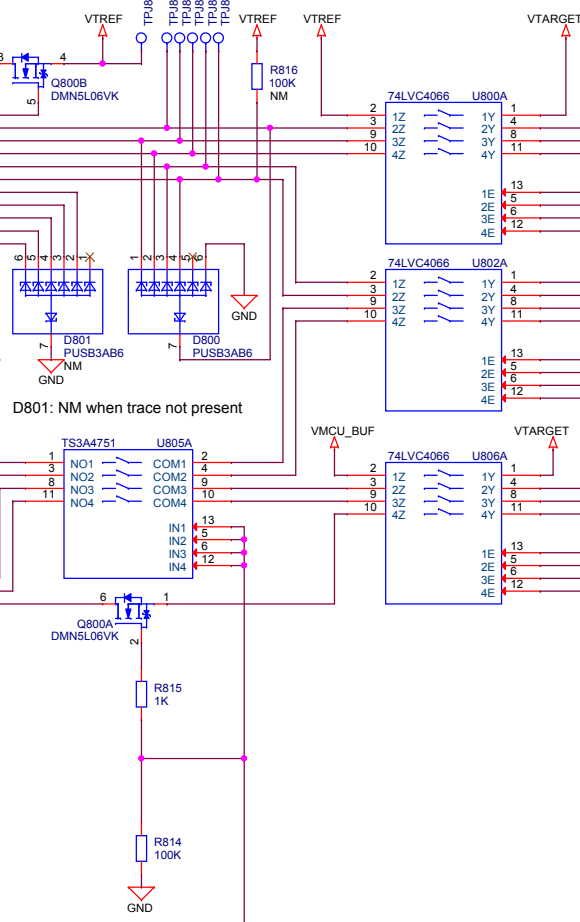
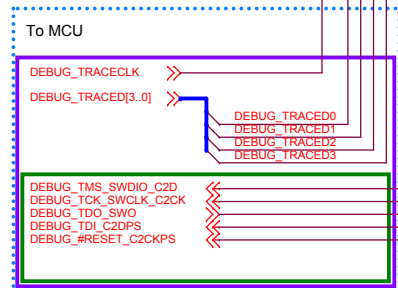
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		EFM32PG23 Pro Kit	
Designed MAH		Page Title	
Size A3		AEM	
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ARM Coresight 20-pin
Debug + ETM header

P800

Pin	Signal
1	DH TMS SWDIO
2	DH TCK SWCLK
3	DH TDO SWO
4	DH TDI
5	DH #RESET
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

GND

[illegible]

Mode	DEBUG_DH_SW_ENABLE	DEBUG_MCU_SW_ENABLE	DEBUG_IF_#OE	VTREF	VTARGET
Debug Out	1	0	0/1	External voltage	External voltage
MCU Debug	0	1	0/1	Disconnected	VMCU
Debug In	1	1	1	VMCU	VMCU
Debug Off	0	0	1	-	-

Color coded frames indicates which groups of signal nodes that are active in a given debug mode



Board Name	EFM32PG23 Pro Kit
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Page Title
Debug Interface

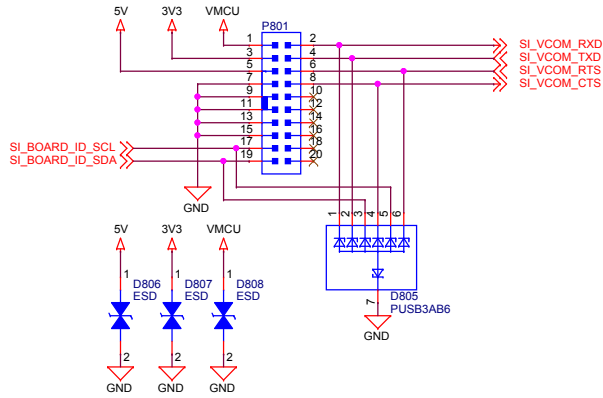
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Revision	A04
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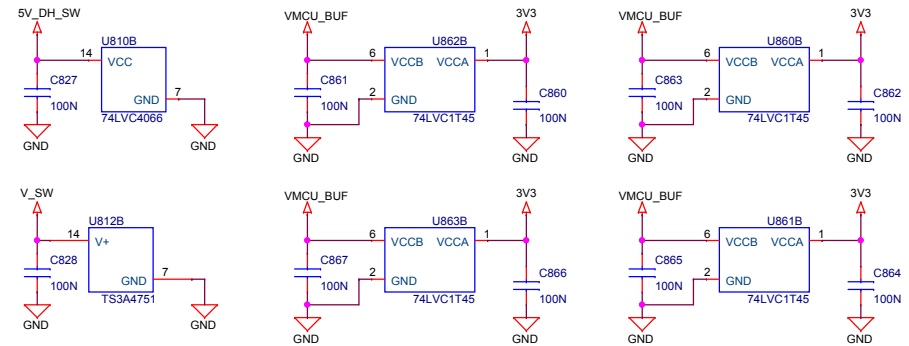
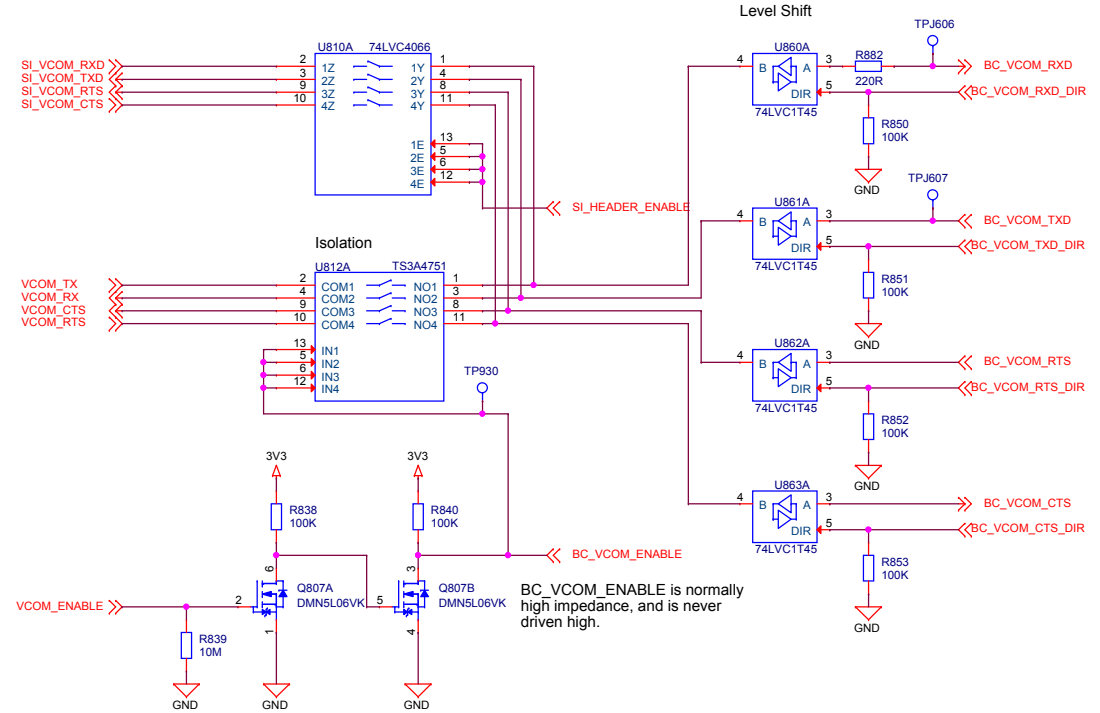
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Simplicity Connector

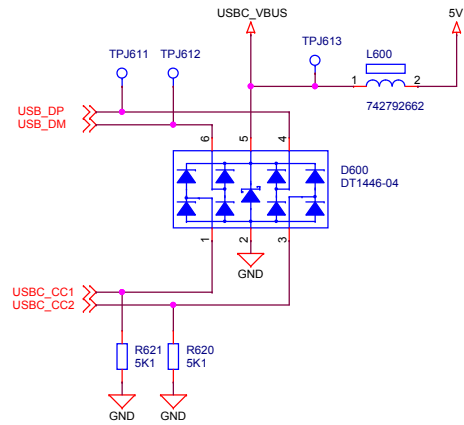
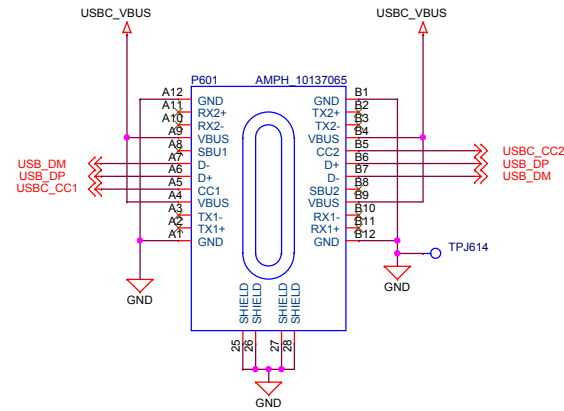


VCOM Interface

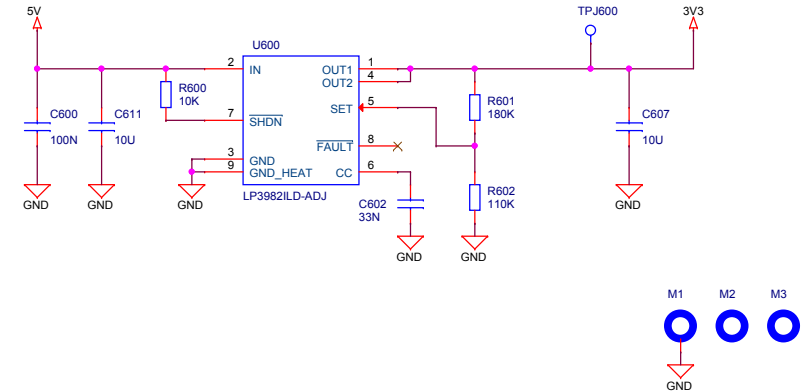


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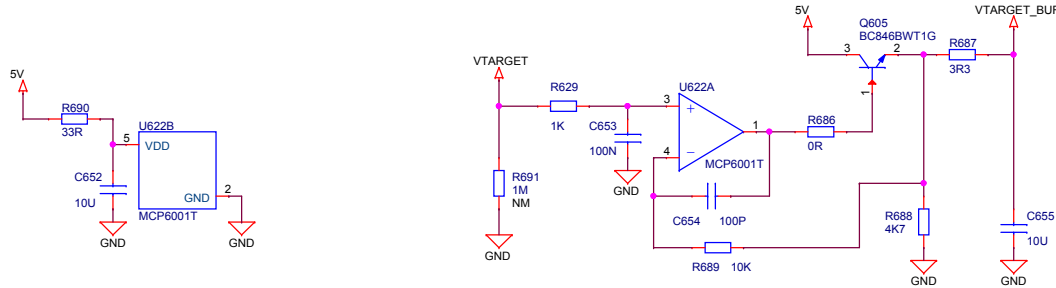
J-Link USB Port



3V3 Regulator



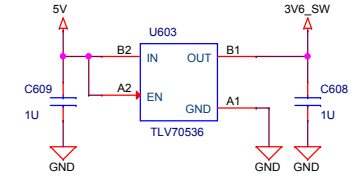
VTarget Voltage Mirror



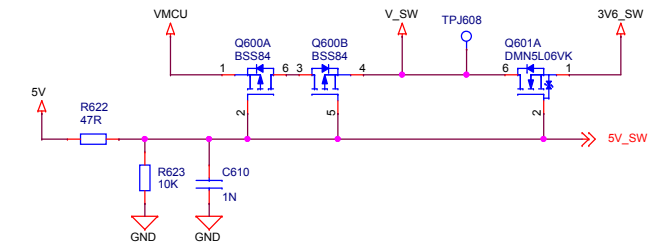
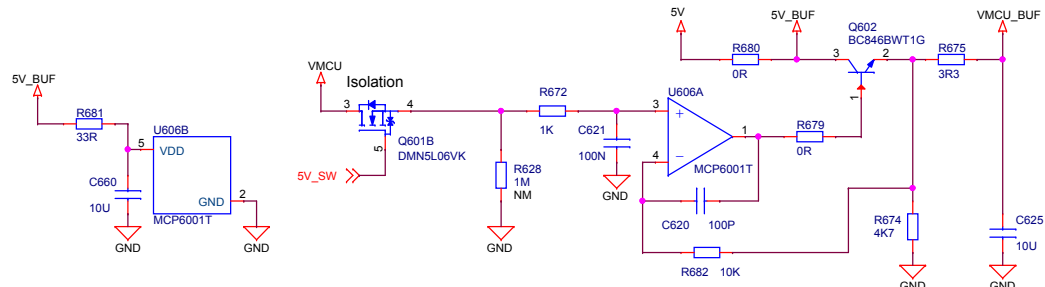
Power Supply for Analog Switches

Analog switches used for isolation are powered by 3V6_SW when the USB cable is connected, otherwise by VMCU.

J-Link USB Cable	PMOS State	NMOS State	V_SW	VMCU_SENSE
Connected	Off	On	3.6V	VMCU
Disconnected	On	Off	VMCU	Isolated



VMCU Voltage Mirror



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[illegible]

Board ID & Button Isolation

BOARD_ID_SDA
BOARD_ID_SCL
3V3
3V3
R907 4K7
R908 4K7
U901A
SDA
SCL
A0
A1
A2
WP
M24C02
3V3
R909 10K
BOARD_ID_WP
GND
3V3
3V3
R951 100K NM
R952 100K NM
BC_UIF_BUTTON0
BC_UIF_BUTTON1
BC_I2C_EXP_ENABLE
BC_BUTTON_ENABLE
R981 100K
R950 100K
GND
GND
U950A
COM1
COM2
COM3
COM4
NO1
NO2
NO3
NO4
TPJ650 TPJ651
SI_BOARD_ID_SDA
SI_BOARD_ID_SCL
BC_I2C_EXP_SDA
BC_I2C_EXP_SCL
TPJ652 TPJ653
UIF_BUTTON0
UIF_BUTTON1
TS3A4751
IN1
IN2
IN3
IN4
GND
GND
U901B
VCC
VSS
M24C02
3V3
C951 100N
GND
GND

BC Serial Flash

3V3
3V3
BC_SPI_COP1
BC_SPI_SCLK
R906 10K
BC_SPI_CS
BC_SPI_CIP0
U902A
SI / SIO0
SCLK
CS#
SO / SIO1
WP# / SIO2
RESET# / SIO3
MX25R8035F
C3
3V3
C914 100N
U902B
VCC
GND
B2
MX25R8035F
GND
GND

Board Version

BOARD_V0
BOARD_V1
R931 1K
R930 1K
GND
GND

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Designed
MAH

Approved
RGU

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A3

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Board Name
EFM32PG23 Pro Kit

Page Title
Board Controller

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BRD2504A

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BC Serial Flash

The schematic diagram illustrates the BC Serial Flash circuit. It features two MX25R8035F flash memory chips, U902A and U902B. U902A is connected to BC_SPI_COP1, BC_SPI_SCLK, BC_SPI_CS, and BC_SPI_CPO. U902B is connected to BOARD_VER0, BOARD_VER1, and GND. The diagram includes 3V3 power supply, pull-up resistors R906, R931, and R930, and a capacitor C914.

Board Version

The Board Version section shows the connection of BOARD_VER0 and BOARD_VER1 to the flash memory chips. BOARD_VER0 is connected to U902A and BOARD_VER1 is connected to U902B. The diagram includes pull-up resistors R931 and R930, and a capacitor C914.

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M32PG23 Pro Kit	
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BC Serial Flash

BC_SPI_COP1
BC_SPI_SCLK
3V3
R906 10K
BC_SPI_CS
BC_SPI_CPO
U902A
SI / SIO0
SCLK
CS#
WP# / SIO2
RESET# / SIO3
MX25R8035F
C3
3V3
U902B
VCC
GND
B2
MX25R8035F
C914 100N
GND
GND
BOARD_VER0
BOARD_VER1
R931 1K
R930 1K
GND
GND

Board Version

BOARD_VER0
BOARD_VER1
R931 1K
R930 1K
GND
GND

Name

FM32PG23 Pro Kit

Title

ard Controller

l Number

D2504A

Revision

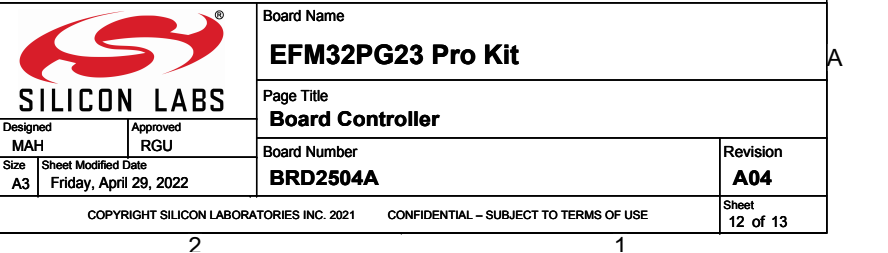
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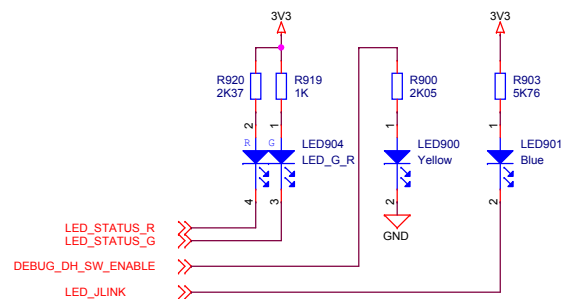
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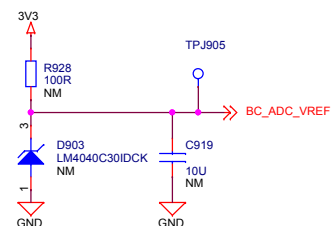
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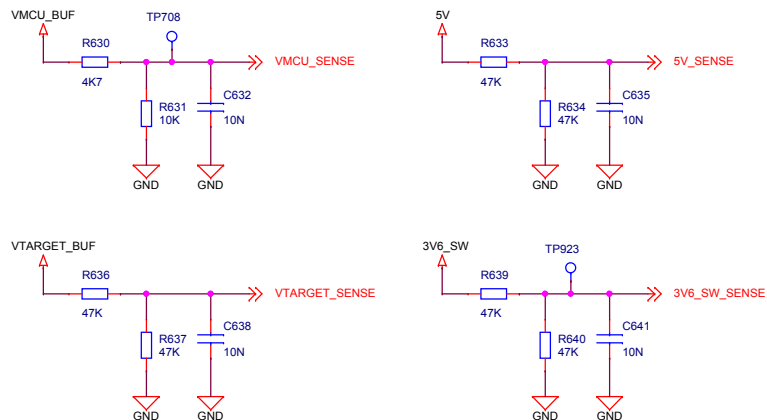
Indicator LEDs



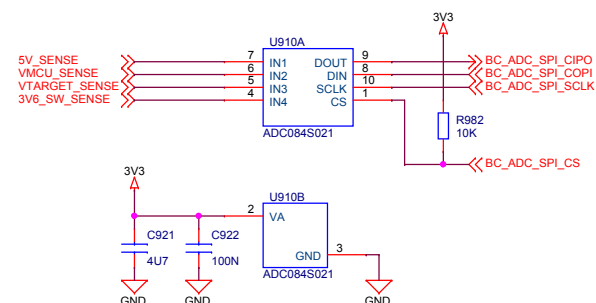
BC ADC Reference



BC Voltage Sense



BC Voltage Sense ADC



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