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EFM32 Giant Gecko STK

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Revision History

Rev.	Description
A00	Incorporated new AEM solution. Added capacitor for backup power domain.
A01	Cleanup of unused parts. Removed legacy AEM and sense range 3.
A02	Updated EFM32 to Giant Gecko Rev.D
A03	Fixed PCB error. Added test points for EFM32 USB. Update: Fixed EXP pinout description (documentation change only)

STK

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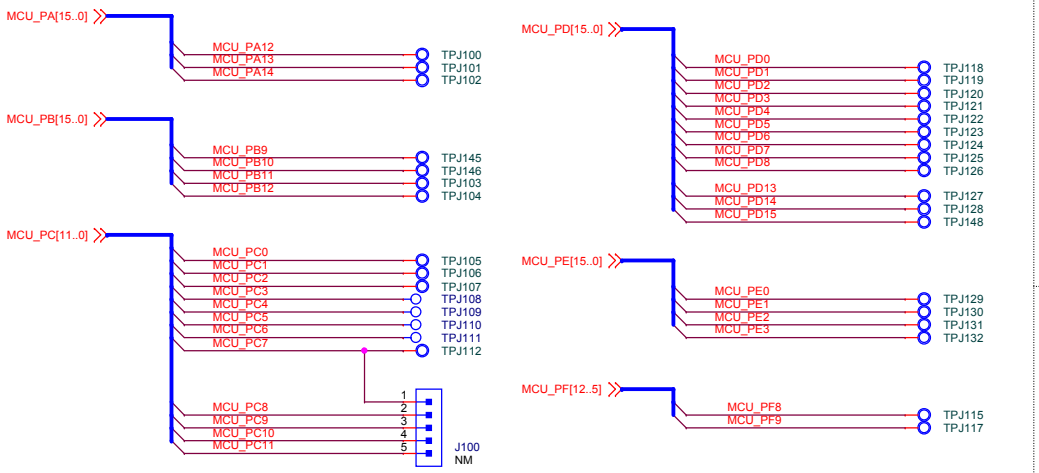
Designed: DDB	Approved: JNO
Size A3	BOM Doc No:
Design Created Date: Wednesday, December 03, 2008	

Schematic Title: **EFM32 Giant Gecko Starter Kit**

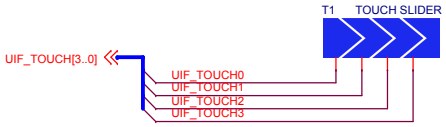
Page Title: **Title Page**

Document number: **BRD2200A**		Revision: A03
Sheet Created Date: Saturday, March 21, 2009	Sheet Modified Date: Tuesday, April 18, 2017	Sheet 1 of 10

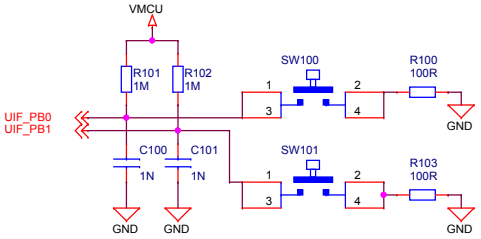
Breakout Connections



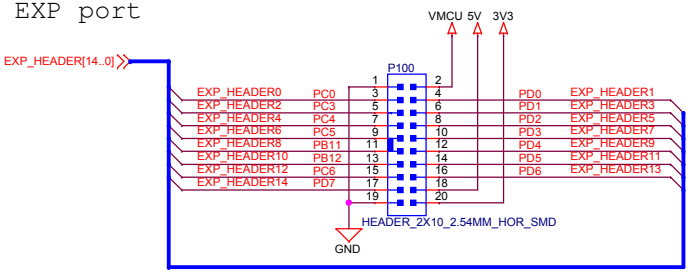
Touch Slider



User pushbuttons



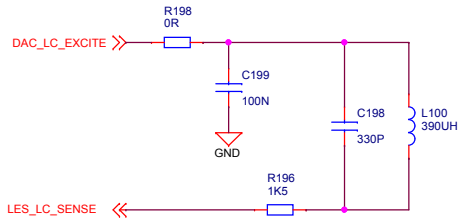
EXP port



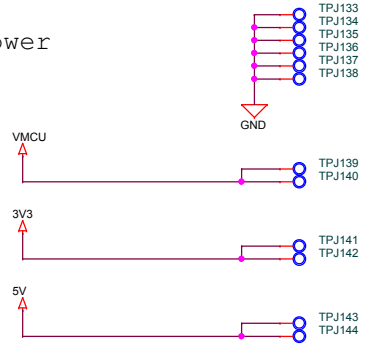
EXP Communication

SPI	MOSI-PD0 MISO-PD1 CLK-PD2 CS-PD3
I2C1	SDA-PC4 SCL-PC5
UART	TX-PD0 RX-PD1
LEUART	TX-PD4 RX-PD5

LESENSE LC-Sensor



Power



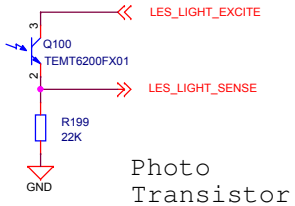
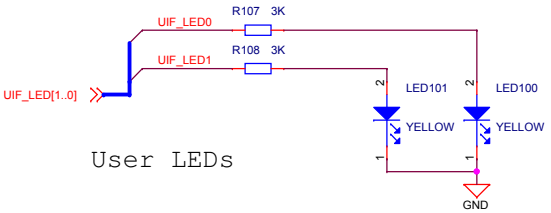
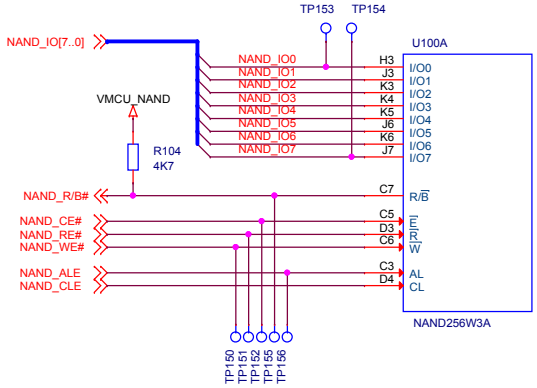


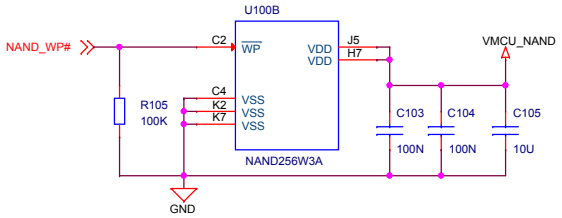
Photo Transistor

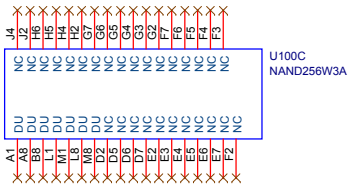


User LEDs

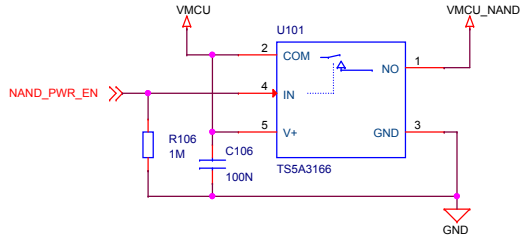
32MB NAND Flash







NAND Power



STK

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Designed: DDB	Approved: JNO
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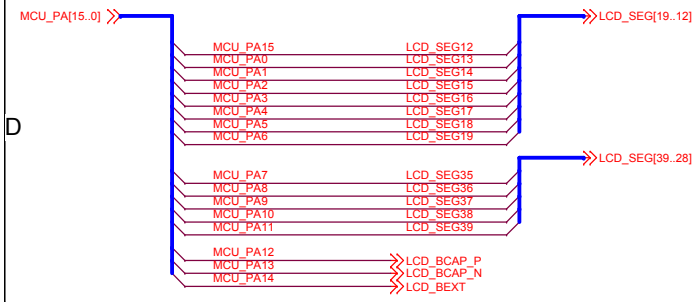
Design Created Date: Wednesday, December 03, 2008	

Schematic Title: **EFM32 Giant Gecko Starter Kit**

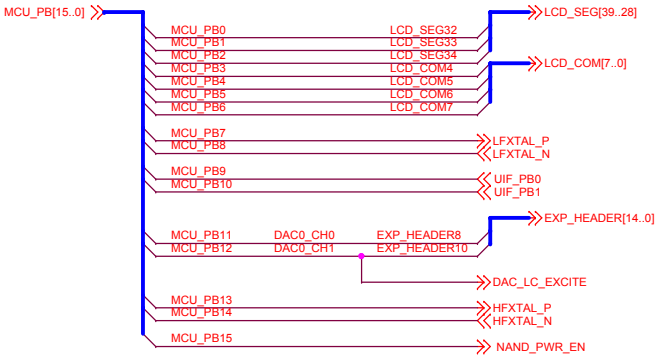
Page Title: **User Interfaces**

Document number: BRD2200A	Revision: A03
Sheet Created Date: Saturday, March 21, 2009	Sheet Modified Date: Tuesday, April 18, 2017
	Sheet 2 of 10

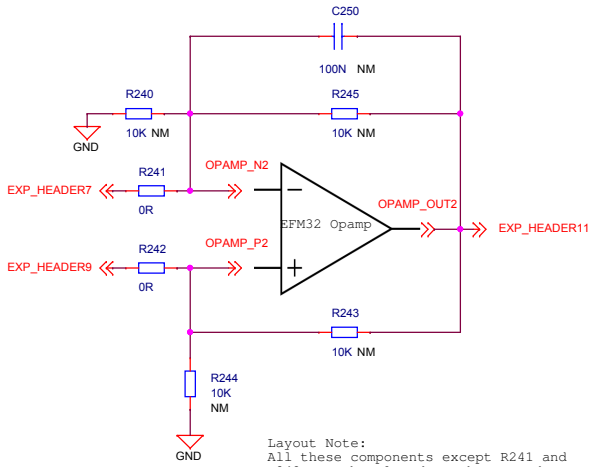
PA Connections



PB Connections

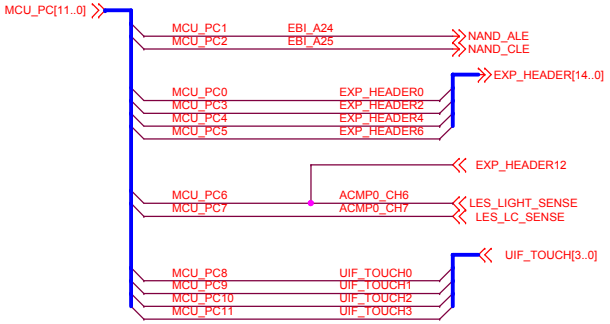


OPAMP Connection Footprint

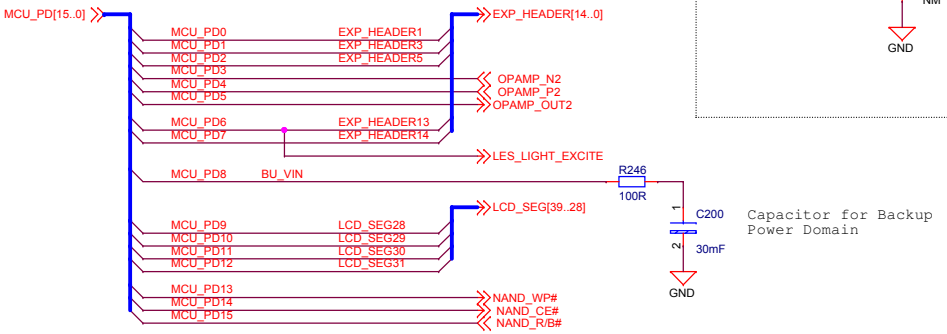


Layout Note:
All these components except R241 and R242 must be placed on the secondary side, and are not to be mounted in production.

PC Connections

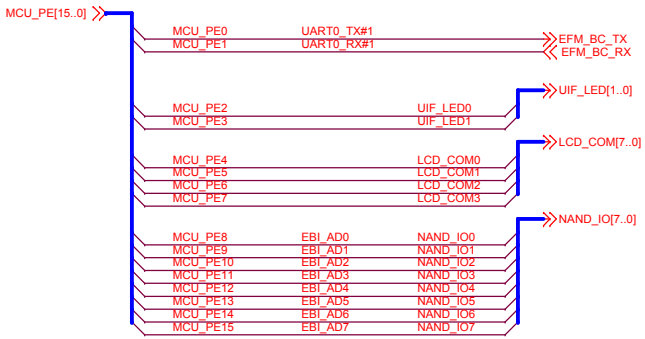


PD Connections

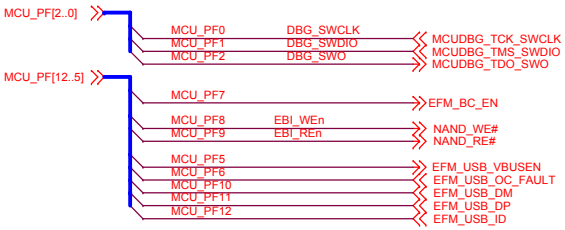


Capacitor for Backup Power Domain

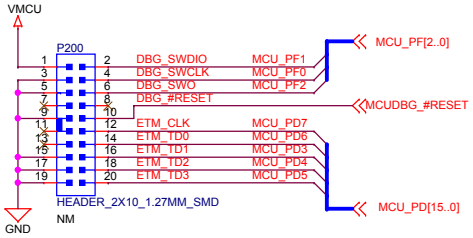
PE Connections



PF Connections



19-pin JTAG/SWD and Trace connector footprint (reverse side)



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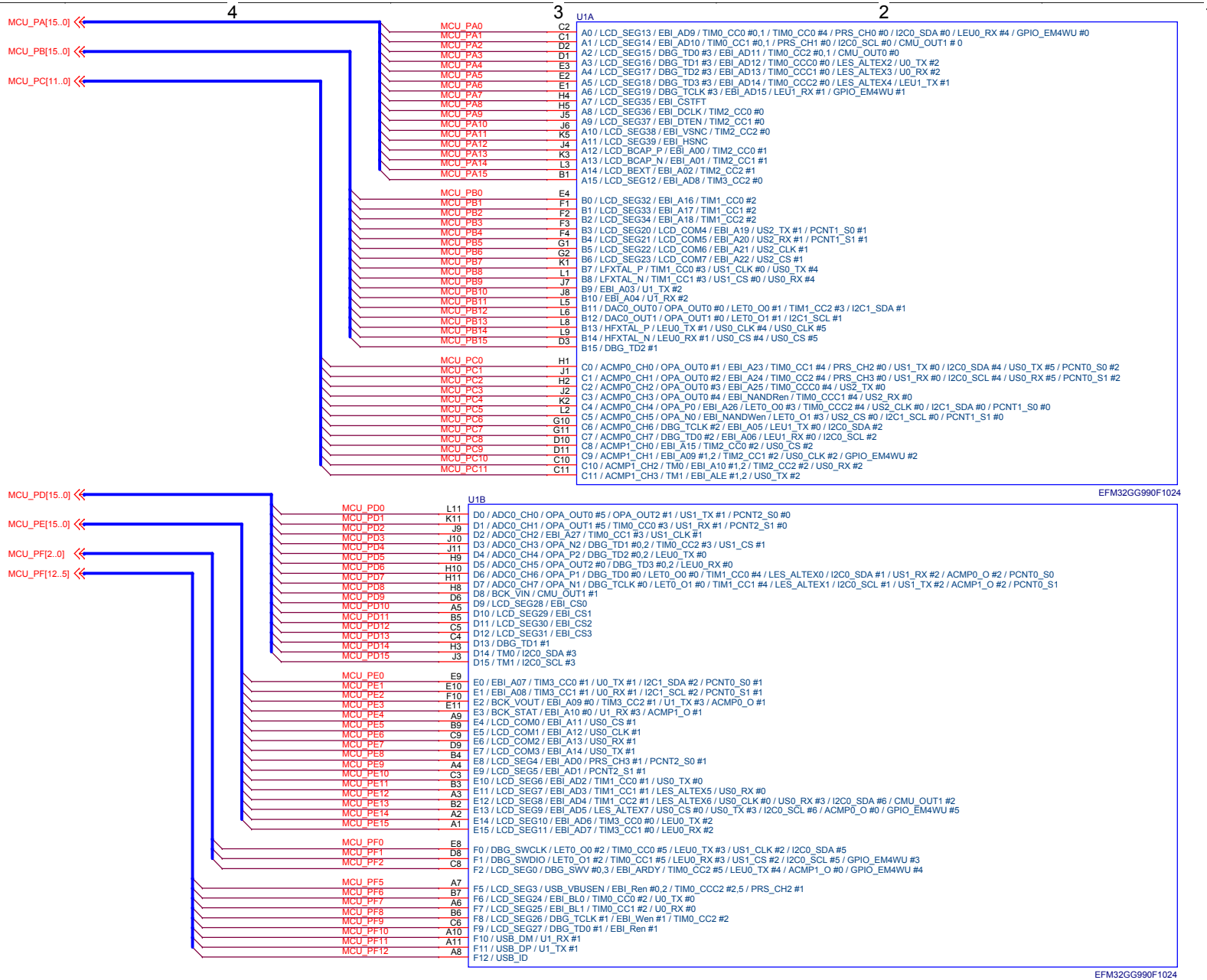
Designed: DDB	Approved: JNO
Size: A3	BOM Doc No: <Cage Code>
Design Created Date: Wednesday, December 03, 2008	

Schematic Title: **EFM32 Giant Gecko Starter Kit**

Page Title: **Signal Assignments**

Document number: **BRD2200A**		Revision: A03
Sheet Created Date: Friday, January 15, 2010	Sheet Modified Date: Tuesday, April 18, 2017	Sheet 3 of 10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MCU_PB[15..0]
MCU_PC[11..0]
U1A
MCU_PA0 C2 A0 / LCD_SEG13 / EBI_AD9 / TIM0_CC0 #0,1 / TIM0_CC0 #4 / PRS_CH0 #0 / I2C0_SDA #0 / LEU0_RX #4 / GPIO_EM4WU #0
MCU_PA1 C1 A1 / LCD_SEG14 / EBI_AD10 / TIM0_CC1 #0,1 / PRS_CH1 #0 / I2C0_SCL #0 / CMU_OUT1 # 0
MCU_PA2 D2 A2 / LCD_SEG15 / DBG_TDO #3 / EBI_AD11 / TIM0_CC2 #0,1 / CMU_OUT0 #0
MCU_PA3 D1 A3 / LCD_SEG16 / DBG_TDI #3 / EBI_AD12 / TIM0_CCC0 #0 / LES_ALTEX2 / U0_TX #2
MCU_PA4 E3 A4 / LCD_SEG17 / DBG_TD2 #3 / EBI_AD13 / TIM0_CCC1 #0 / LES_ALTEX3 / U0_RX #2
MCU_PA5 E2 A5 / LCD_SEG18 / DBG_TD3 #3 / EBI_AD14 / TIM0_CCC2 #0 / LES_ALTEX4 / LEU1_TX #1
MCU_PA6 E1 A6 / LCD_SEG19 / DBG_TCLK #3 / EBI_AD15 / LEU1_RX #1 / GPIO_EM4WU #1
MCU_PA7 H4 A7 / LCD_SEG35 / EBI_CSTFT
MCU_PA8 H5 A8 / LCD_SEG36 / EBI_DCLK / TIM2_CC0 #0
MCU_PA9 J5 A9 / LCD_SEG37 / EBI_DTEN / TIM2_CC1 #0
MCU_PA10 J6 A10 / LCD_SEG38 / EBI_VSNC / TIM2_CC2 #0
MCU_PA11 K5 A11 / LCD_SEG39 / EBI_HSNC
MCU_PA12 J4 A12 / LCD_BCAP_P / EBI_A00 / TIM2_CC0 #1
MCU_PA13 K3 A13 / LCD_BCAP_N / EBI_A01 / TIM2_CC1 #1
MCU_PA14 L3 A14 / LCD_BEXT / EBI_A02 / TIM2_CC2 #1
MCU_PA15 B1 A15 / LCD_SEG12 / EBI_AD8 / TIM3_CC2 #0
MCU_PB0 E4 B0 / LCD_SEG32 / EBI_A16 / TIM1_CC0 #2
MCU_PB1 F1 B1 / LCD_SEG33 / EBI_A17 / TIM1_CC1 #2
MCU_PB2 F2 B2 / LCD_SEG34 / EBI_A18 / TIM1_CC2 #2
MCU_PB3 F3 B3 / LCD_SEG20 / LCD_COM4 / EBI_A19 / US2_TX #1 / PCNT1_S0 #1
MCU_PB4 F4 B4 / LCD_SEG21 / LCD_COM5 / EBI_A20 / US2_RX #1 / PCNT1_S1 #1
MCU_PB5 G1 B5 / LCD_SEG22 / LCD_COM6 / EBI_A21 / US2_CLK #1
MCU_PB6 G2 B6 / LCD_SEG23 / LCD_COM7 / EBI_A22 / US2_CS #1
MCU_PB7 K1 B7 / LFXTAL_P / TIM1_CC0 #3 / US1_CLK #0 / US0_TX #4
MCU_PB8 L1 B8 / LFXTAL_N / TIM1_CC1 #3 / US1_CS #0 / US0_RX #4
MCU_PB9 J7 B9 / EBI_A03 / U1_TX #2
MCU_PB10 J8 B10 / EBI_A04 / U1_RX #2
MCU_PB11 L5 B11 / DAC0_OUT0 / OPA_OUT0 #0 / LET0_O0 #1 / TIM1_CC2 #3 / I2C1_SDA #1
MCU_PB12 L6 B12 / DAC0_OUT1 / OPA_OUT1 #0 / LET0_O1 #1 / I2C1_SCL #1
MCU_PB13 L8 B13 / HFXTAL_P / LEU0_TX #1 / US0_CLK #4 / US0_CLK #5
MCU_PB14 L9 B14 / HFXTAL_N / LEU0_RX #1 / US0_CS #4 / US0_CS #5
MCU_PB15 D3 B15 / DBG_TD2 #1
MCU_PC0 H1 C0 / ACMP0_CH0 / OPA_OUT0 #1 / EBI_A23 / TIM0_CC1 #4 / PRS_CH2 #0 / US1_TX #0 / I2C0_SDA #4 / US0_TX #5 / PCNT0_S0 #2
MCU_PC1 J1 C1 / ACMP0_CH1 / OPA_OUT0 #2 / EBI_A24 / TIM0_CC2 #4 / PRS_CH3 #0 / US1_RX #0 / I2C0_SCL #4 / US0_RX #5 / PCNT0_S1 #2
MCU_PC2 H2 C2 / ACMP0_CH2 / OPA_OUT0 #3 / EBI_A25 / TIM0_CCC0 #4 / US2_TX #0
MCU_PC3 J2 C3 / ACMP0_CH3 / OPA_OUT0 #4 / EBI_NANDRen / TIM0_CCC1 #4 / US2_RX #0
MCU_PC4 K2 C4 / ACMP0_CH4 / OPA_P0 / EBI_A26 / LET0_O0 #3 / TIM0_CCC2 #4 / US2_CLK #0 / I2C1_SDA #0 / PCNT1_S0 #0
MCU_PC5 L2 C5 / ACMP0_CH5 / OPA_N0 / EBI_NANDWen / LET0_O1 #3 / US2_CS #0 / I2C1_SCL #0 / PCNT1_S1 #0
MCU_PC6 G10 C6 / ACMP0_CH6 / DBG_TCLK #2 / EBI_A05 / LEU1_TX #0 / I2C0_SDA #2
MCU_PC7 G11 C7 / ACMP0_CH7 / DBG_TDO #2 / EBI_A06 / LEU1_RX #0 / I2C0_SCL #2
MCU_PC8 D10 C8 / ACMP1_CH0 / EBI_A15 / TIM2_CC0 #2 / US0_CS #2
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MCU_PE[15..0]
MCU_PF[2..0]
MCU_PF[12..5]
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MCU_PD0 L11 D0 / ADC0_CH0 / OPA_OUT0 #5 / OPA_OUT2 #1 / US1_TX #1 / PCNT2_S0 #0
MCU_PD1 K11 D1 / ADC0_CH1 / OPA_OUT1 #5 / TIM0_CC0 #3 / US1_RX #1 / PCNT2_S1 #0
MCU_PD2 J9 D2 / ADC0_CH2 / EBI_A27 / TIM0_CC1 #3 / US1_CLK #1
MCU_PD3 J10 D3 / ADC0_CH3 / OPA_N2 / DBG_TDI #0,2 / TIM0_CC2 #3 / US1_CS #1
MCU_PD4 J11 D4 / ADC0_CH4 / OPA_P2 / DBG_TD2 #0,2 / LEU0_TX #0
MCU_PD5 H9 D5 / ADC0_CH5 / OPA_OUT2 #0 / DBG_TD3 #0,2 / LEU0_RX #0
MCU_PD6 H10 D6 / ADC0_CH6 / OPA_P1 / DBG_TDO #0 / LET0_O0 #0 / TIM1_CC0 #4 / LES_ALTEX0 / I2C0_SDA #1 / US1_RX #2 / ACMP0_O #2 / PCNT0_S0
MCU_PD7 H11 D7 / ADC0_CH7 / OPA_N1 / DBG_TCLK #0 / LET0_O1 #0 / TIM1_CC1 #4 / LES_ALTEX1 / I2C0_SCL #1 / US1_TX #2 / ACMP1_O #2 / PCNT0_S1
MCU_PD8 H8 D8 / BCK_VIN / CMU_OUT1 #1
MCU_PD9 D6 D9 / LCD_SEG28 / EBI_CS0
MCU_PD10 A5 D10 / LCD_SEG29 / EBI_CS1
MCU_PD11 B5 D11 / LCD_SEG30 / EBI_CS2
MCU_PD12 C5 D12 / LCD_SEG31 / EBI_CS3
MCU_PD13 C4 D13 / DBG_TD1 #1
MCU_PD14 H3 D14 / TM0 / I2C0_SDA #3
MCU_PD15 J3 D15 / TM1 / I2C0_SCL #3
MCU_PE0 E9 E0 / EBI_A07 / TIM3_CC0 #1 / U0_TX #1 / I2C1_SDA #2 / PCNT0_S0 #1
MCU_PE1 E10 E1 / EBI_A08 / TIM3_CC1 #1 / U0_RX #1 / I2C1_SCL #2 / PCNT0_S1 #1
MCU_PE2 F10 E2 / BCK_VOUT / EBI_A09 #0 / TIM3_CC2 #1 / U1_TX #3 / ACMP0_O #1
MCU_PE3 E11 E3 / BCK_STAT / EBI_A10 #0 / U1_RX #3 / ACMP1_O #1
MCU_PE4 A9 E4 / LCD_COM0 / EBI_A11 / US0_CS #1
MCU_PE5 B9 E5 / LCD_COM1 / EBI_A12 / US0_CLK #1
MCU_PE6 C9 E6 / LCD_COM2 / EBI_A13 / US0_RX #1
MCU_PE7 D9 E7 / LCD_COM3 / EBI_A14 / US0_TX #1
MCU_PE8 B4 E8 / LCD_SEG4 / EBI_AD0 / PRS_CH3 #1 / PCNT2_S0 #1
MCU_PE9 A4 E9 / LCD_SEG5 / EBI_AD1 / PCNT2_S1 #1
MCU_PE10 C3 E10 / LCD_SEG6 / EBI_AD2 / TIM1_CC0 #1 / US0_TX #0
MCU_PE11 B3 E11 / LCD_SEG7 / EBI_AD3 / TIM1_CC1 #1 / LES_ALTEX5 / US0_RX #0
MCU_PE12 A3 E12 / LCD_SEG8 / EBI_AD4 / TIM1_CC2 #1 / LES_ALTEX6 / US0_CLK #0 / US0_RX #3 / I2C0_SDA #6 / CMU_OUT1 #2
MCU_PE13 B2 E13 / LCD_SEG9 / EBI_AD5 / LES_ALTEX7 / US0_CS #0 / US0_TX #3 / I2C0_SCL #6 / ACMP0_O #0 / GPIO_EM4WU #5
MCU_PE14 A2 E14 / LCD_SEG10 / EBI_AD6 / TIM3_CC0 #0 / LEU0_TX #2
MCU_PE15 A1 E15 / LCD_SEG11 / EBI_AD7 / TIM3_CC1 #0 / LEU0_RX #2
MCU_PF0 E8 F0 / DBG_SWCLK / LET0_O0 #2 / TIM0_CC0 #5 / LEU0_TX #3 / US1_CLK #2 / I2C0_SDA #5
MCU_PF1 D8 F1 / DBG_SWDIO / LET0_O1 #2 / TIM0_CC1 #5 / LEU0_RX #3 / US1_CS #2 / I2C0_SCL #5 / GPIO_EM4WU #3
MCU_PF2 C8 F2 / LCD_SEG0 / DBG_SWV #0,3 / EBI_ARDY / TIM0_CC2 #5 / LEU0_TX #4 / ACMP1_O #0 / GPIO_EM4WU #4
MCU_PF5 A7 F5 / LCD_SEG3 / USB_VBUSEN / EBI_Ren #0,2 / TIM0_CCC2 #2,5 / PRS_CH2 #1
MCU_PF6 B7 F6 / LCD_SEG24 / EBI_BL0 / TIM0_CC0 #2 / U0_TX #0
MCU_PF7 A6 F7 / LCD_SEG25 / EBI_BL1 / TIM0_CC1 #2 / U0_RX #0
MCU_PF8 B6 F8 / LCD_SEG26 / DBG_TCLK #1 / EBI_Wen #1 / TIM0_CC2 #2
MCU_PF9 C6 F9 / LCD_SEG27 / DBG_TDO #1 / EBI_Ren #1
MCU_PF10 A10 F10 / USB_DM / U1_RX #1
MCU_PF11 A11 F11 / USB_DP / U1_TX #1
MCU_PF12 A8 F12 / USB_ID
EFM32GG990F1024
SILICON LABS
Designed: DDB
Approved: JNO
Size A3
BOM Doc No: <Cage Code>
Design Created Date: Wednesday, December 03, 2008
Schematic Title
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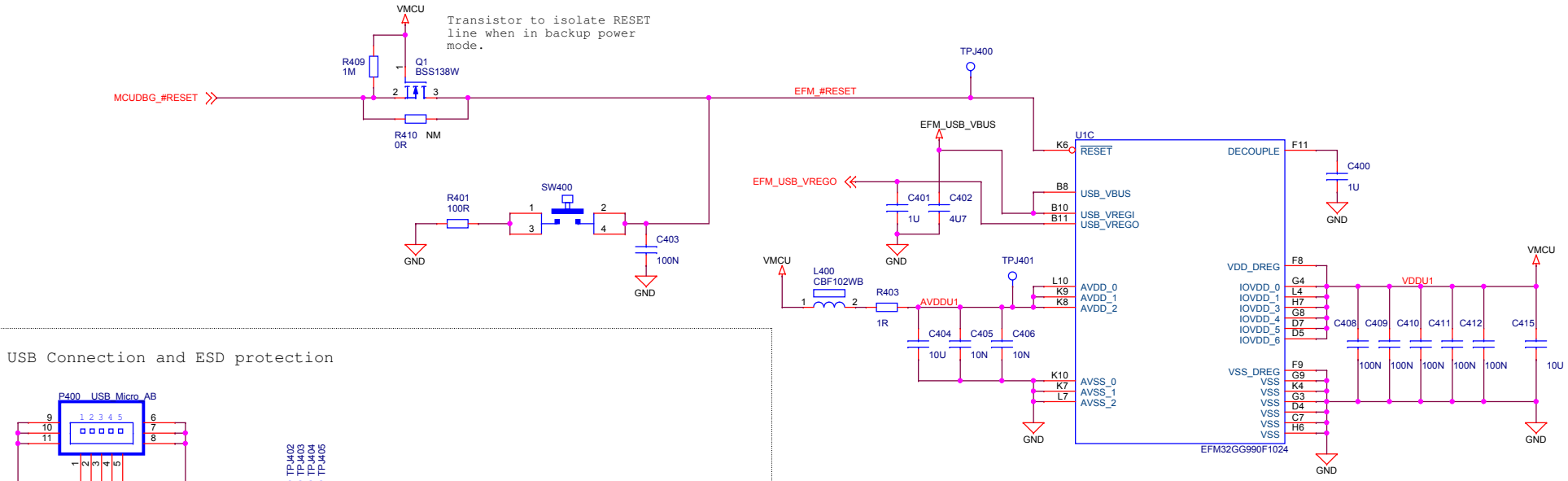
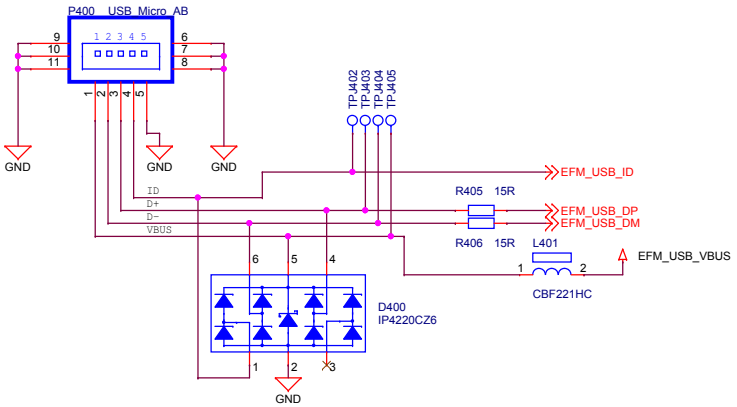
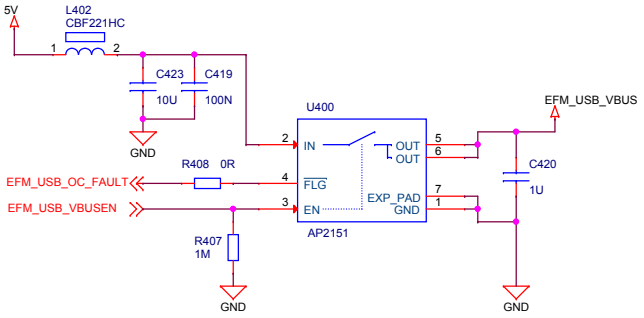
Page Title
EFM32 I/O
Document number
BRD2200A
Revision
A03
Sheet Created Date
Tuesday, January 12, 2010
Sheet Modified Date
Tuesday, April 18, 2017
Sheet 4 of 10



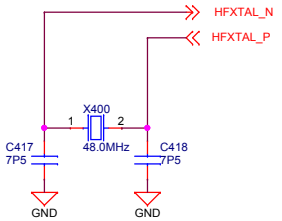
USB Connection and ESD protection



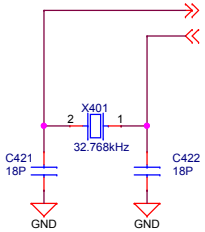
USB Host Power enable



High Frequency Clock



Low Frequency Clock



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SILICON LABS

Designed: DDB	Approved: JNO		
Size A3	BOM Doc No: <Cage Code>		
Design Created Date: Wednesday, December 03, 2008			

Schematic Title

EFM32 Giant Gecko Starter Kit

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EFM32 Power & USB

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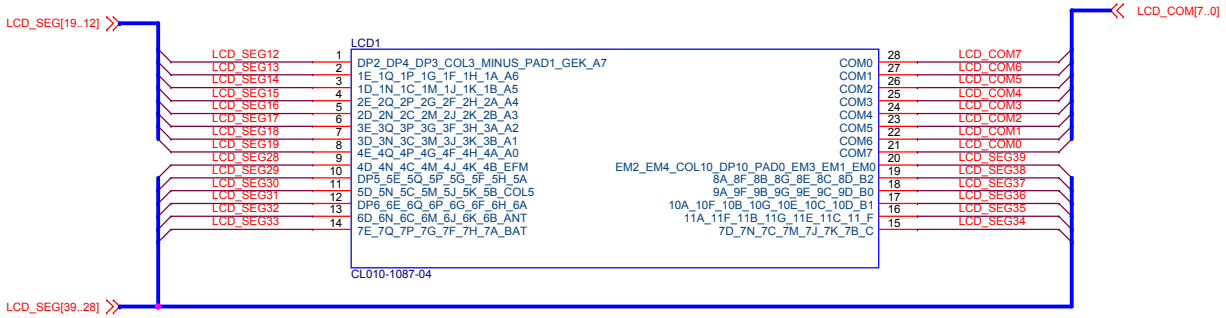
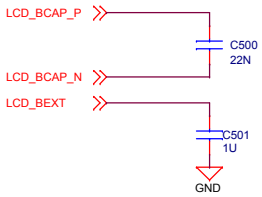
LCD signal connections



LCD Boost

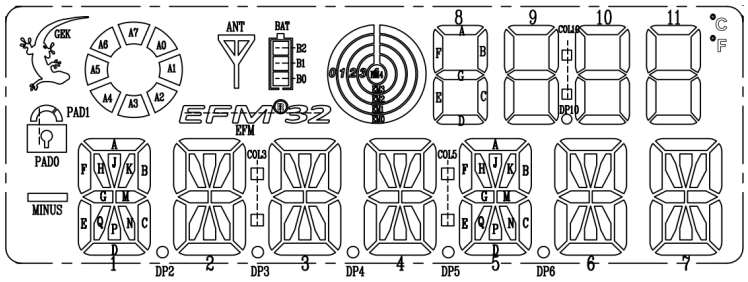


Segment names

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								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							

Segment placement



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Schematic Title: **EFM32 Giant Gecko Starter Kit**

Page Title: **LCD**

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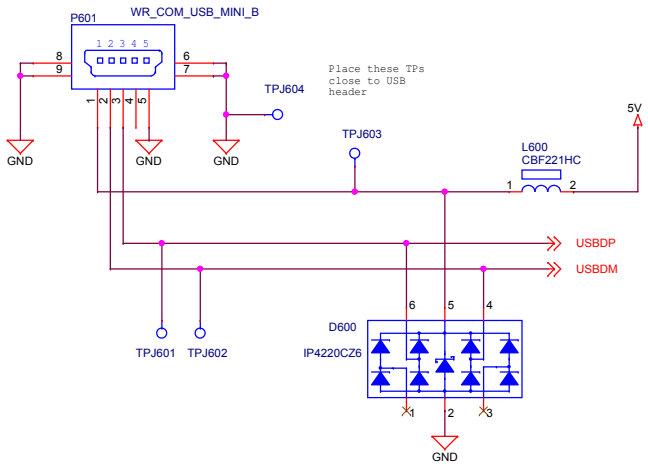
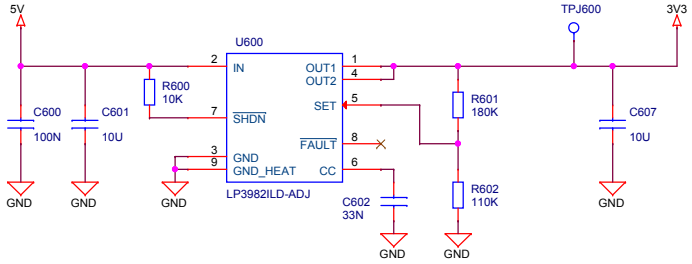
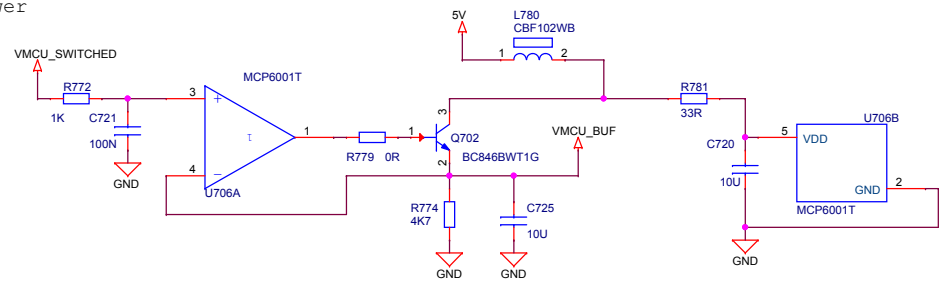
Power input



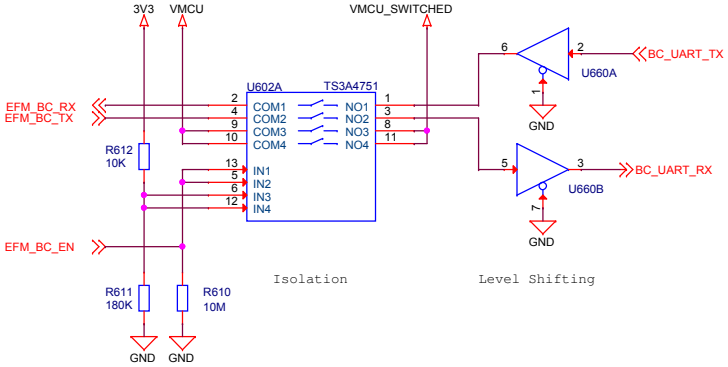
3V3 Regulator

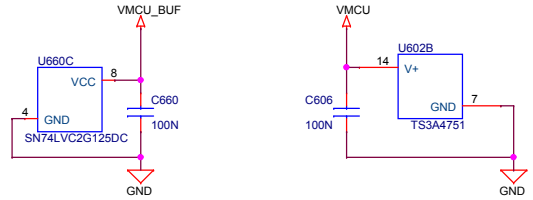


VMCU_DBG power

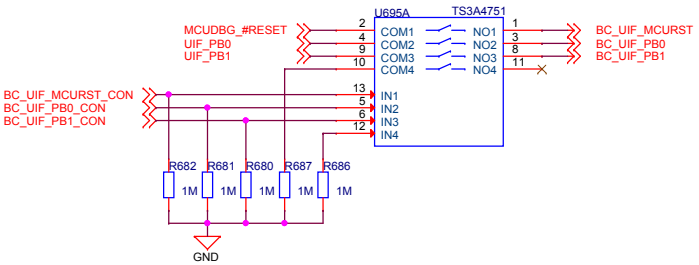


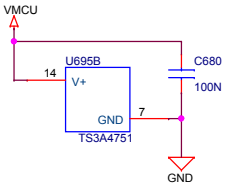
VMCU Switch
Board Controller communication switch

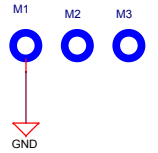




User input to board controller







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Designed: DDB	Approved: JNO
Size: A3	BOM Doc No: <Cage Code>
Design Created Date: Wednesday, December 03, 2008	

Schematic Title: **EFM32 Giant Gecko Starter Kit**

Page Title: **Power & Misc**

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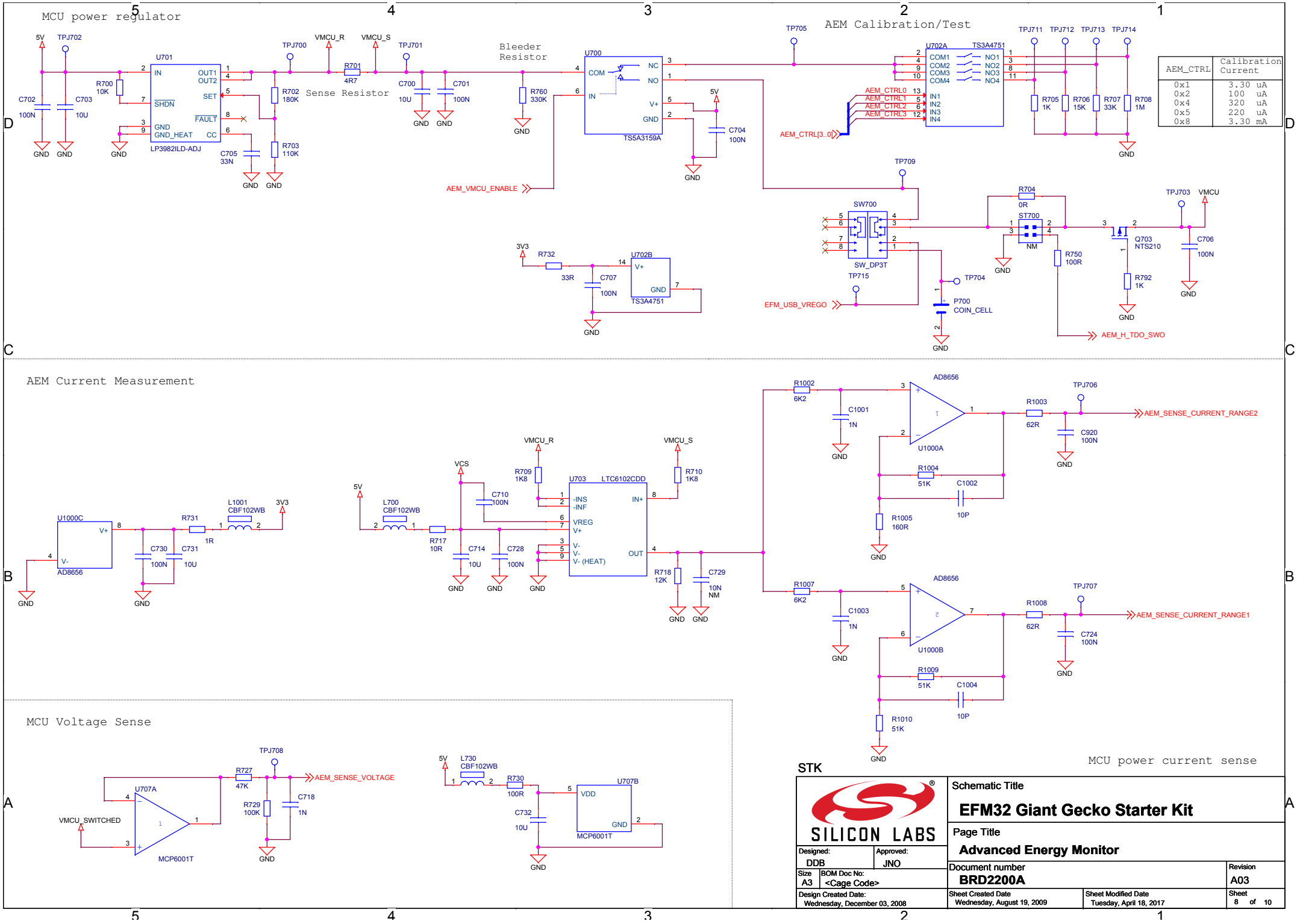
MCU power regulator
AEM Calibration/Test
AEM Current Measurement
MCU Voltage Sense
MCU power current sense
U701
LP3982ILD-ADJ
U700
TS5A3159A
U702A
TS3A4751
U702B
TS3A4751
U703
LTC6102CDD
U1000A
U1000B
U1000C
AD8656
U707A
U707B
MCP6001T
SW700
SW_DP3T
ST700
Q703
NTS210
P700
COIN_CELL
Bleeder Resistor
Sense Resistor
AEM_CTRL[3..0]
AEM_VMCU_ENABLE
EFM_USB_VREGO
AEM_H_TDO_SWO
AEM_SENSE_CURRENT_RANGE2
AEM_SENSE_CURRENT_RANGE1
AEM_SENSE_VOLTAGE
VMCU_SWITCHED
AEM_CTRL | Calibration Current
0x1 | 3.30 uA
0x2 | 100 uA
0x4 | 320 uA
0x5 | 220 uA
0x8 | 3.30 mA
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SILICON LABS
Schematic Title
EFM32 Giant Gecko Starter Kit
Page Title
Advanced Energy Monitor
Designed: DDB
Approved: JNO
Size A3
BOM Doc No: <Cage Code>
Document number BRD2200A
Revision A03
Design Created Date: Wednesday, December 03, 2008
Sheet Created Date Wednesday, August 19, 2009
Sheet Modified Date Tuesday, April 18, 2017
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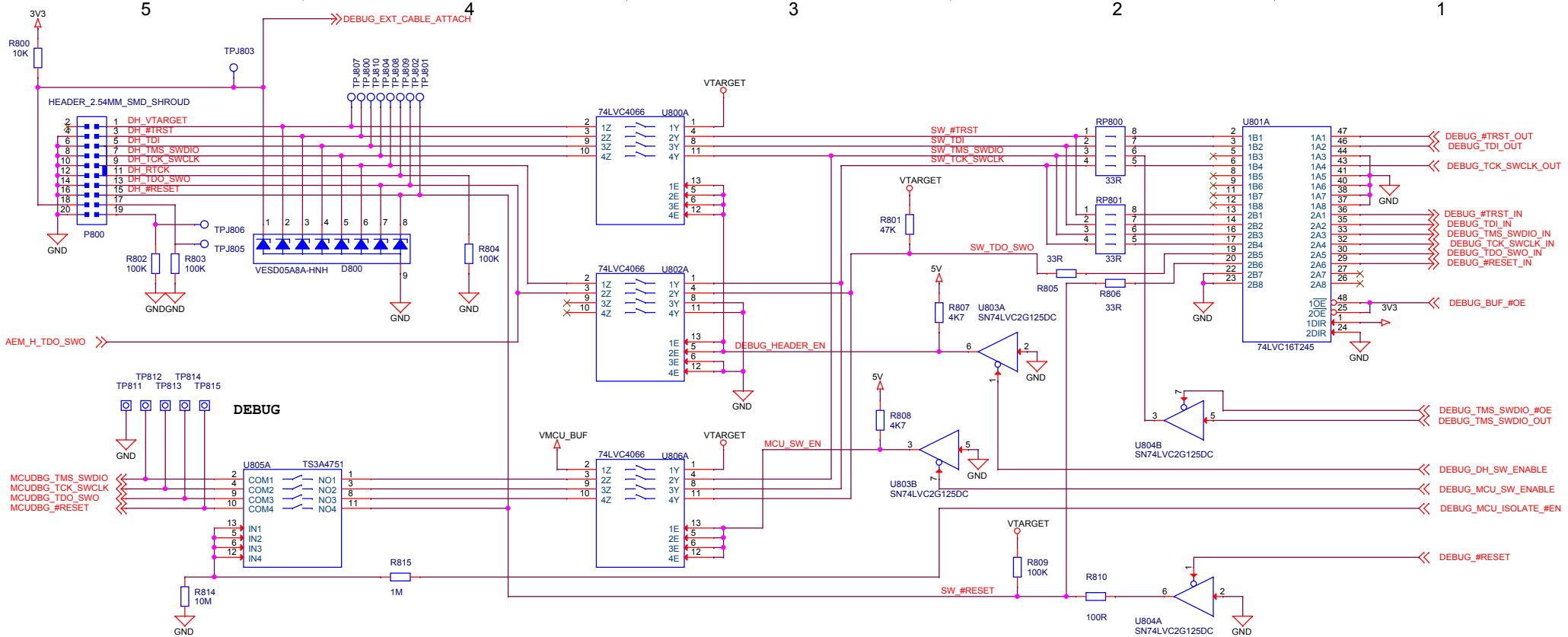

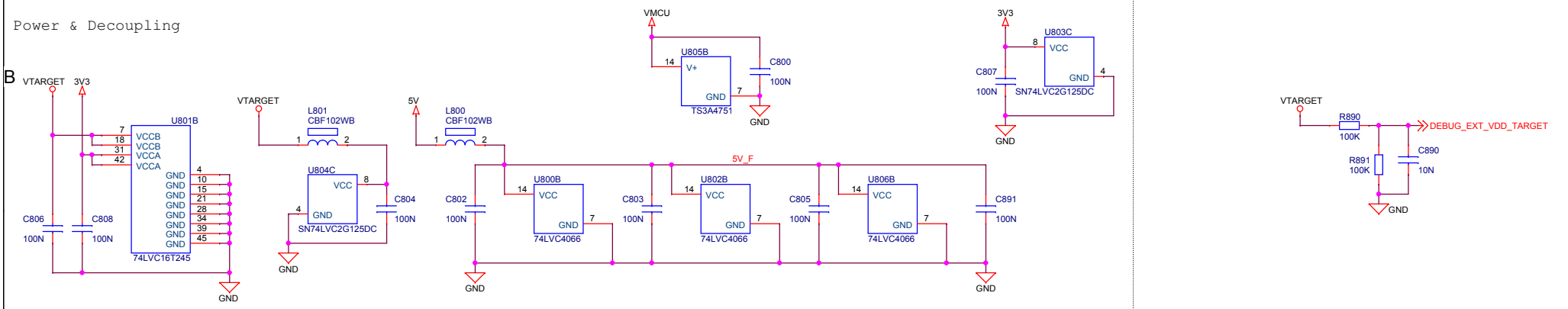

Mode	DEBUG_MCU_SW_ENABLE	DEBUG_DH_SW_ENABLE	DEBUG_BUF_#OE	ISOLATE_#EN	DH_VTARGET	VTARGET
Debug Out	0	1	0	0	External voltage	External voltage
MCU Debug	1	0	0	1	Disconnected	VMCU
Debug In	1	1	1	1	VMCU	VMCU
Debug Off	1	1	1	0	-	-

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SILICON LABS

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Schematic Title: **EFM32 Giant Gecko Starter Kit**

Page Title: **Debug Interface**

Document number: BRD2200A	Revision: A03
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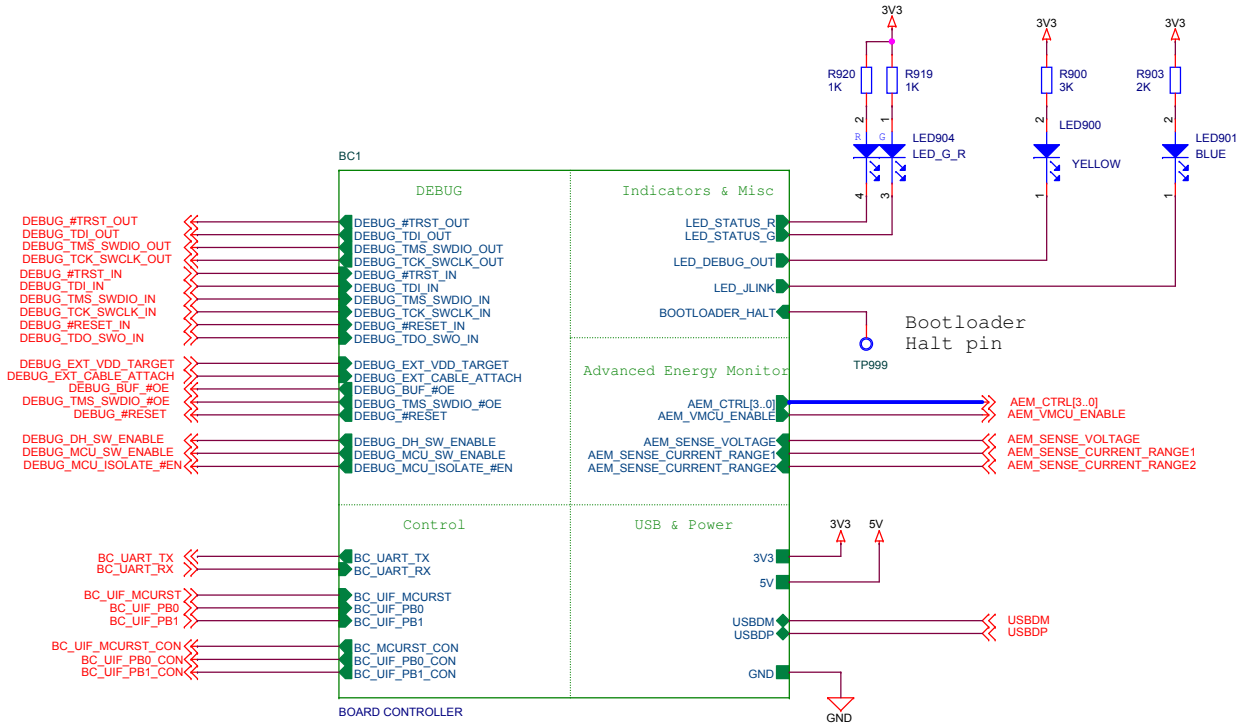

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Design Created Date: Wednesday, December 03, 2008	

Schematic Title: **EFM32 Giant Gecko Starter Kit**

Page Title: **Board Controller**

Document number: **BRD2200A**	Revision: A03
Sheet Created Date: Saturday, March 21, 2009	Sheet Modified Date: Tuesday, April 18, 2017
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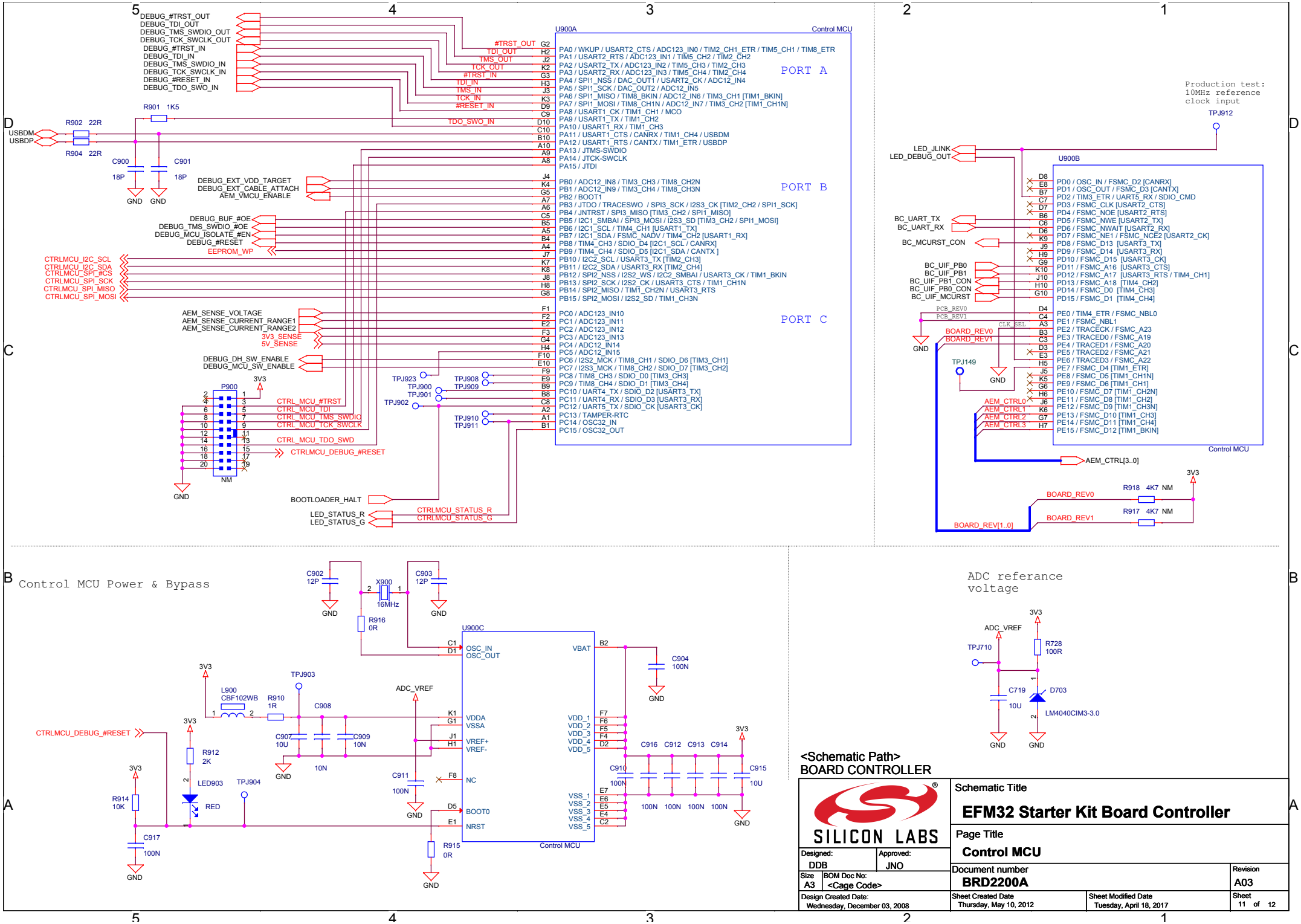
DEBUG_#TRST_OUT
DEBUG_TDI_OUT
DEBUG_TMS_SWDIO_OUT
DEBUG_TCK_SWCLK_OUT
DEBUG_#TRST_IN
DEBUG_TDI_IN
DEBUG_TMS_SWDIO_IN
DEBUG_TCK_SWCLK_IN
DEBUG_#RESET_IN
DEBUG_TDO_SWO_IN
U900A
Control MCU
PORT A
PORT B
PORT C
PA0 / WKUP / USART2_CTS / ADC123_IN0 / TIM2_CH1_ETR / TIM5_CH1 / TIM8_ETR
PA1 / USART2_RTS / ADC123_IN1 / TIM5_CH2 / TIM2_CH2
PA2 / USART2_TX / ADC123_IN2 / TIM5_CH3 / TIM2_CH3
PA3 / USART2_RX / ADC123_IN3 / TIM5_CH4 / TIM2_CH4
PA4 / SPI1_NSS / DAC_OUT1 / USART2_CK / ADC12_IN4
PA5 / SPI1_SCK / DAC_OUT2 / ADC12_IN5
PA6 / SPI1_MISO / TIM8_BKIN / ADC12_IN6 / TIM3_CH1 [TIM1_BKIN]
PA7 / SPI1_MOSI / TIM8_CH1N / ADC12_IN7 / TIM3_CH2 [TIM1_CH1N]
PA8 / USART1_CK / TIM1_CH1 / MCO
PA9 / USART1_TX / TIM1_CH2
PA10 / USART1_RX / TIM1_CH3
PA11 / USART1_CTS / CANRX / TIM1_CH4 / USBDM
PA12 / USART1_RTS / CANTX / TIM1_ETR / USBDP
PA13 / JTMS-SWDIO
PA14 / JTCK-SWCLK
PA15 / JTDI
PB0 / ADC12_IN8 / TIM3_CH3 / TIM8_CH2N
PB1 / ADC12_IN9 / TIM3_CH4 / TIM8_CH3N
PB2 / BOOT1
PB3 / JTDO / TRACESWO / SPI3_SCK / I2S3_CK [TIM2_CH2 / SPI1_SCK]
PB4 / JNTRST / SPI3_MISO [TIM3_CH2 / SPI1_MISO]
PB5 / I2C1_SMBAI / SPI3_MOSI / I2S3_SD [TIM3_CH2 / SPI1_MOSI]
PB6 / I2C1_SCL / TIM4_CH1 [USART1_TX]
PB7 / I2C1_SDA / FSMC_NADV / TIM4_CH2 [USART1_RX]
PB8 / TIM4_CH3 / SDIO_D4 [I2C1_SCL / CANRX]
PB9 / TIM4_CH4 / SDIO_D5 [I2C1_SDA / CANTX]
PB10 / I2C2_SCL / USART3_TX [TIM2_CH3]
PB11 / I2C2_SDA / USART3_RX [TIM2_CH4]
PB12 / SPI2_NSS / I2S2_WS / I2C2_SMBAI / USART3_CK / TIM1_BKIN
PB13 / SPI2_SCK / I2S2_CK / USART3_CTS / TIM1_CH1N
PB14 / SPI2_MISO / TIM1_CH2N / USART3_RTS
PB15 / SPI2_MOSI / I2S2_SD / TIM1_CH3N
PC0 / ADC123_IN10
PC1 / ADC123_IN11
PC2 / ADC123_IN12
PC3 / ADC123_IN13
PC4 / ADC12_IN14
PC5 / ADC12_IN15
PC6 / I2S2_MCK / TIM8_CH1 / SDIO_D6 [TIM3_CH1]
PC7 / I2S3_MCK / TIM8_CH2 / SDIO_D7 [TIM3_CH2]
PC8 / TIM8_CH3 / SDIO_D0 [TIM3_CH3]
PC9 / TIM8_CH4 / SDIO_D1 [TIM3_CH4]
PC10 / UART4_TX / SDIO_D2 [USART3_TX]
PC11 / UART4_RX / SDIO_D3 [USART3_RX]
PC12 / UART5_TX / SDIO_CK [USART3_CK]
PC13 / TAMPER-RTC
PC14 / OSC32_IN
PC15 / OSC32_OUT
R901 1K5
R902 22R
R904 22R
USBDM
USBDP
C900 18P
C901 18P
GND
DEBUG_EXT_VDD_TARGET
DEBUG_EXT_CABLE_ATTACH
AEM_VMCU_ENABLE
DEBUG_BUF_#OE
DEBUG_TMS_SWDIO_#OE
DEBUG_MCU_ISOLATE_#EN
DEBUG_#RESET
EEPROM_WP
CTRLMCU_I2C_SCL
CTRLMCU_I2C_SDA
CTRLMCU_SPI_#CS
CTRLMCU_SPI_SCK
CTRLMCU_SPI_MISO
CTRLMCU_SPI_MOSI
AEM_SENSE_VOLTAGE
AEM_SENSE_CURRENT_RANGE1
AEM_SENSE_CURRENT_RANGE2
3V3_SENSE
5V_SENSE
DEBUG_DH_SW_ENABLE
DEBUG_MCU_SW_ENABLE
P900
NM
3V3
CTRL_MCU_#TRST
CTRL_MCU_TDI
CTRL_MCU_TMS_SWDIO
CTRL_MCU_TCK_SWCLK
CTRL_MCU_TDO_SWD
CTRLMCU_DEBUG_#RESET
TPJ923
TPJ900
TPJ901
TPJ902
TPJ908
TPJ909
TPJ910
TPJ911
BOOTLOADER_HALT
LED_STATUS_R
LED_STATUS_G
CTRLMCU_STATUS_R
CTRLMCU_STATUS_G
Production test:
10MHz reference
clock input
TPJ912
U900B
LED_JLINK
LED_DEBUG_OUT
BC_UART_TX
BC_UART_RX
BC_MCURST_CON
BC_UIF_PB0
BC_UIF_PB1
BC_UIF_PB1_CON
BC_UIF_PB0_CON
BC_UIF_MCURST
PCB_REV0
PCB_REV1
CLK_SEL
BOARD_REV0
BOARD_REV1
TPJ149
AEM_CTRL0
AEM_CTRL1
AEM_CTRL2
AEM_CTRL3
AEM_CTRL[3..0]
R918 4K7 NM
R917 4K7 NM
BOARD_REV[1..0]
PD0 / OSC_IN / FSMC_D2 [CANRX]
PD1 / OSC_OUT / FSMC_D3 [CANTX]
PD2 / TIM3_ETR / UART5_RX / SDIO_CMD
PD3 / FSMC_CLK [USART2_CTS]
PD4 / FSMC_NOE [USART2_RTS]
PD5 / FSMC_NWE [USART2_TX]
PD6 / FSMC_NWAIT [USART2_RX]
PD7 / FSMC_NE1 / FSMC_NCE2 [USART2_CK]
PD8 / FSMC_D13 [USART3_TX]
PD9 / FSMC_D14 [USART3_RX]
PD10 / FSMC_D15 [USART3_CK]
PD11 / FSMC_A16 [USART3_CTS]
PD12 / FSMC_A17 [USART3_RTS / TIM4_CH1]
PD13 / FSMC_A18 [TIM4_CH2]
PD14 / FSMC_D0 [TIM4_CH3]
PD15 / FSMC_D1 [TIM4_CH4]
PE0 / TIM4_ETR / FSMC_NBL0
PE1 / FSMC_NBL1
PE2 / TRACECK / FSMC_A23
PE3 / TRACED0 / FSMC_A19
PE4 / TRACED1 / FSMC_A20
PE5 / TRACED2 / FSMC_A21
PE6 / TRACED3 / FSMC_A22
PE7 / FSMC_D4 [TIM1_ETR]
PE8 / FSMC_D5 [TIM1_CH1N]
PE9 / FSMC_D6 [TIM1_CH1]
PE10 / FSMC_D7 [TIM1_CH2N]
PE11 / FSMC_D8 [TIM1_CH2]
PE12 / FSMC_D9 [TIM1_CH3N]
PE13 / FSMC_D10 [TIM1_CH3]
PE14 / FSMC_D11 [TIM1_CH4]
PE15 / FSMC_D12 [TIM1_BKIN]
Control MCU
Control MCU Power & Bypass
C902 12P
C903 12P
X900 16MHz
R916 0R
U900C
OSC_IN
OSC_OUT
VBAT
C904 100N
L900 CBF102WB
R910 1R
C908
C907 10U
C909 10N
ADC_VREF
VDDA
VSSA
VREF+
VREF-
NC
BOOT0
NRST
VDD_1
VDD_2
VDD_3
VDD_4
VDD_5
VSS_1
VSS_2
VSS_3
VSS_4
VSS_5
C916 C912 C913 C914
C910 100N
C915 10U
100N 100N 100N 100N
R912 2K
LED903
RED
TPJ904
R914 10K
C917 100N
C911 100N
R915 0R
ADC reference
voltage
TPJ710
R728 100R
C719 10U
D703
LM4040CIM3-3.0
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BOARD CONTROLLER
SILICON LABS
Designed: DDB
Approved: JNO
Size A3
BOM Doc No: <Cage Code>
Design Created Date: Wednesday, December 03, 2008
Schematic Title
EFM32 Starter Kit Board Controller
Page Title
Control MCU
Document number
BRD2200A
Revision
A03
Sheet Created Date
Thursday, May 10, 2012
Sheet Modified Date
Tuesday, April 18, 2017
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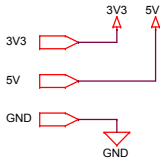
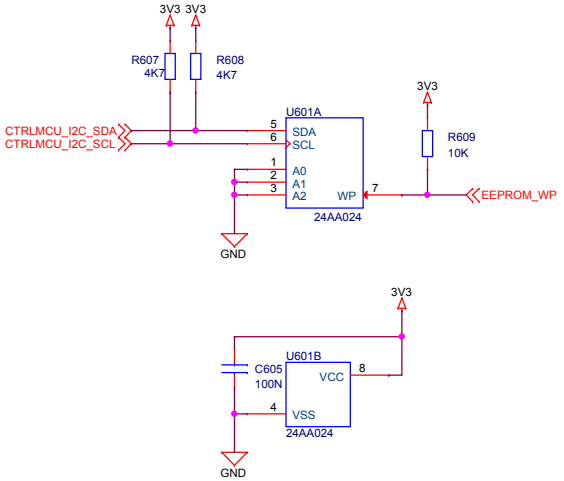
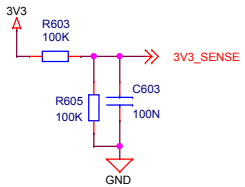
POWER INPUTS

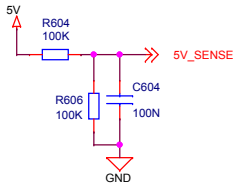


CTRLMCU EEPROM

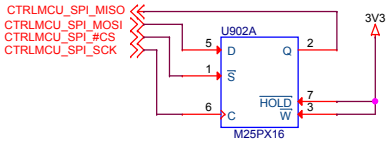


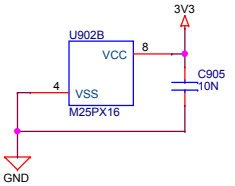
POWER SENSE





CTRLMCU SERIAL FLASH





<Schematic Path>
BOARD CONTROLLER

SILICON LABS

Designed: DDB	Approved: JNO
Size: A3	BOM Doc No: <Cage Code>
Design Created Date: Wednesday, December 03, 2008	

Schematic Title
EFM32 Starter Kit Board Controller

Page Title
Board Controller Misc

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