



## Wireless STK Mainboard


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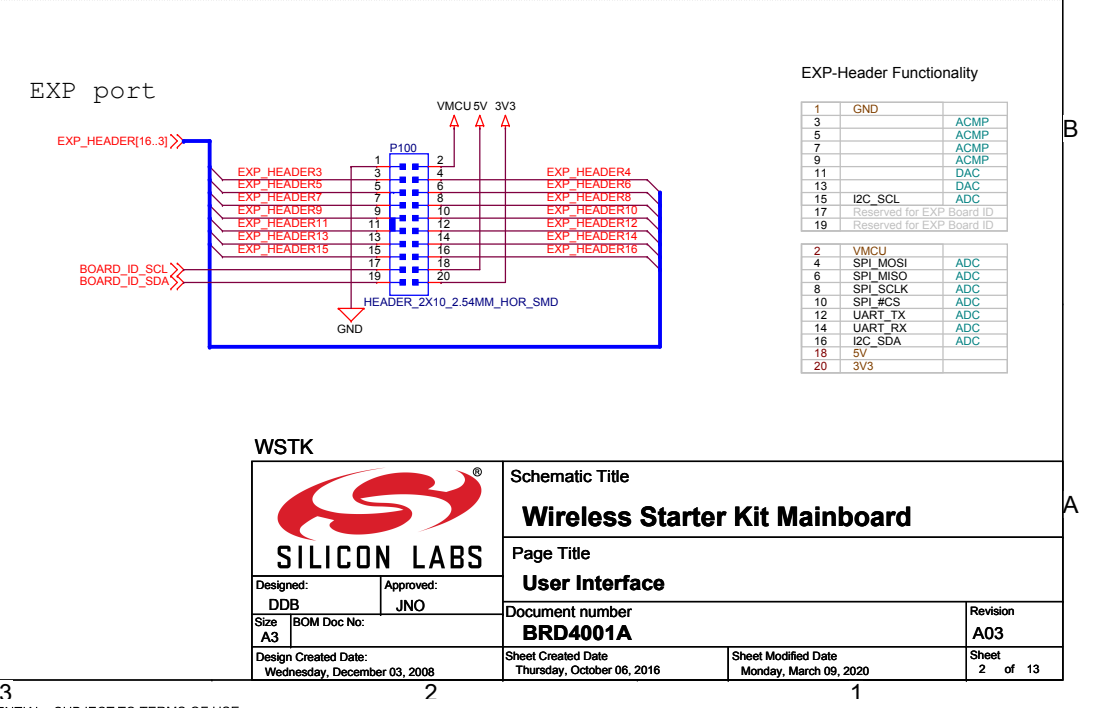
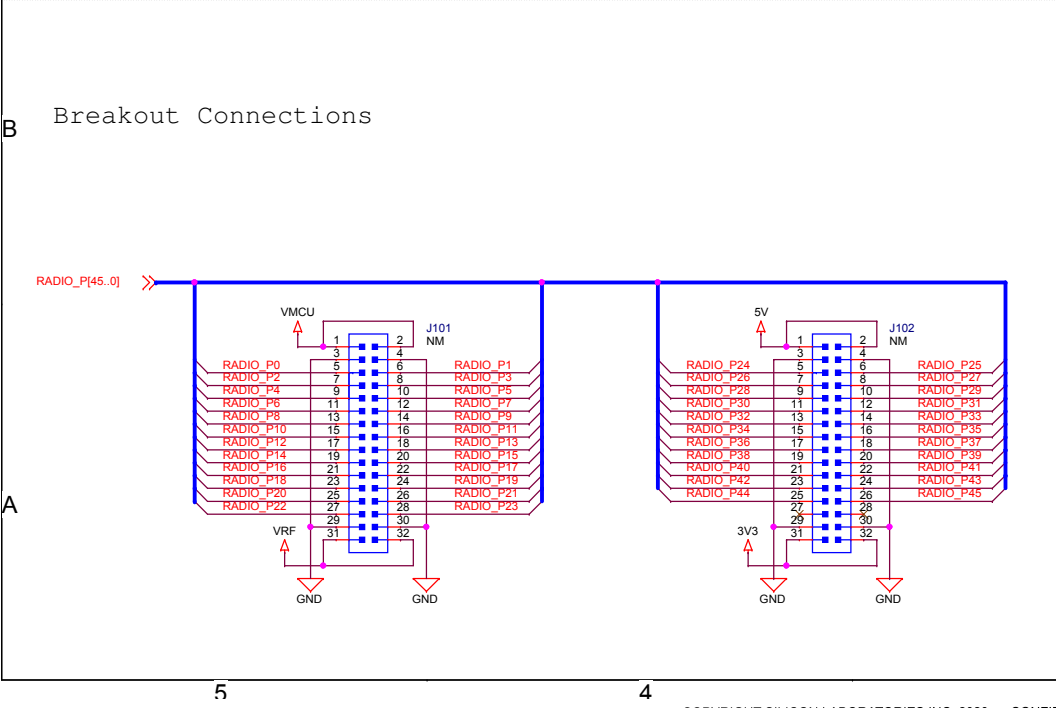
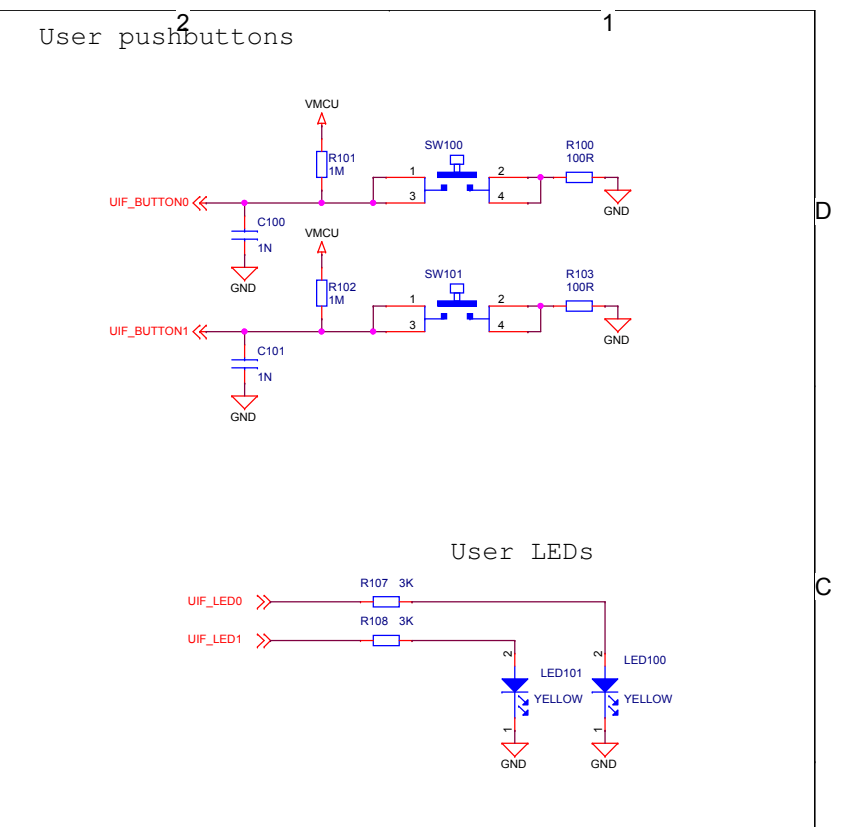
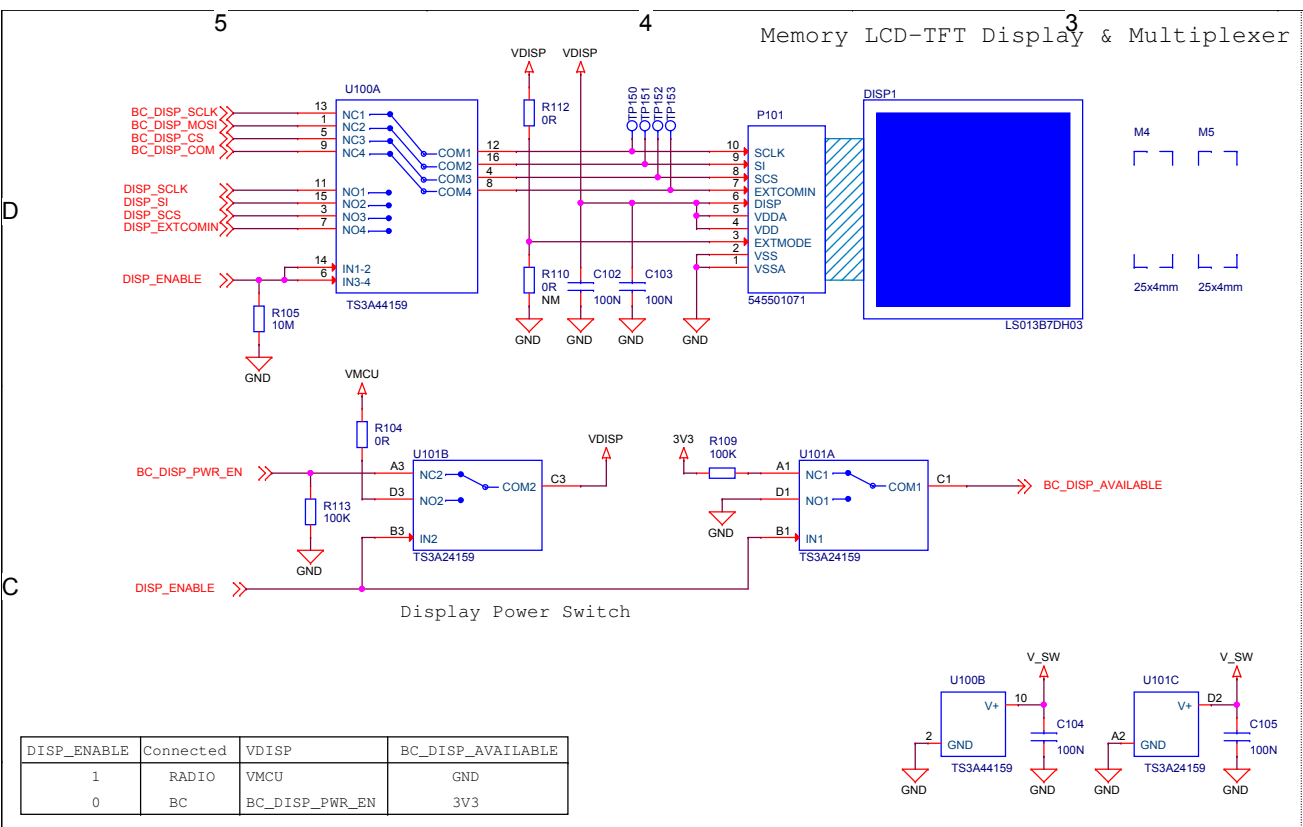
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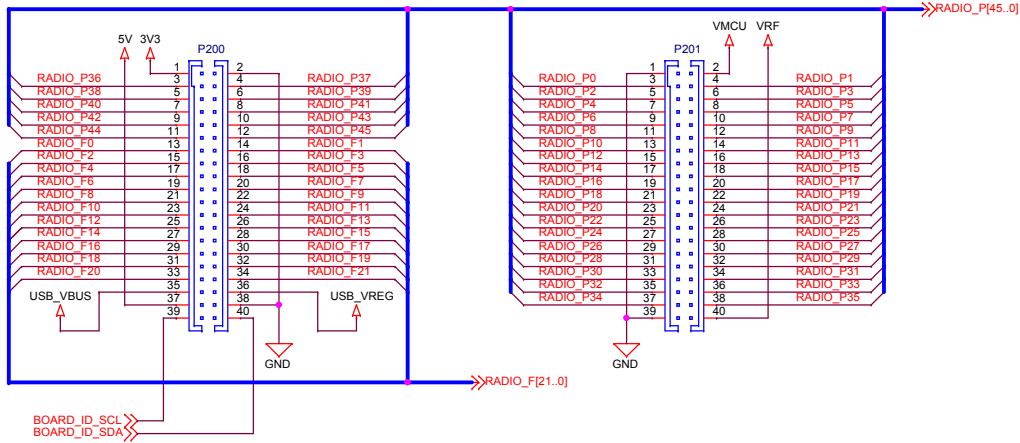
## Revision History

Rev.	Description
A00	Initial production version.
A01	Minor updates for pre-production version.
A02	Replaced various EOL components
A03	Replaced Samtec connectors

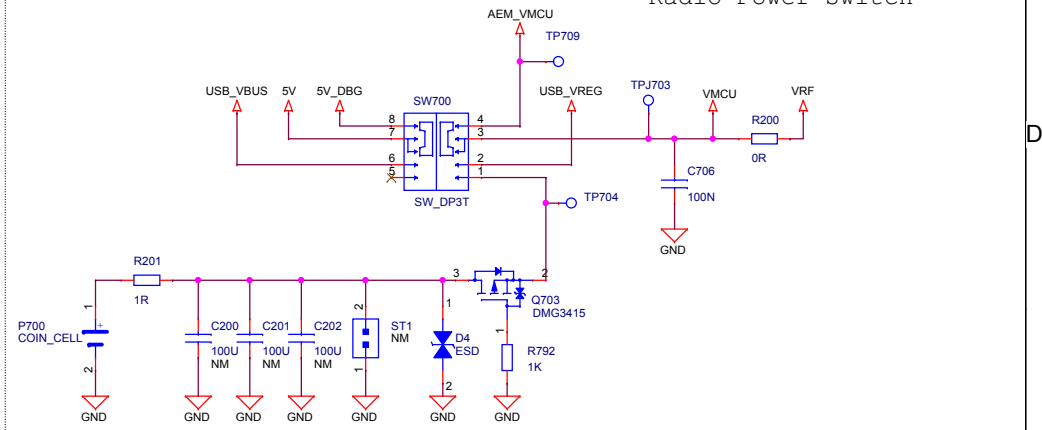
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		<b>Wireless Starter Kit Mainboard</b>	
Designed: <b>DDB</b>		Page Title	
		<b>Title Page</b>	
Approved: <b>JNO</b>		Document number	
Size <b>A3</b>		<b>BRD4001A</b>	
BOM Doc No: <b>BRD4001A_bom.xlsx</b>		Revision	
Design Created Date: <b>Wednesday, December 03, 2008</b>		<b>A03</b>	
		Sheet Created Date <b>Saturday, March 21, 2009</b>	Sheet Modified Date <b>Friday, June 05, 2020</b>
		Sheet <b>1</b>	of 13



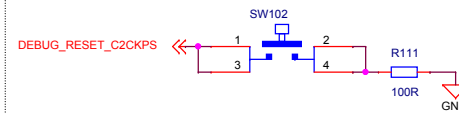
# Radio Board Connectors



# Radio Power Switch

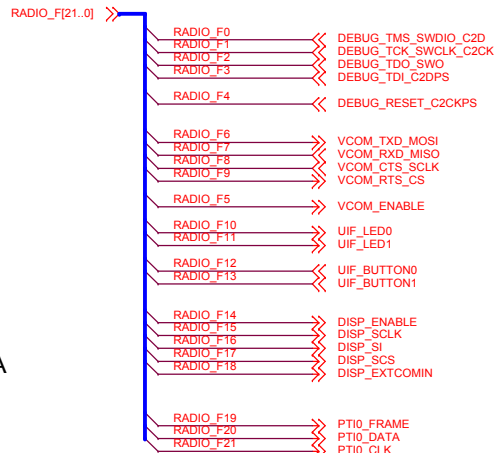


# Radio Reset

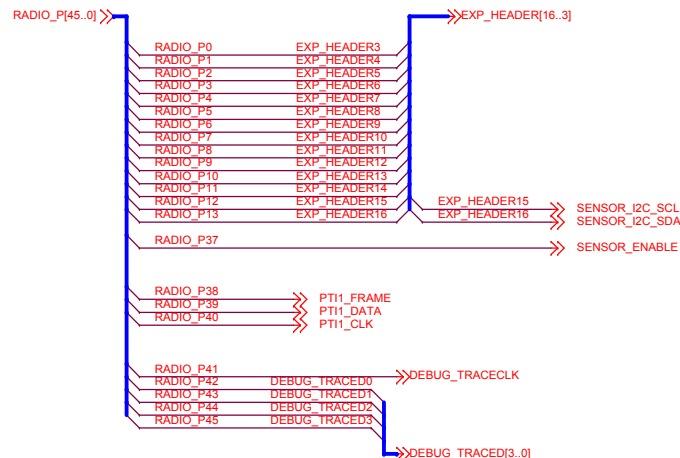


Switch Pos.	Target Supply	EXP Header 5V
1	Output from AEM	J-Link 5V_DBG
2	Target USB_VREG	Target USB_VBUS
3	Coin Cell Battery	(J-Link 5V_DBG)

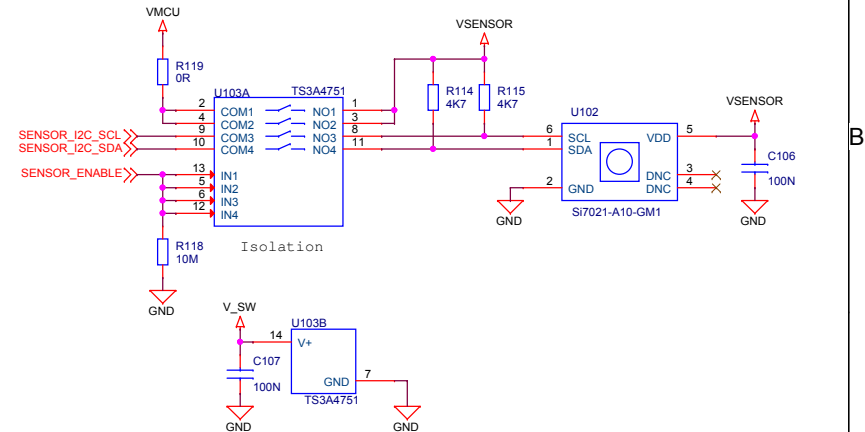
# Dedicated functions on RF Board Connectors



# Functions shared with breakout pins on RF Board Connectors

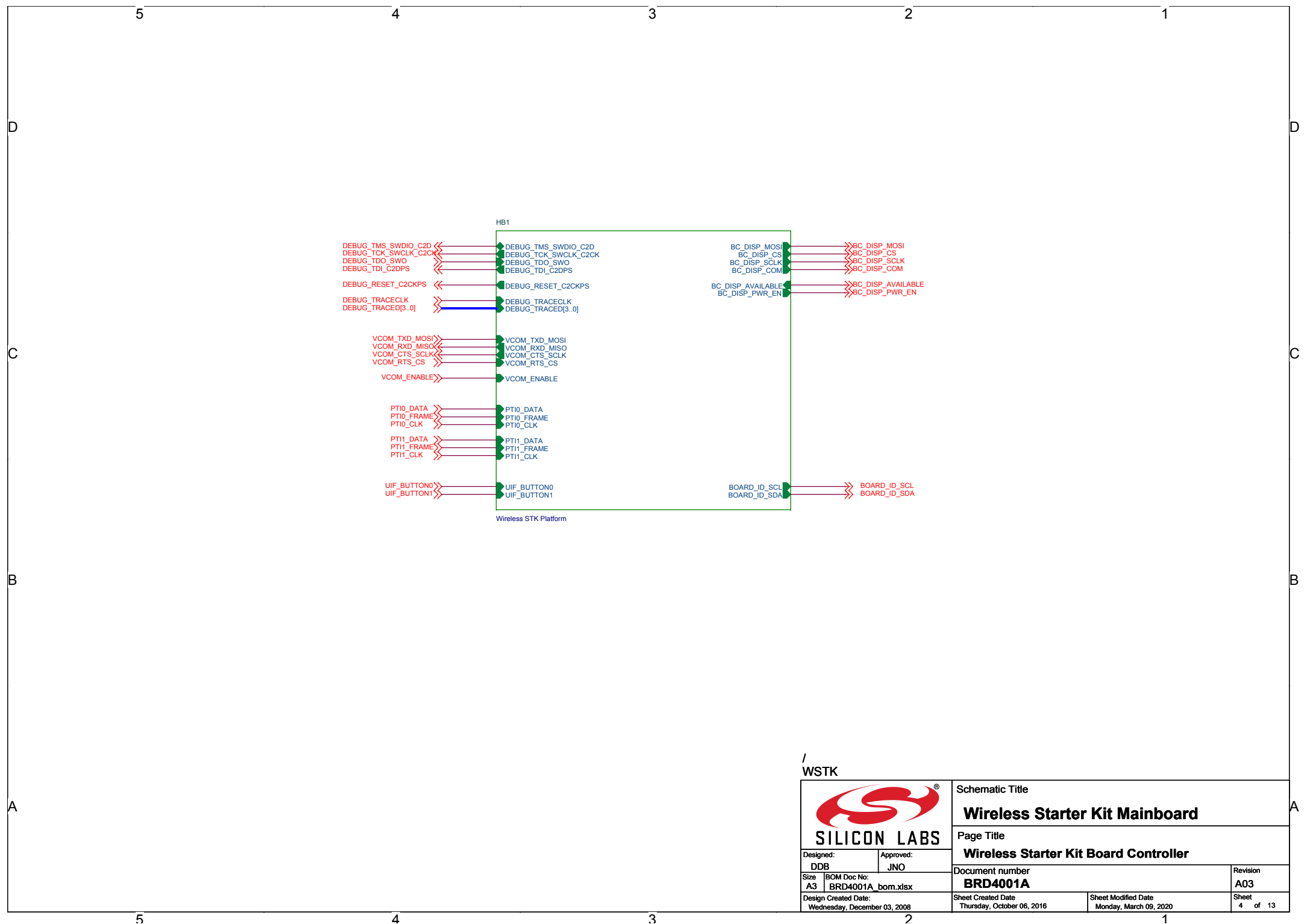


# Relative Humidity & Temperature Sensor




WSTK

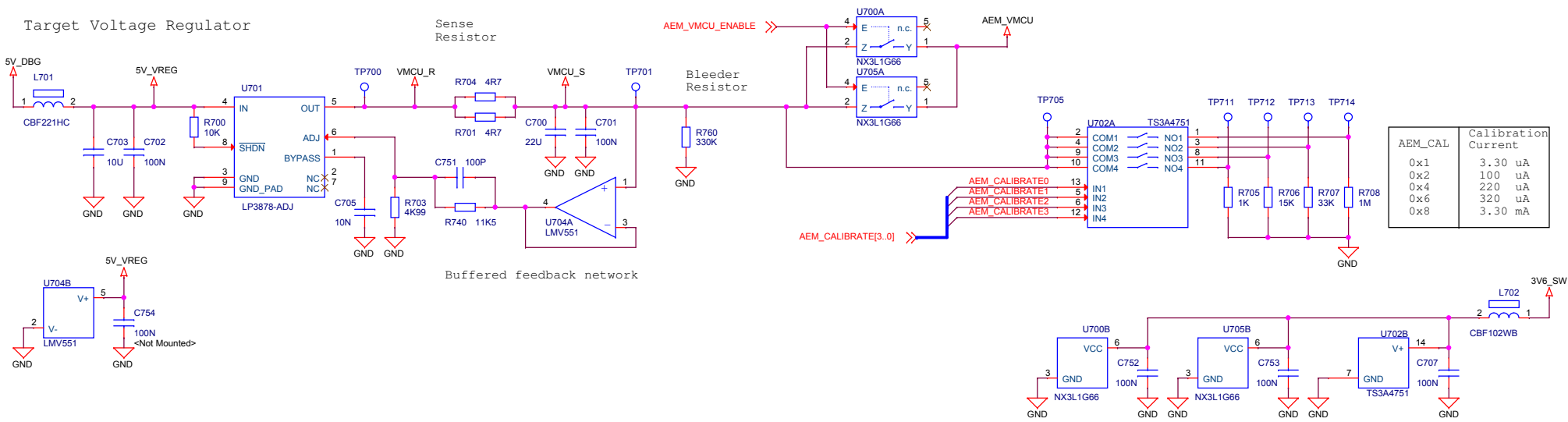
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Approved: JNO BOM Doc No: BRD4001A_bom.xlsx		Document number	
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WSTK

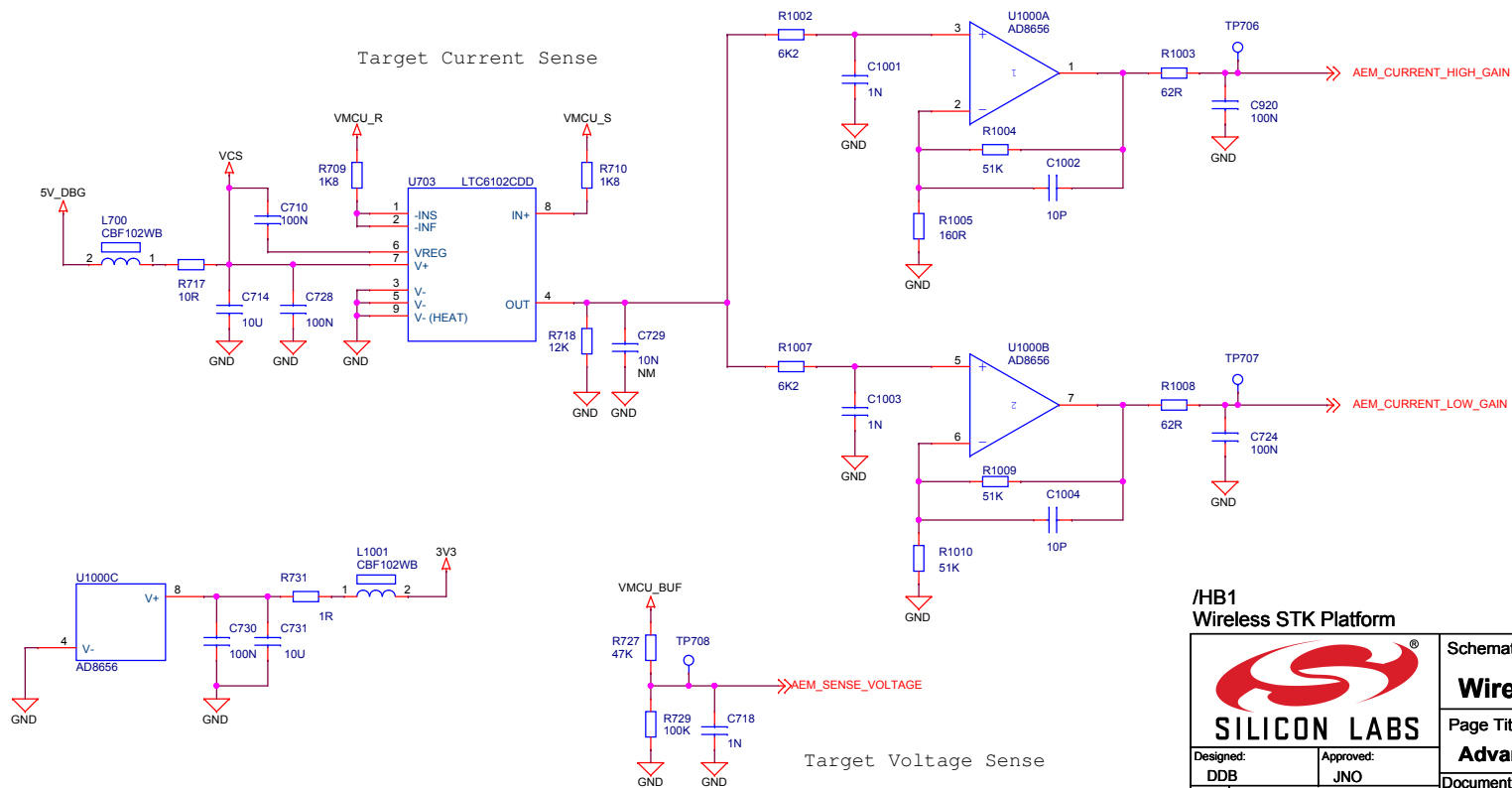
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Approved: JNO		Document number	
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Target Voltage Regulator




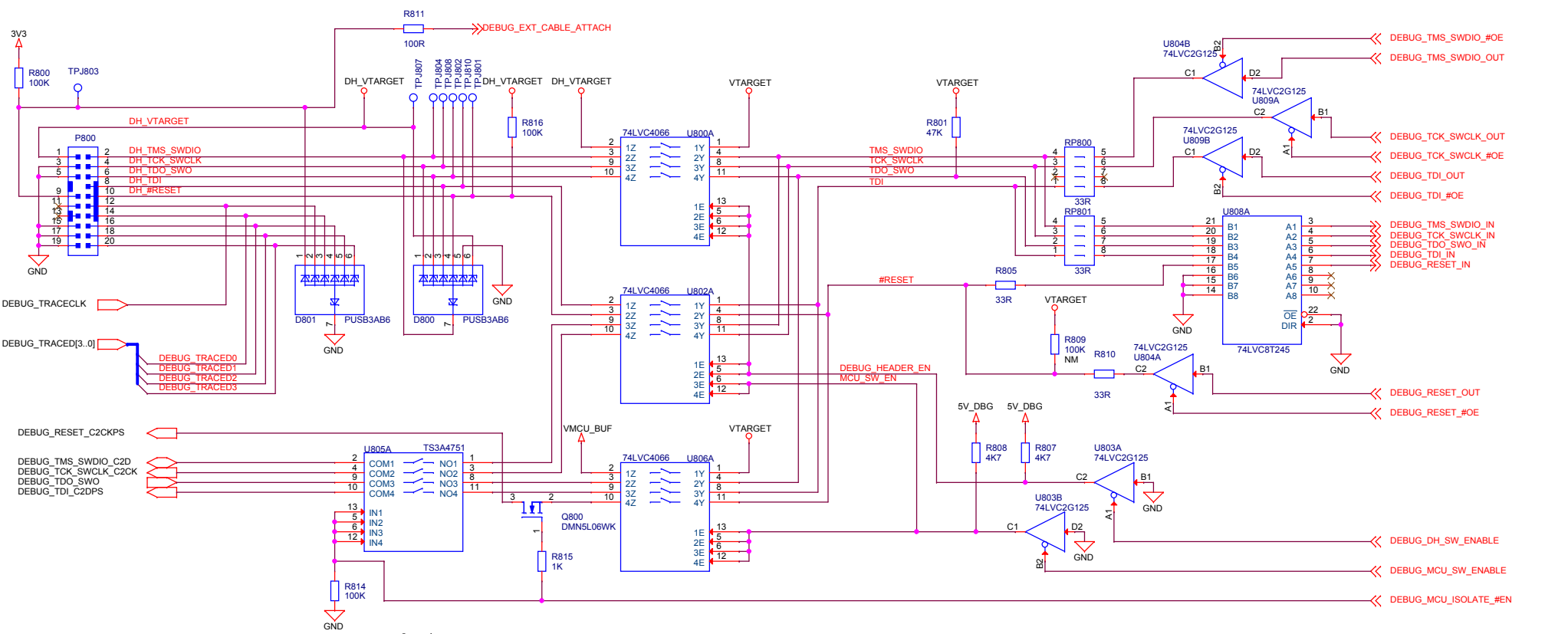
AEM_CAL	Calibration Current
0x1	3.30 uA
0x2	100 uA
0x4	220 uA
0x6	320 uA
0x8	3.30 mA

Target Current Sense



/HB1  
Wireless STK Platform

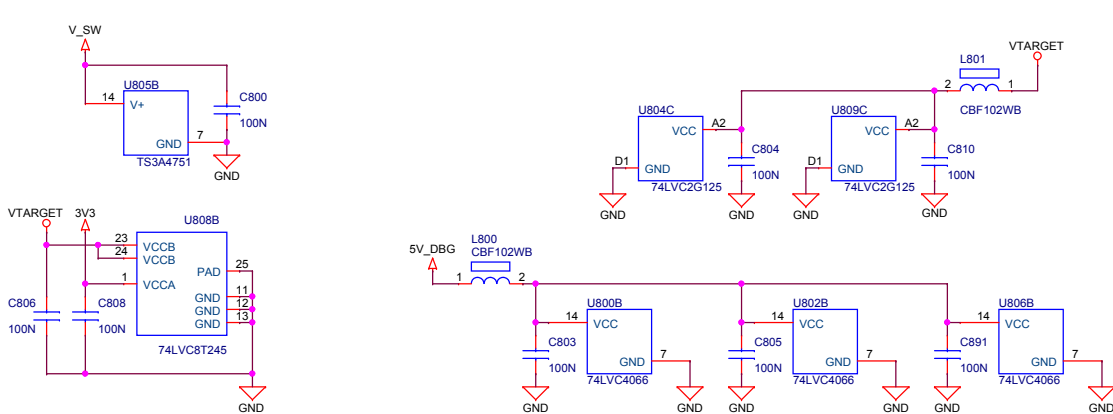
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		<b>Advanced Energy Monitor</b>	
Size: A3	BOM Doc No: <Cage Code>	Document number	Revision
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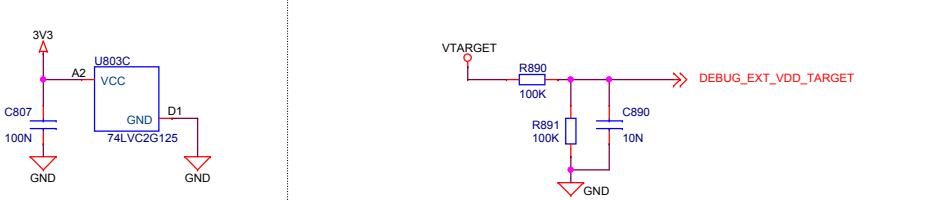
Isolation

MUX

Power & Decoupling



Level Shift & Buffering



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	0	0	1	0	-	-

/HB1  
Wireless STK Platform

**Schematic Title**  
**Wireless Starter Kit Mainboard**

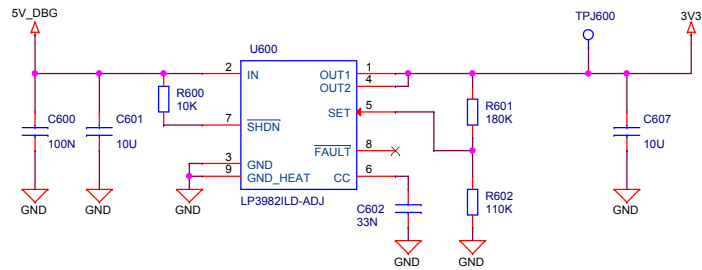
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**Debug Interface**

**Document number**  
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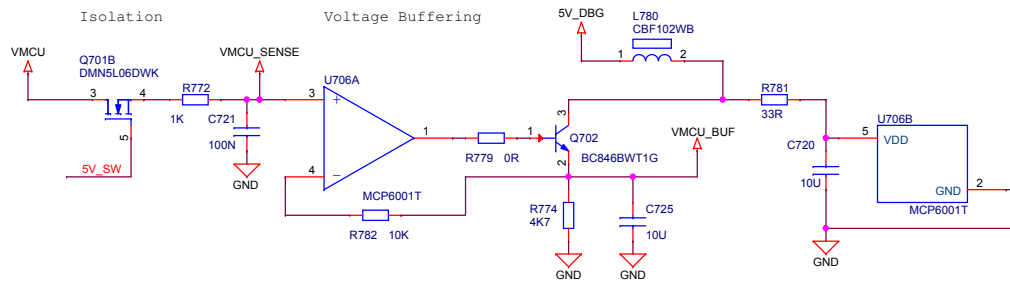
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### 3V3 Regulator



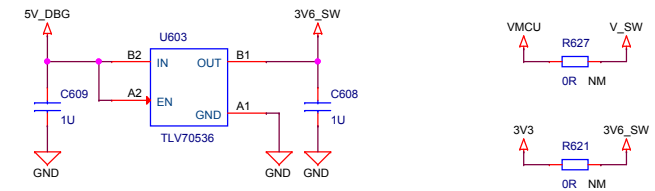
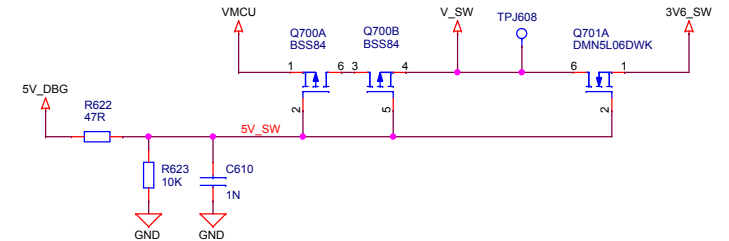
### VMCU Voltage Mirror




### Power Supply for Analog Switches

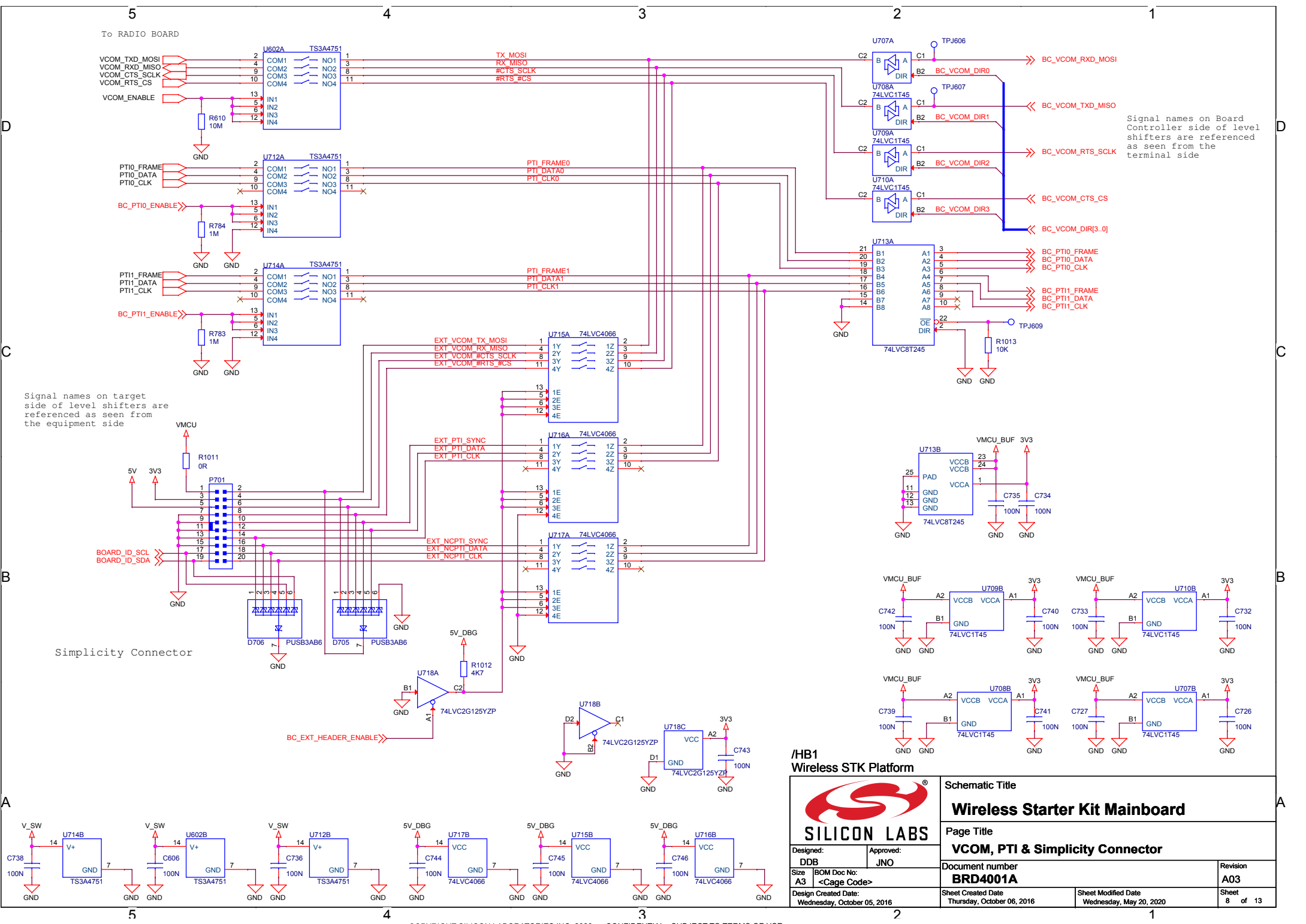
Analog switches used for isolation are powered by 3V6\_SW when the USB cable is connected, otherwise by VMCU.

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



### Wireless STK Platform

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		<b>Voltage Regulators</b>	
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Signal names on Board Controller side of level shifters are referenced as seen from the terminal side

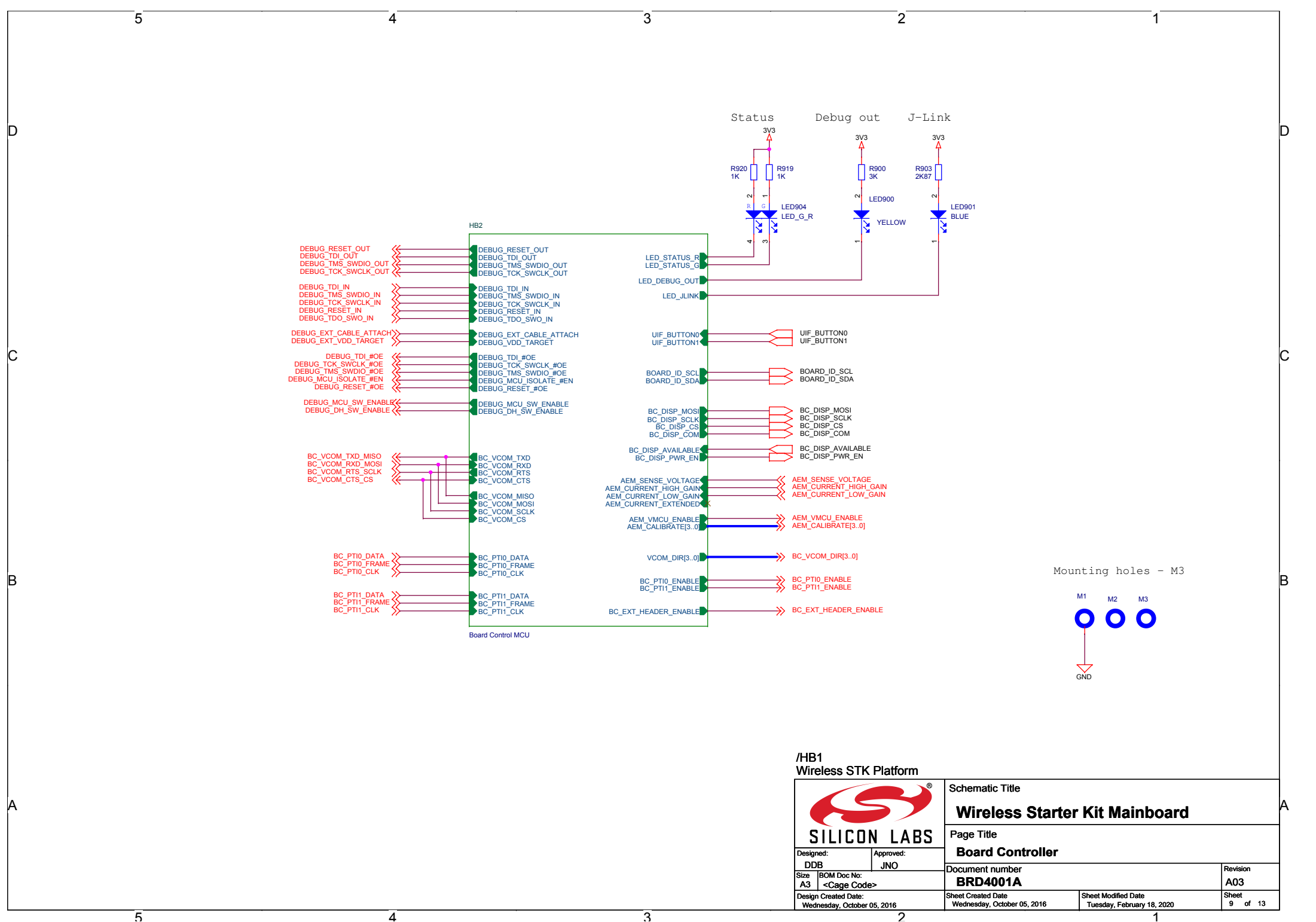
Signal names on target side of level shifters are referenced as seen from the equipment side

Simplicity Connector


/HB1  
Wireless STK Platform

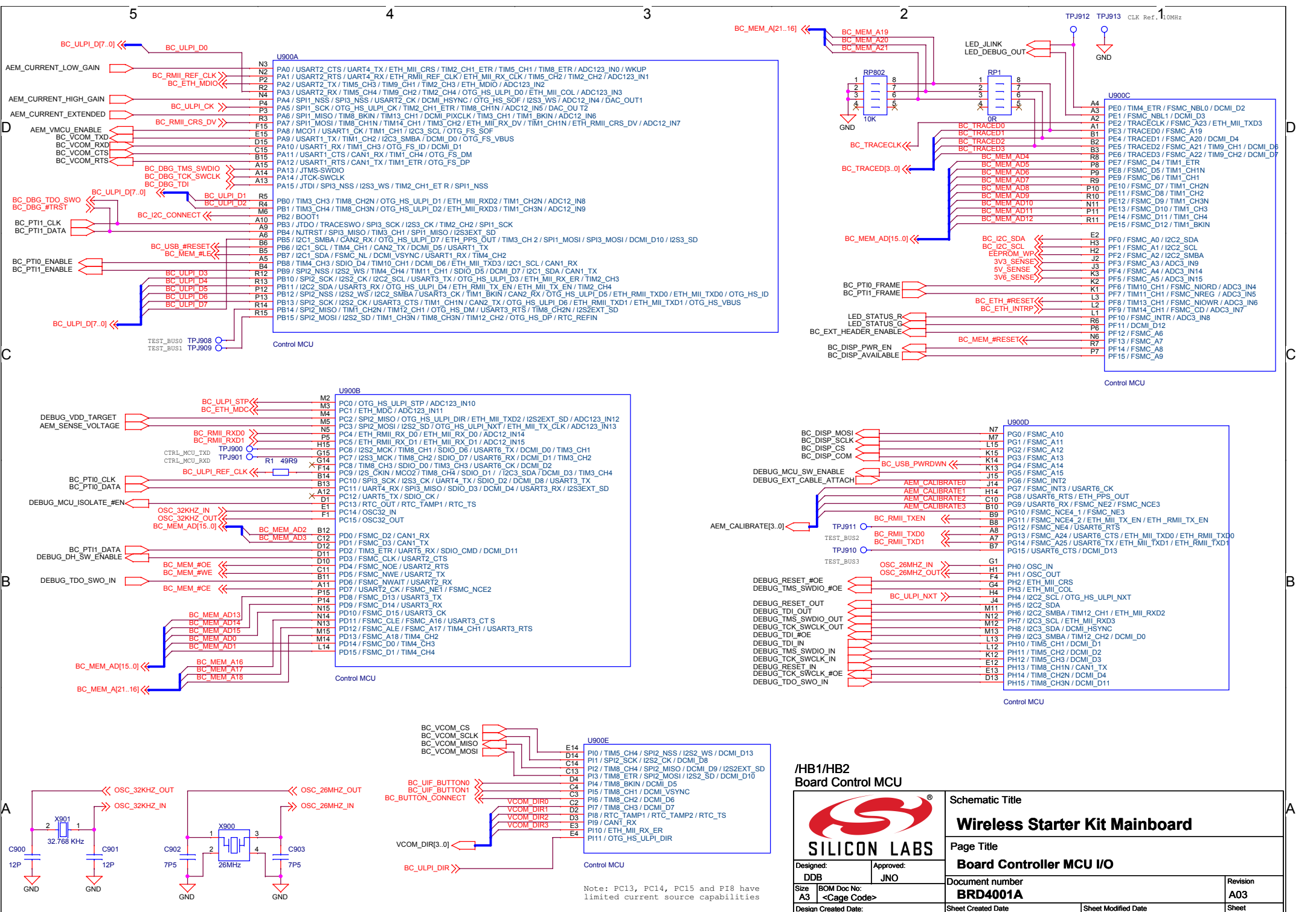
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		<b>VCOM, PTI &amp; Simplicity Connector</b>	
Design Created Date: Wednesday, October 05, 2016		Document number	
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/HB1  
Wireless STK Platform

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**/HB1/HB2 Board Control MCU**

**SILICON LABS**

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**Board Controller MCU I/O**

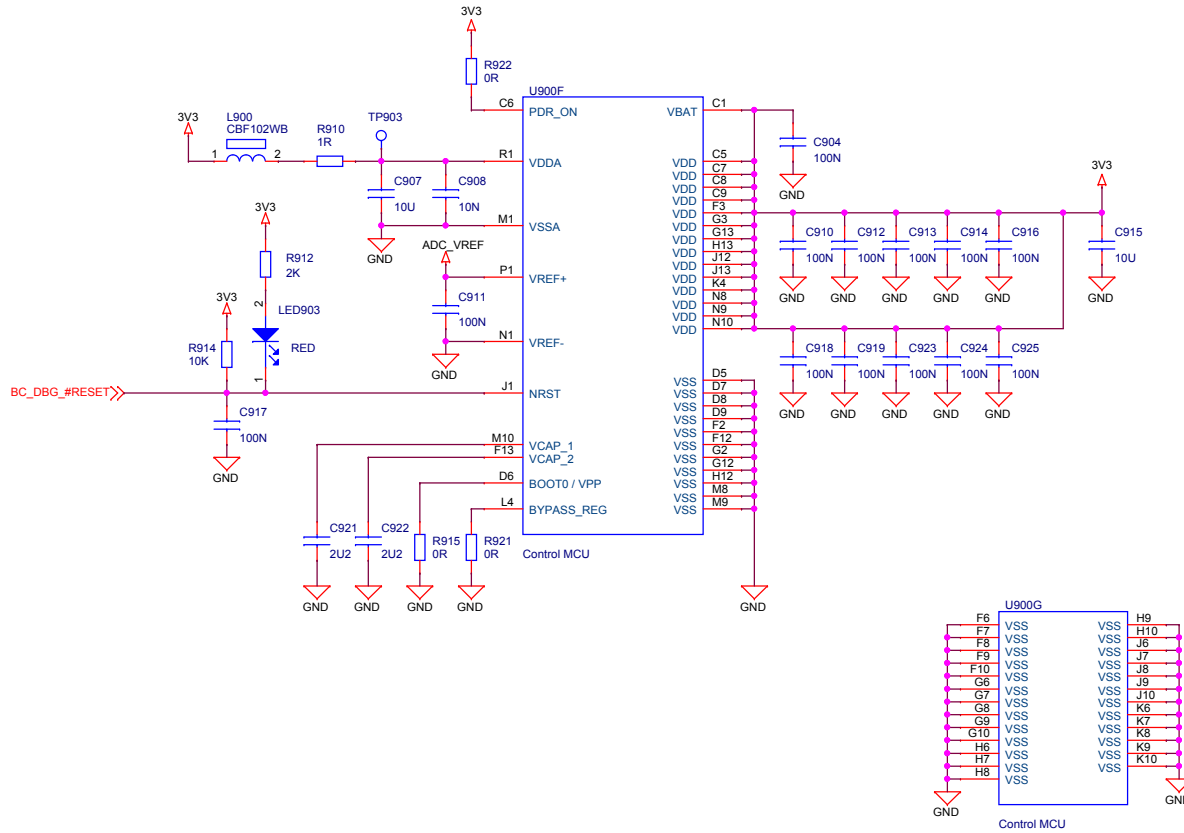
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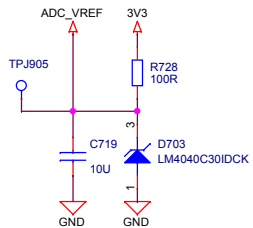
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Note: PC13, PC14, PC15 and PI8 have limited current source capabilities

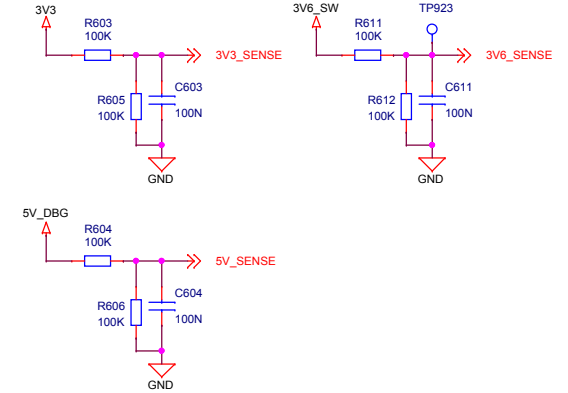
Board Controller Power & Decoupling:



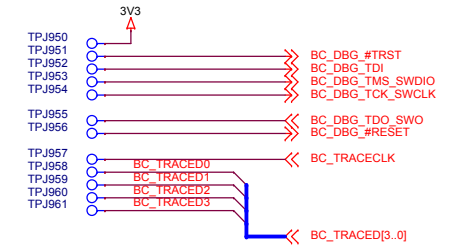
ADC reference voltage




POWER SENSE



Board Controller Debug & Trace Test Points

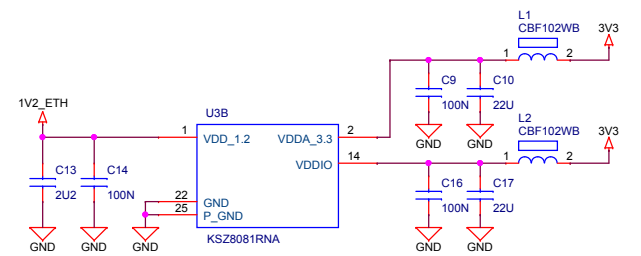
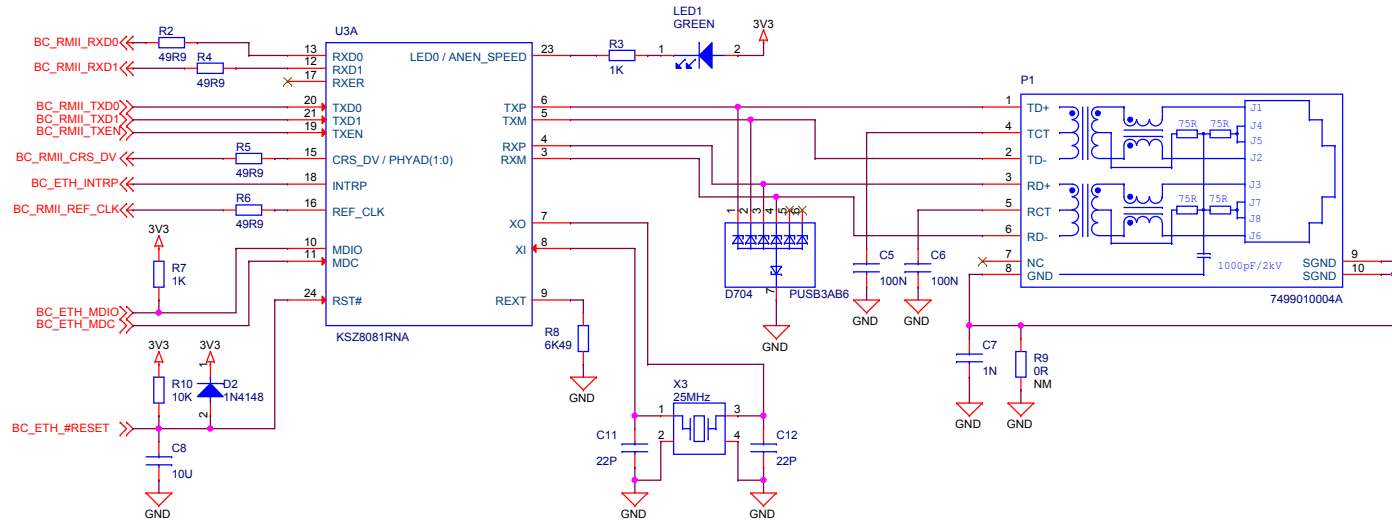


/HB1/HB2  
Board Control MCU

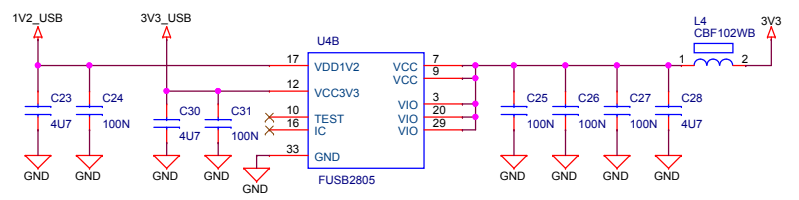
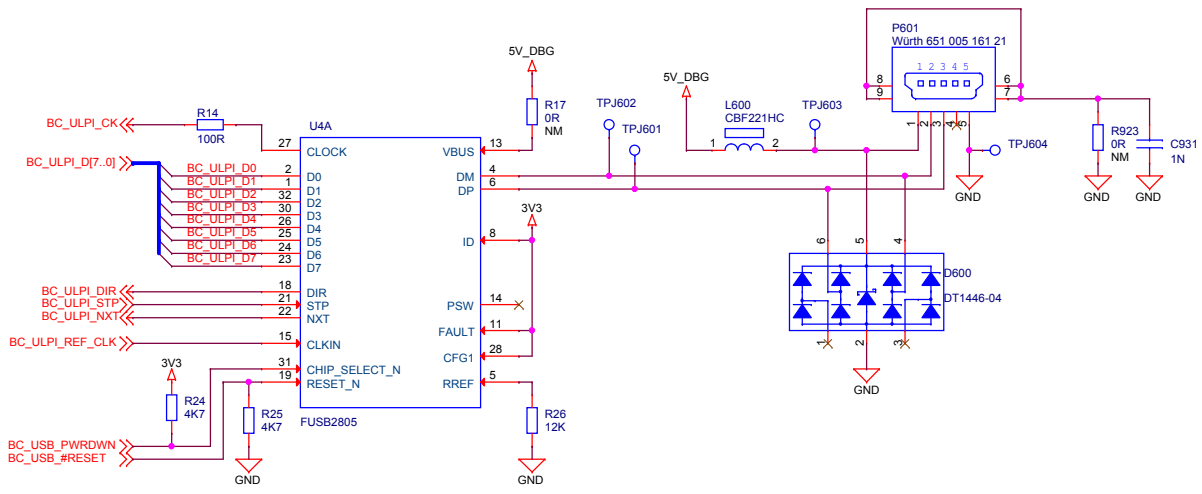
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# 10/100 Mbit Ethernet PHY



# USB High Speed



## /HB1/HB2 Board Control MCU

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		<b>Board Controller USB &amp; Ethernet</b>	
Size: A3	BOM Doc No: <Cage Code>	Document number	Revision
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