



EFM32PG12 Pearl Gecko STK	
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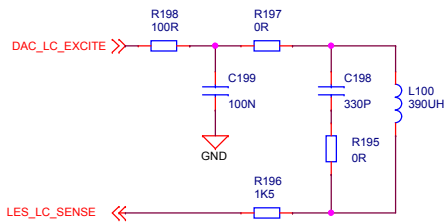
Revision History	
Rev.	Description
A00	Initial release

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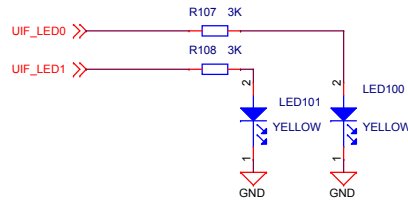


/ EFM32PG STK		Schematic Title	
		<b>EFM32PG12 Pearl Gecko Starter Kit</b>	
Designed: HEL Approved: JNO		Page Title <b>Title Page</b>	
Size: A3 BOM Doc No: <Cage Code>	Document number <b>BRD2501A</b>	Revision <b>A00</b>	
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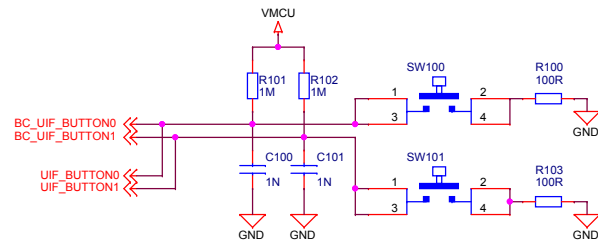
### LESENSE LC-Sensor



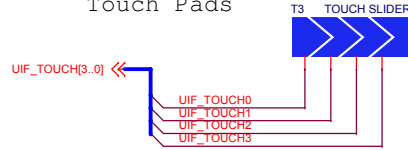
### User LEDs



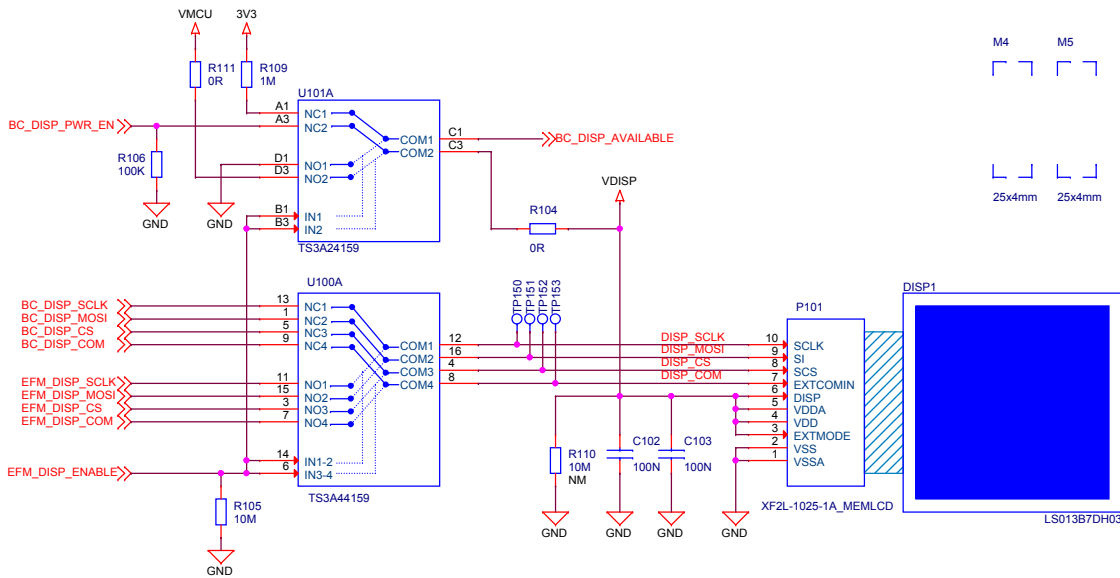
### User Pushbuttons



### Touch Pads

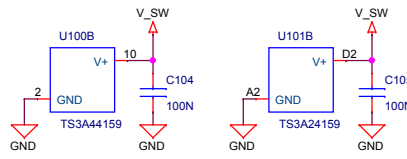


### Memory LCD-TFT Display & Multiplexer

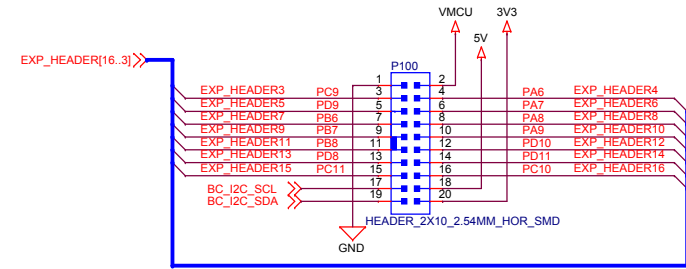


EFM_DISP_ENABLE	DISP_CTRL	VDISP	BC_DISP_AVAILABLE
1	EFM	VMCU	0
0	BC	BC_DISP_PWR_EN	1

The EFM32 always controls ownership of the display using the EFM\_DISP\_ENABLE signal.



### EXP Header

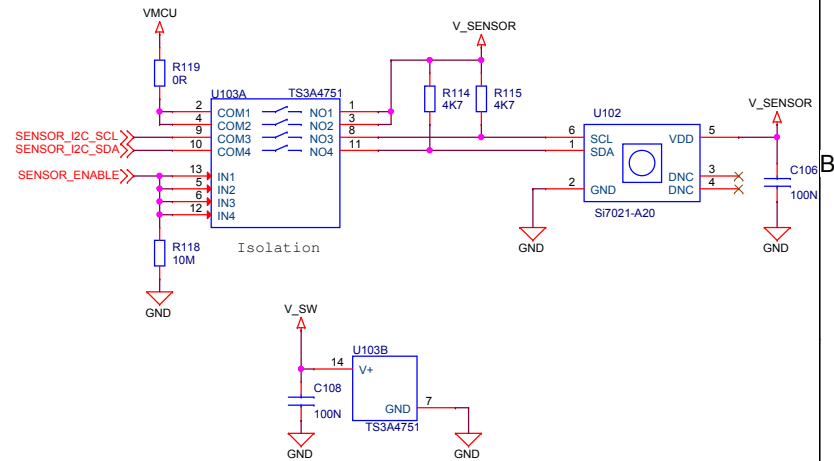


#### EXP-Header Functionality

Pin	Signal	Functionality
1	GND	
3	PC9	
5	PD9	
7	PB6	US3_TX #10 I2C1_SDA#6
9	PB7	US3_RX #10 I2C1_SCL#6
11	PB8	US3_CLK #10
13	PD8	US3_CS #29
15	PC11	I2C0_SCL#15
17		Reserved for EXP Board Identification
19		Reserved for EXP Board Identification

Pin	Signal	Functionality
2	VMCU	
4	PA6	US2_TX #1
6	PA7	US2_RX #1
8	PA8	US2_CLK #1
10	PA9	US2_CS #1
12	PD10	LEU0_TX #18
14	PD11	LEU0_RX #18
16	PC10	I2C0_SDA#15
18	5V	
20	3V3	

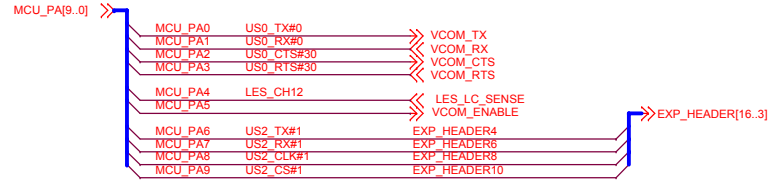
### Relative Humidity & Temperature Sensor



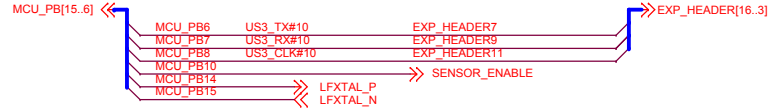
### EFM32PG STK

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		<b>User Interfaces</b>	
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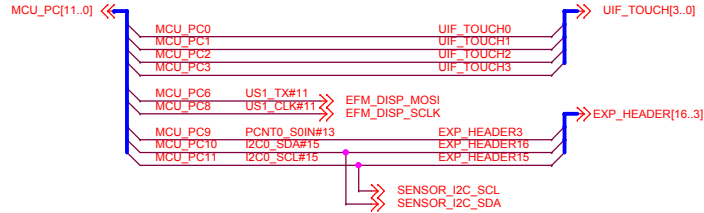
### PA Connections



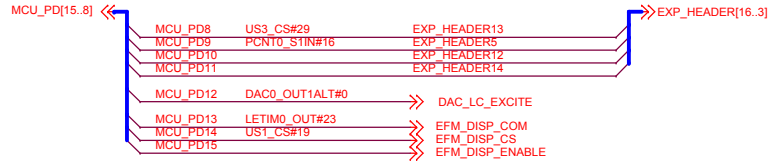
### PB Connections



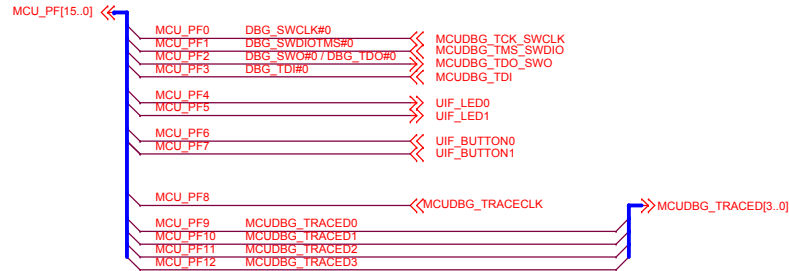
### PC Connections



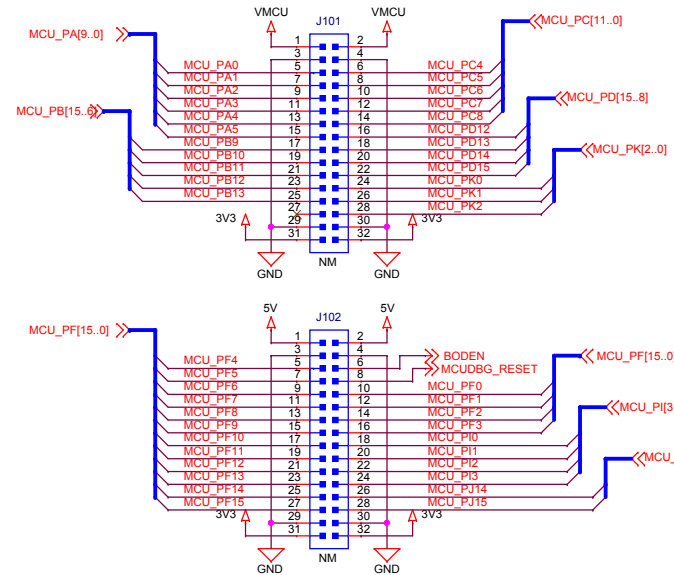
### PD Connections



### PF Connections



### Breakout Connections



#### Breakout header labels:

VMCU	VMCU
GND	GND
PA0	PC4
PA1	PC5
PA2	PC6
PA3	PC7
PA4	PC8
PA5	PD12
PB9	PD13
PB10	PD14
PB11	PD15
PB12	PK0
PB13	PK1
NC	PK2
GND	GND
3V3	3V3

5V	5V
GND	GND
PF4	BODEN
PF5	RST
PF6	PFO
PF7	PF1
PF8	PF2
PF9	PF3
PF10	PI0
PF11	PI1
PF12	PI2
PF13	PI3
PF14	PI4
PF15	PI5
GND	GND
3V3	3V3



Schematic Title

**EFM32PG12 Pearl Gecko Starter Kit**

Page Title

**EFM32 Signal Assignments**

Designed: HEL  
Approved: JNO

Document number

**BRD2501A**

Revision

**A00**

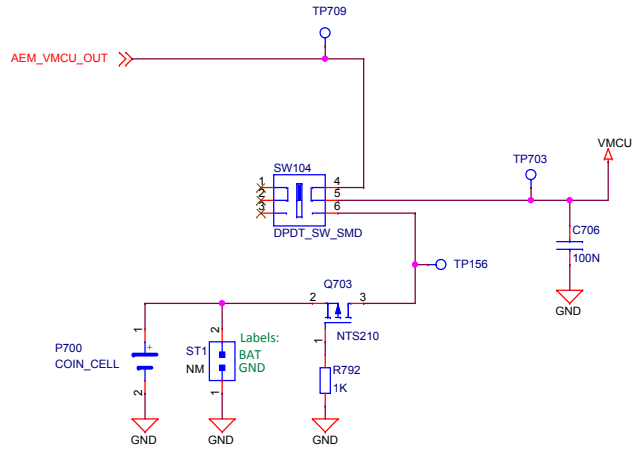
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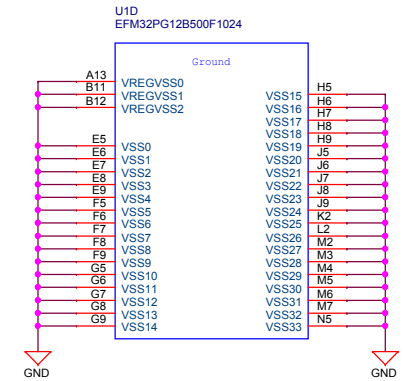
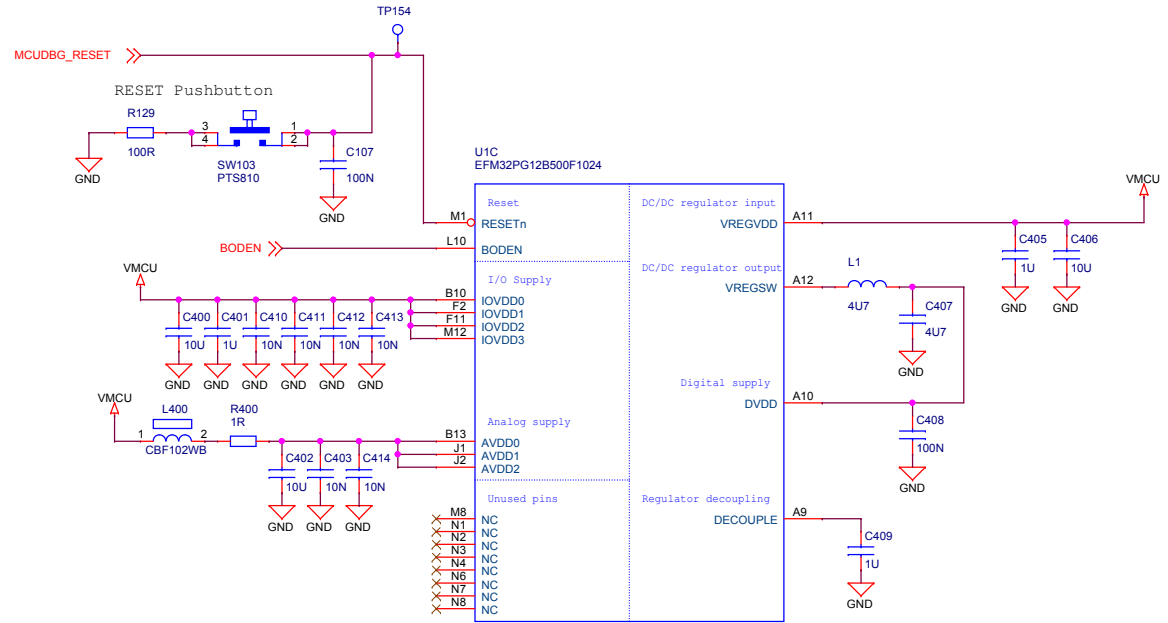
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Power Select Switch: AEM/BAT

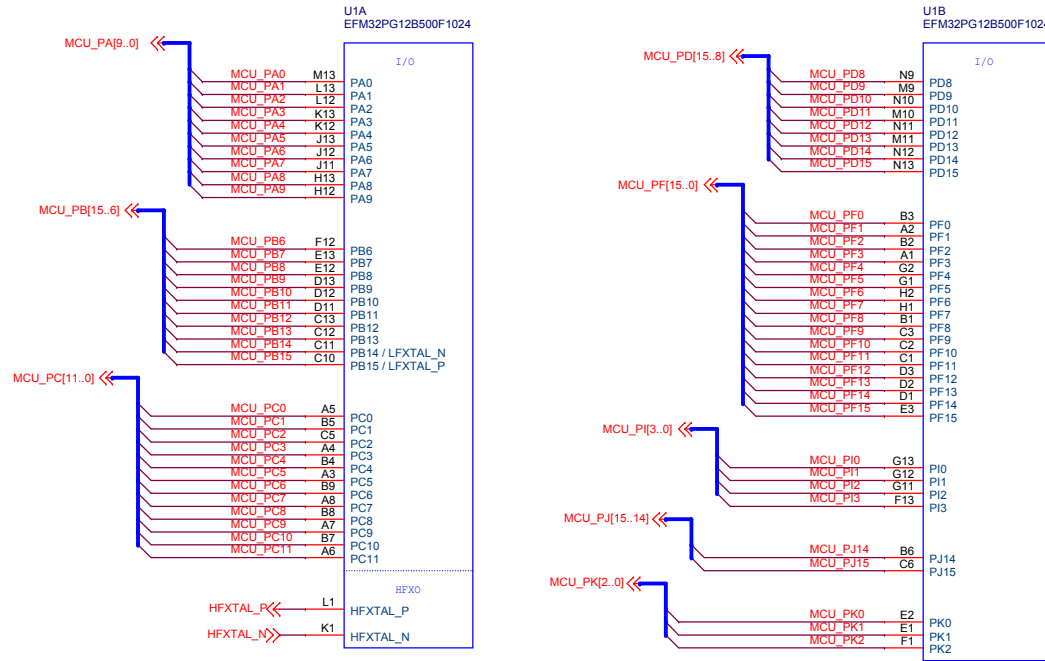


SWITCH POS	MODE DESCRIPTION
AEM	AEM Enabled, VMCU sourced from external 3.3V LDO powered by BC USB 5V supply
BAT	AEM Disabled, VMCU sourced from coin-cell battery or external power supply

EFM32 Power and Decoupling

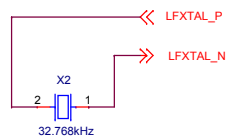
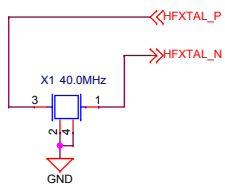



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		<b>EFM32 Power</b>	
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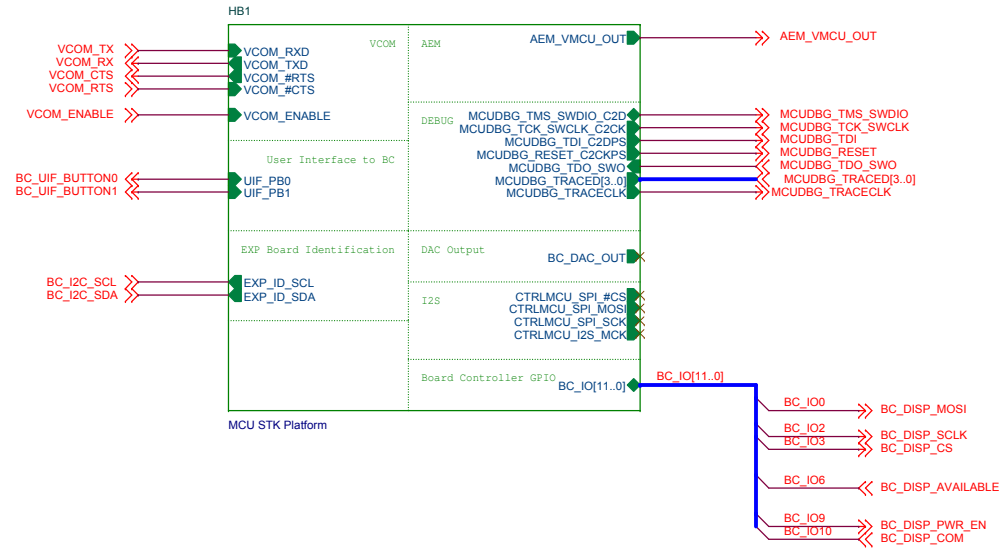
High Frequency Clock


Low Frequency Clock

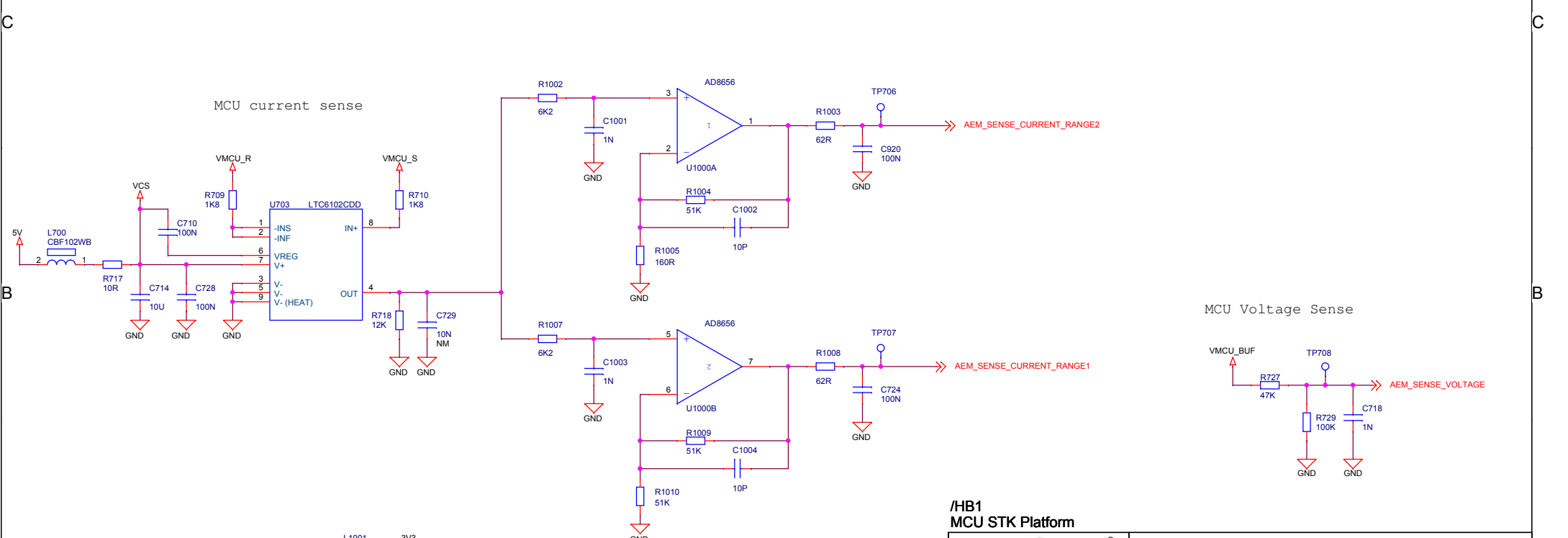
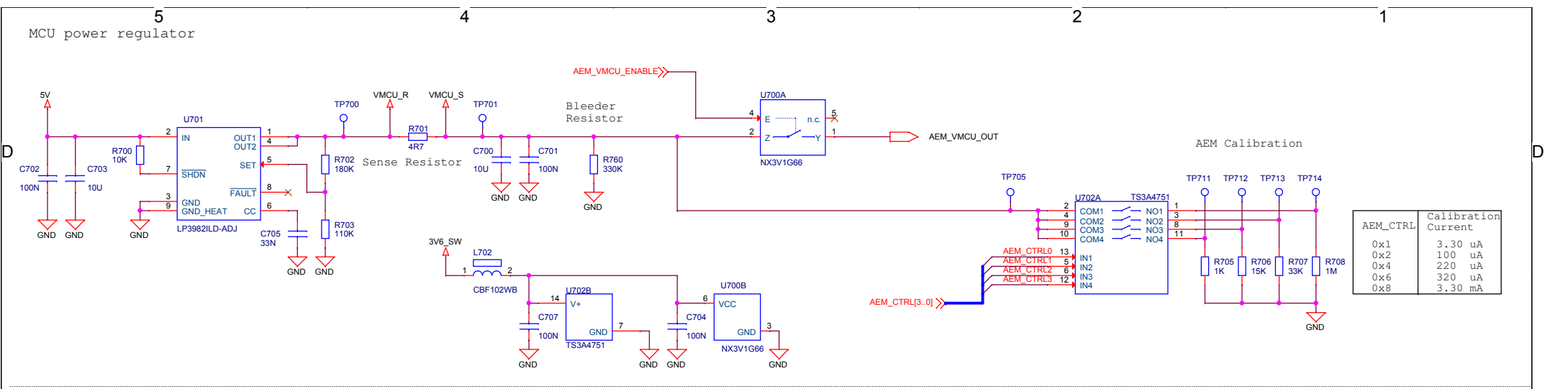


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Board Controller Functional Block



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		<b>STK Board Controller</b>	
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**/HB1**  
MCU STK Platform

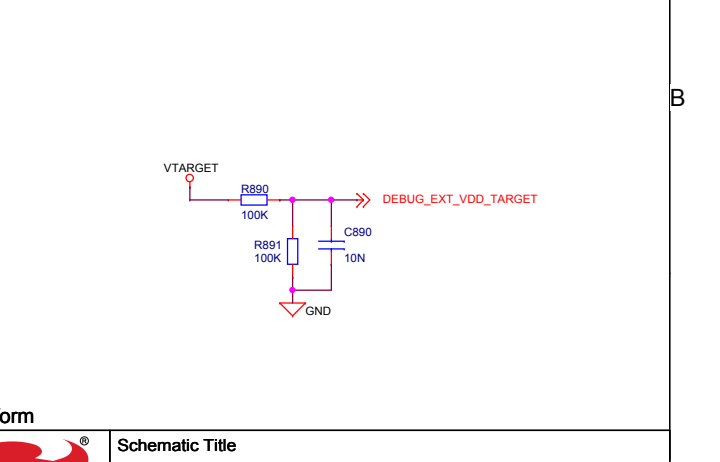
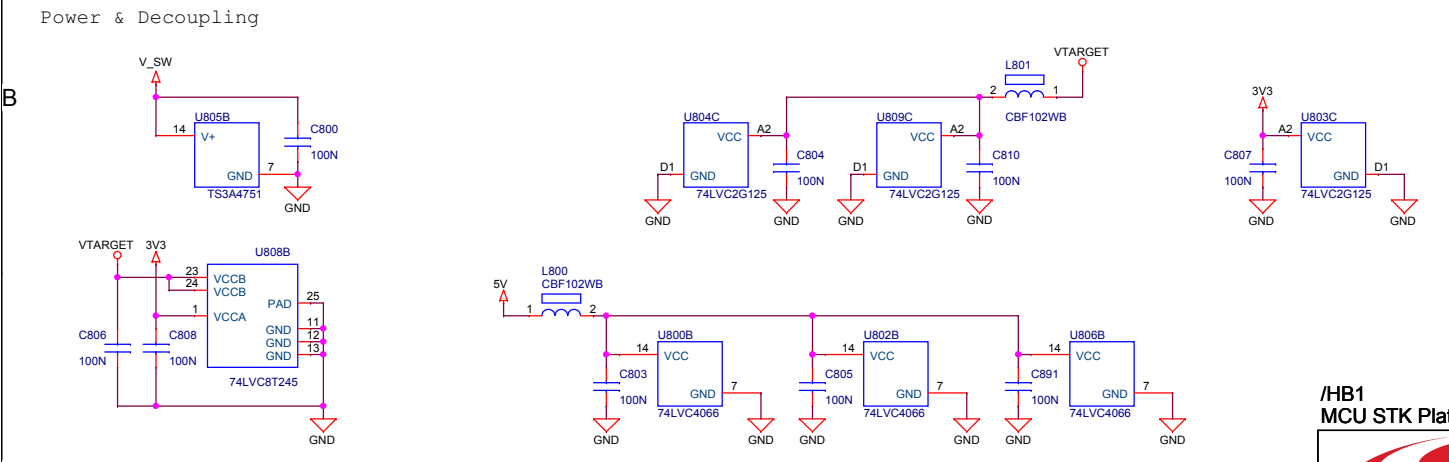
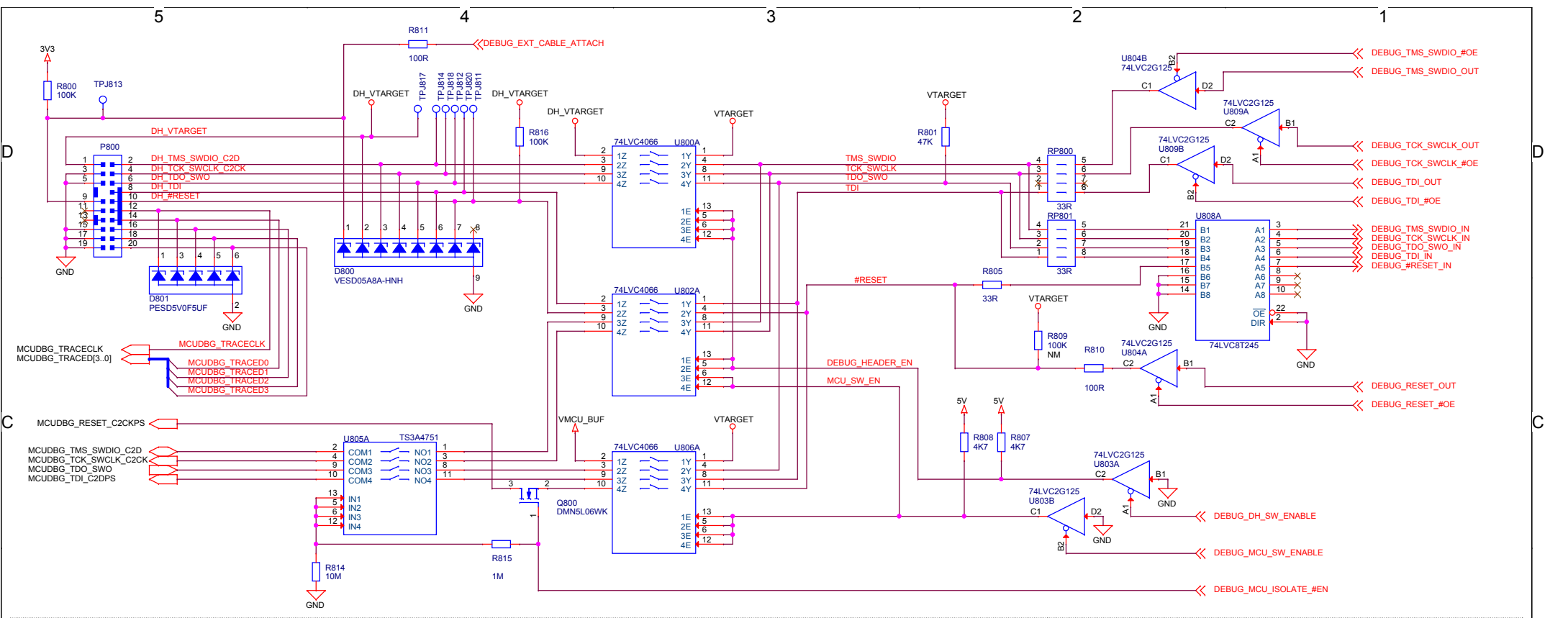
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Designed: DDB      Approved: JNO

Size: A3      BOM Doc No: <Cage Code>

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<b>EFM32PG12 Pearl Gecko Starter Kit</b>		
<b>Page Title</b>		
<b>Advanced Energy Monitor</b>		
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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	-	-

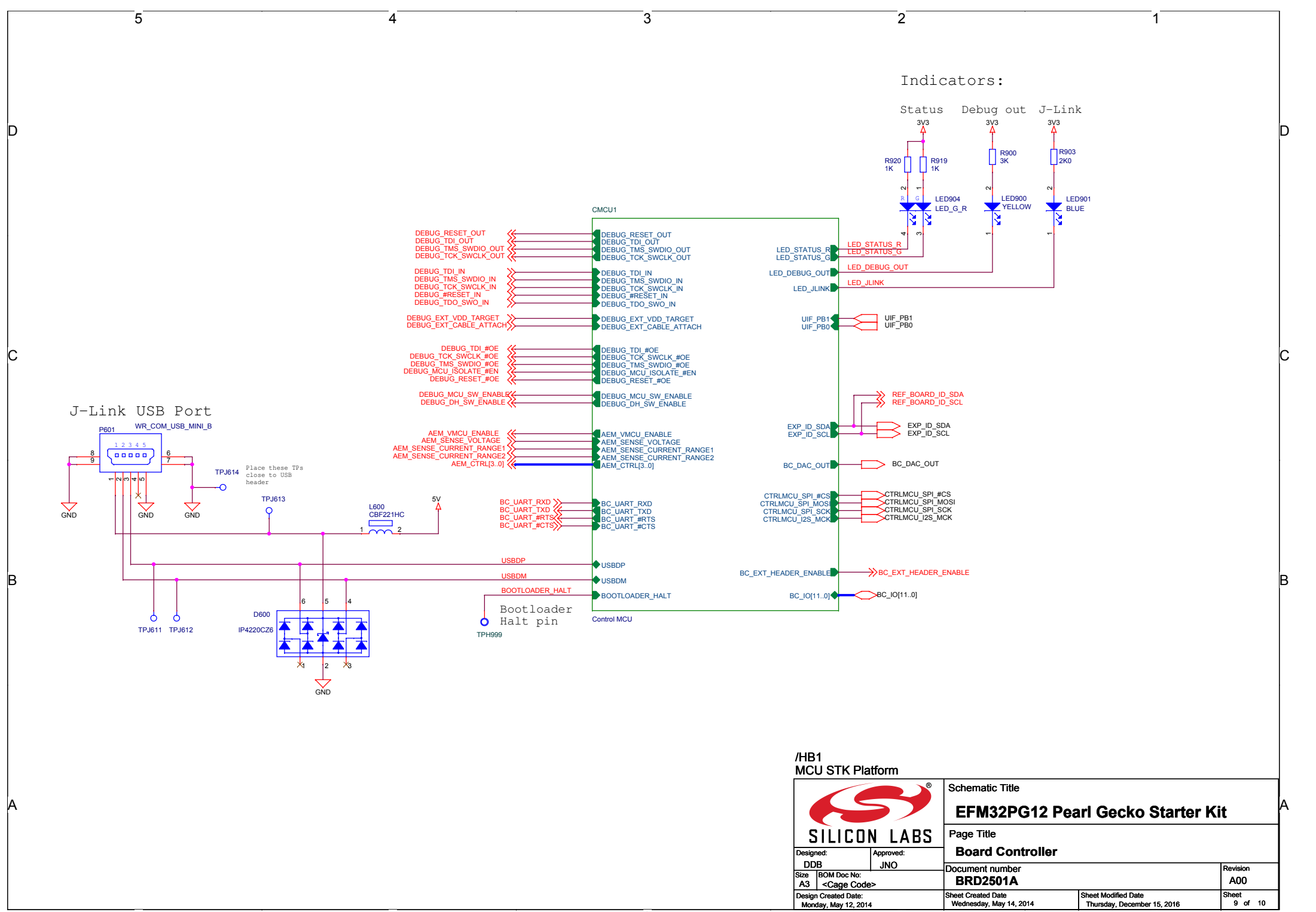
**/HB1  
MCU STK Platform**

**SILICON LABS**

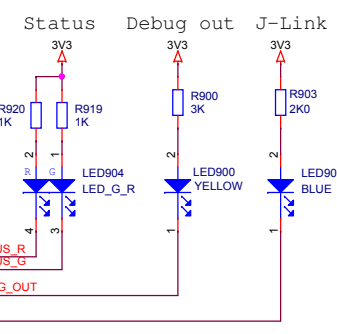
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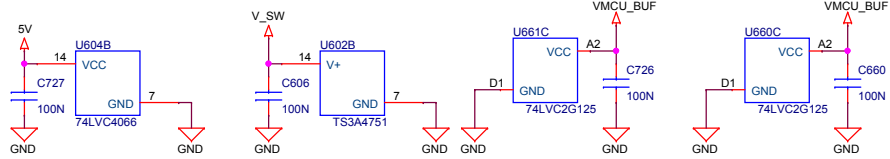
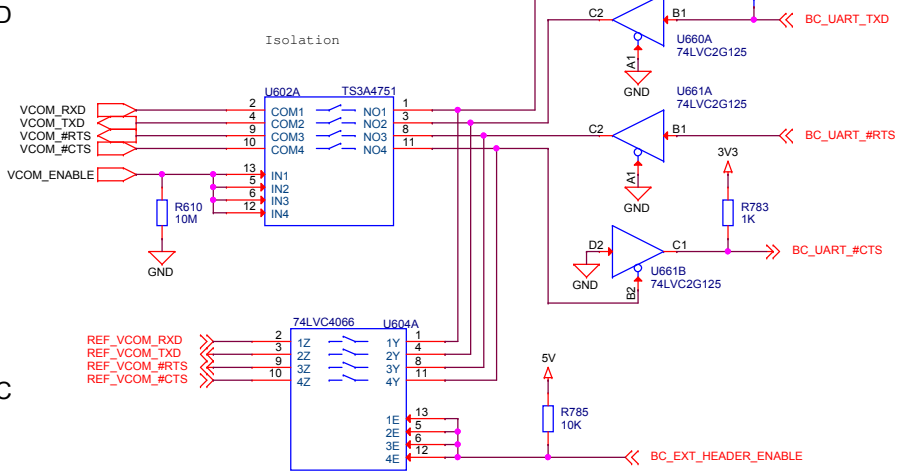
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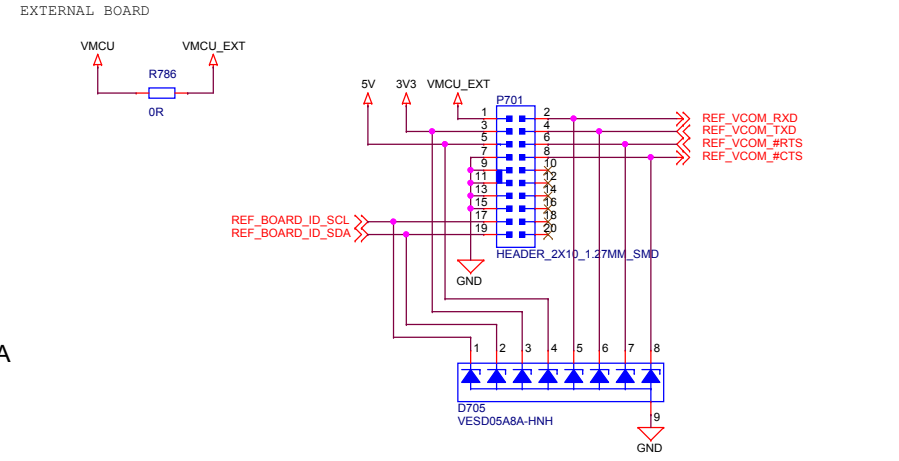
/HB1  
MCU STK Platform

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		<b>Board Controller</b>	
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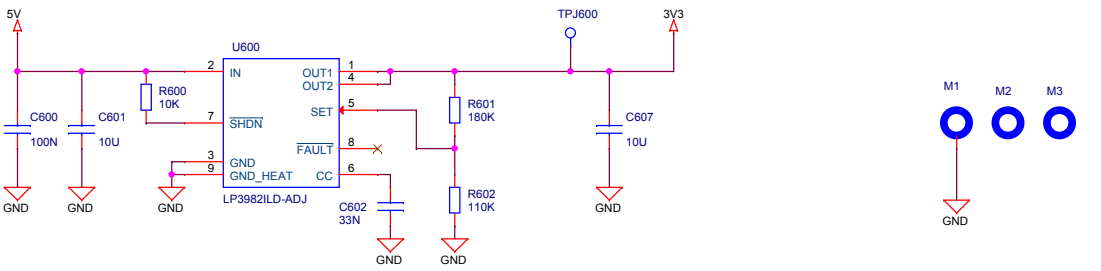
# Virtual COM Port Interface



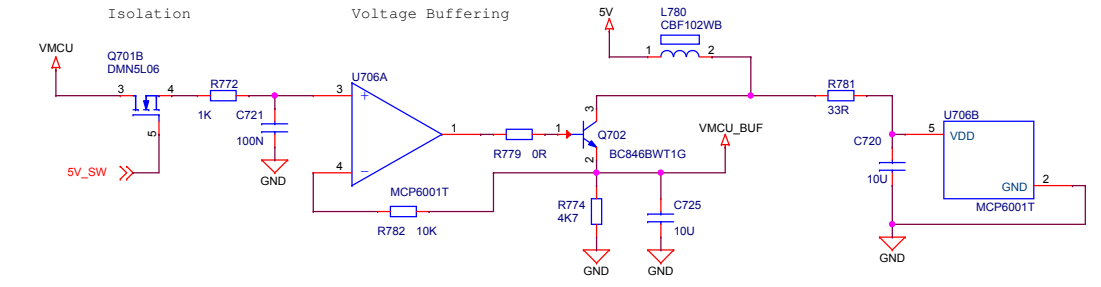
# Connector for external reference designs boards



# 3V3 Regulator



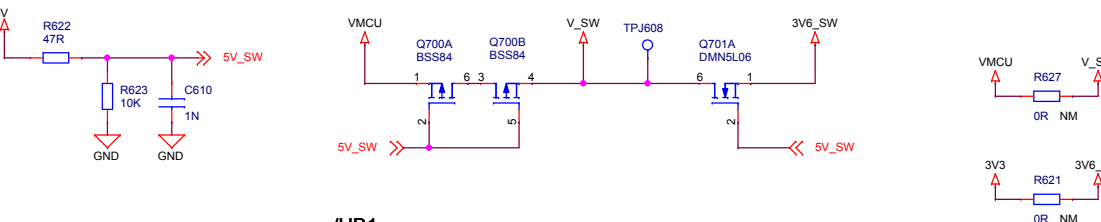
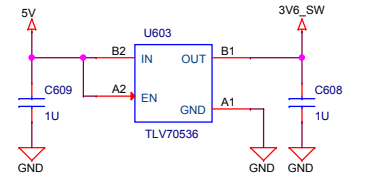
# VMCU Voltage Mirror



# 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



**/HB1 MCU STK Platform**

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**Power & Misc**

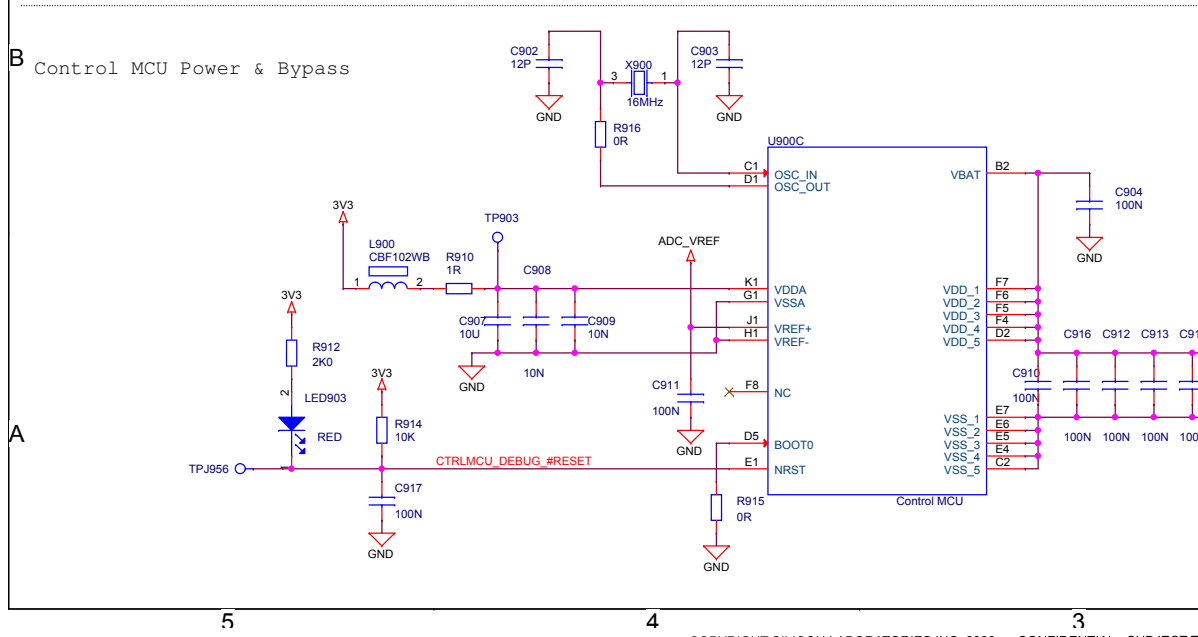
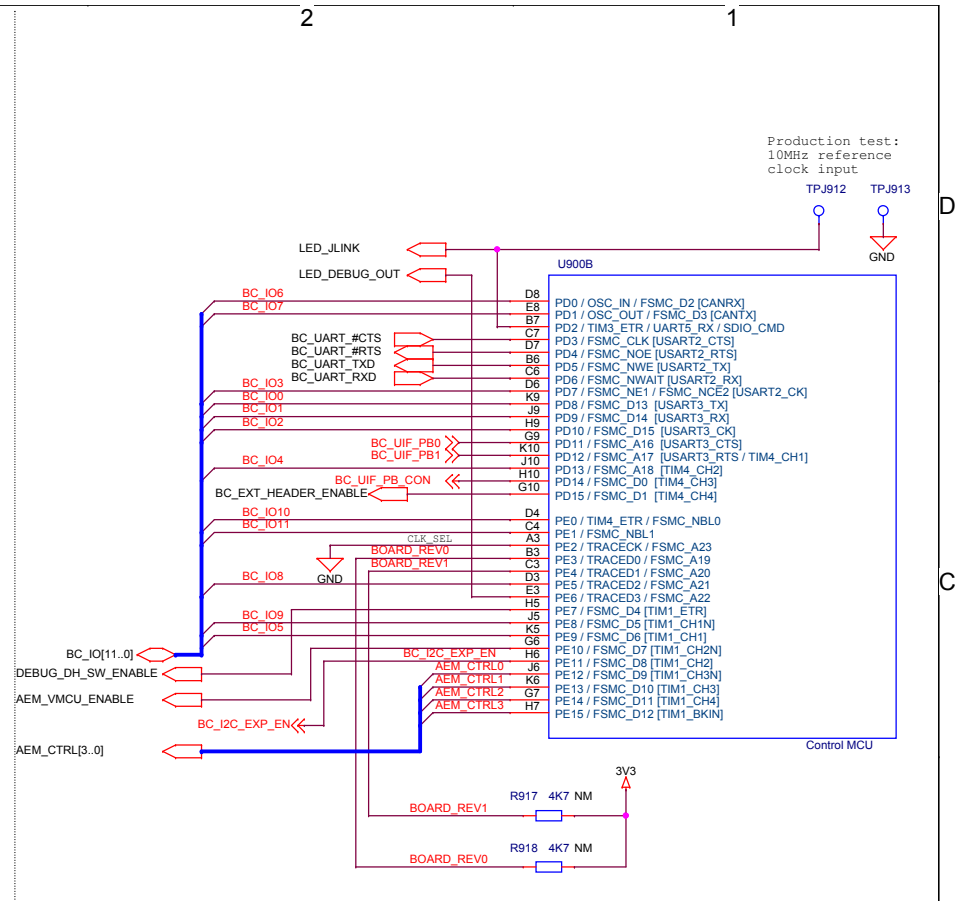
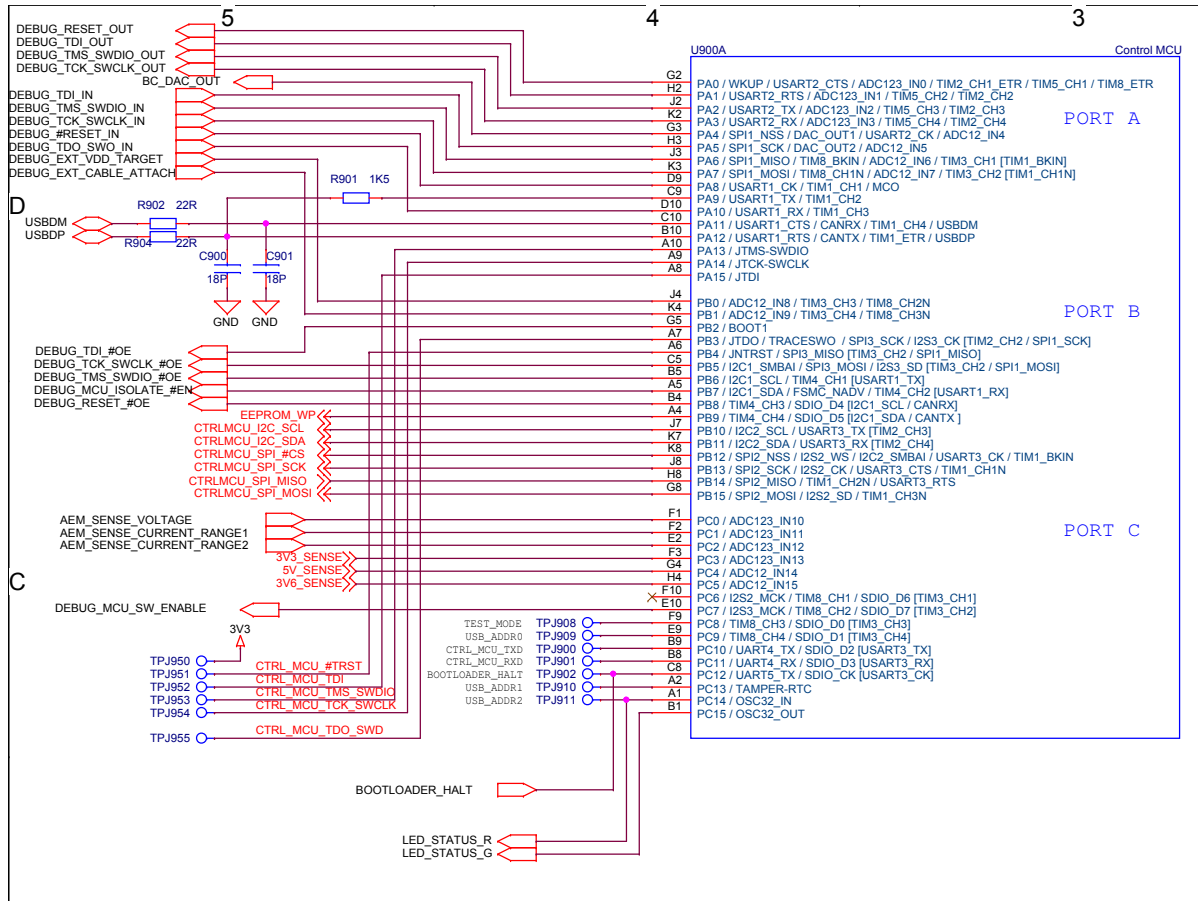
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**A00**

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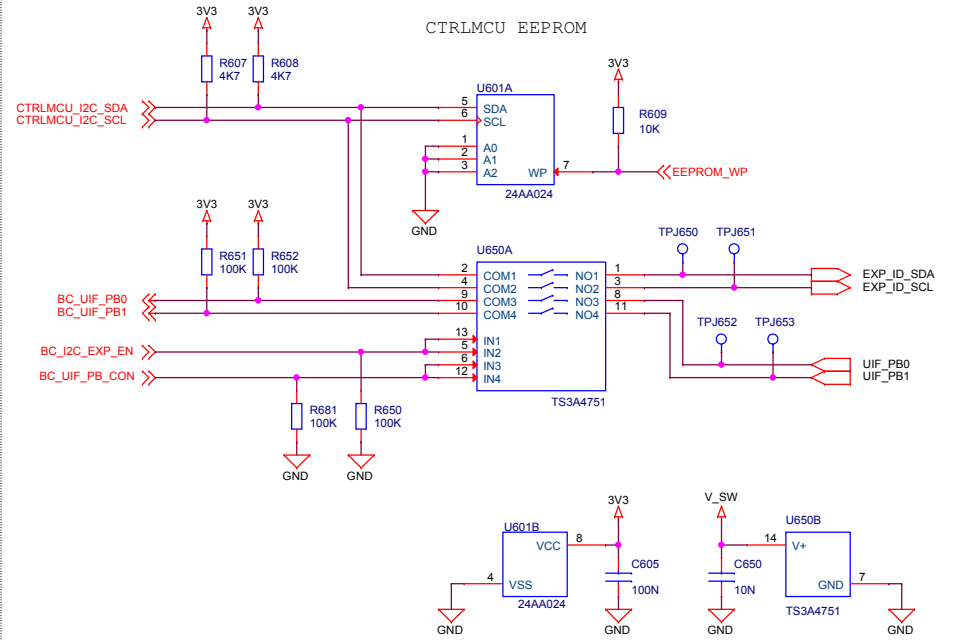
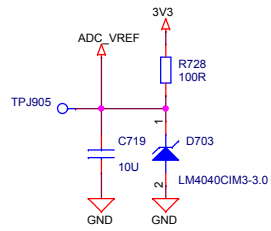
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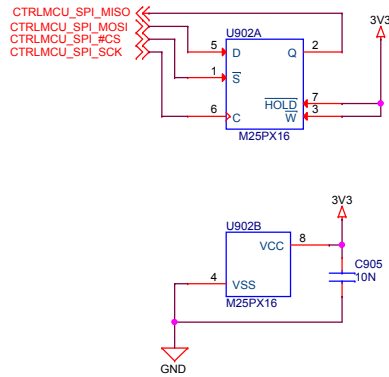
**/HB1/CMCU1 Control MCU**

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		<b>Control MCU</b>	
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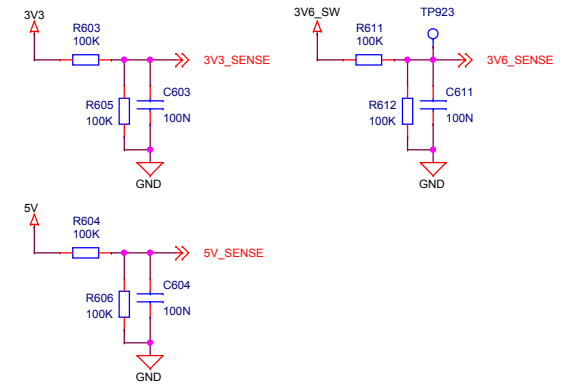
### ADC reference voltage




### CTRLMCU SERIAL FLASH



### POWER SENSE



/HB1/CMCU1  
Control MCU

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