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BG22 Explorer Kit EFR32BG22C224F512IM40	
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Revision History	
Rev.	Description
A00	Initial production release.
A01	Added U901, R916 changed to 10k, updated RF section and EEPROM.



Designed
MAH

Approved
RGU

Size
A3

Sheet Modified Date
Friday, March 19, 2021

Board Name
BG22 Explorer Kit

Page Title
Title Page

Board Number
BRD4108A

Revision
A01

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The image displays two sections of a PCB layout for the EFR32BG22 microcontroller. The left section, titled 'EFR32BG22 Power Section', shows the power management circuitry. It includes a DC/DC Regulator (U1C) with pins for Reset, RESETh, Digital Supply (VREGVDD), Analog Supply (AVDD), I/O Supply (IOVDD), and Ground (VREGVSS, VSS_PAD). The circuit is powered by VMCU and VDDC. It features a reset button (SW301 TS3401) with a pull-up resistor (R1 100R) and a capacitor (C1 100N). Other components include capacitors C8 (10U), C20 (1U), C7 (4U7), and C16 (1U), along with inductors L3 (2U2) and L4 (1N5). The right section, titled 'EFR32BG22 RF Section', shows the RF circuitry. It includes an RF Crystal (X1 38.4 MHz) connected to the RF I/O pins (HFXTAL_I, HFXTAL_O). The RF section also includes a 2.4 GHz Matching Network (L1 2N7, L2 2N7, C3 TBD NM, C4 1P2) and an Antenna Matching Network (L4 1N5, C5 1P5). The antenna is connected to the RFVSS pin (ANT1 2450AT18D0100). The layout is color-coded: blue for the microcontroller, red for power and ground, and green for RF components.

The image displays two sections of a PCB layout for the EFR32BG22 microcontroller. The left section, titled 'EFR32BG22 Power Section', shows the power management circuitry. It includes a DC/DC Regulator (U1C) with pins for Reset, RESETh, Digital Supply (VREGVDD), Analog Supply (AVDD), I/O Supply (IOVDD), and Ground (VREGVSS, VSS_PAD). The circuit is powered by VMCU and VDDC. It features a reset button (SW301 TS3401) with a pull-up resistor (R1 100R) and a capacitor (C1 100N). Other components include capacitors C8 (10U), C20 (1U), C7 (4U7), and C16 (1U), along with inductors L3 (2U2) and L4 (1N5). The right section, titled 'EFR32BG22 RF Section', shows the RF circuitry. It includes an RF Crystal (X1 38.4 MHz) connected to the RF I/O pins (HFXTAL_I, HFXTAL_O). The RF section also includes an RF Analog Power block (U1B) with pins for RFVDD, RFVSS, and PA Power (PAVDD). The circuit is powered by VDDC and VMCU. It features capacitors C11 (100N), C12 (120P), C18 (100N), and C19 (120P), along with inductors L1 (2N7), L2 (2N7), and L4 (1N5). The RF section is connected to a 2.4 GHz Matching Network and an Antenna Matching Network (ANT1 2450AT18D0100).

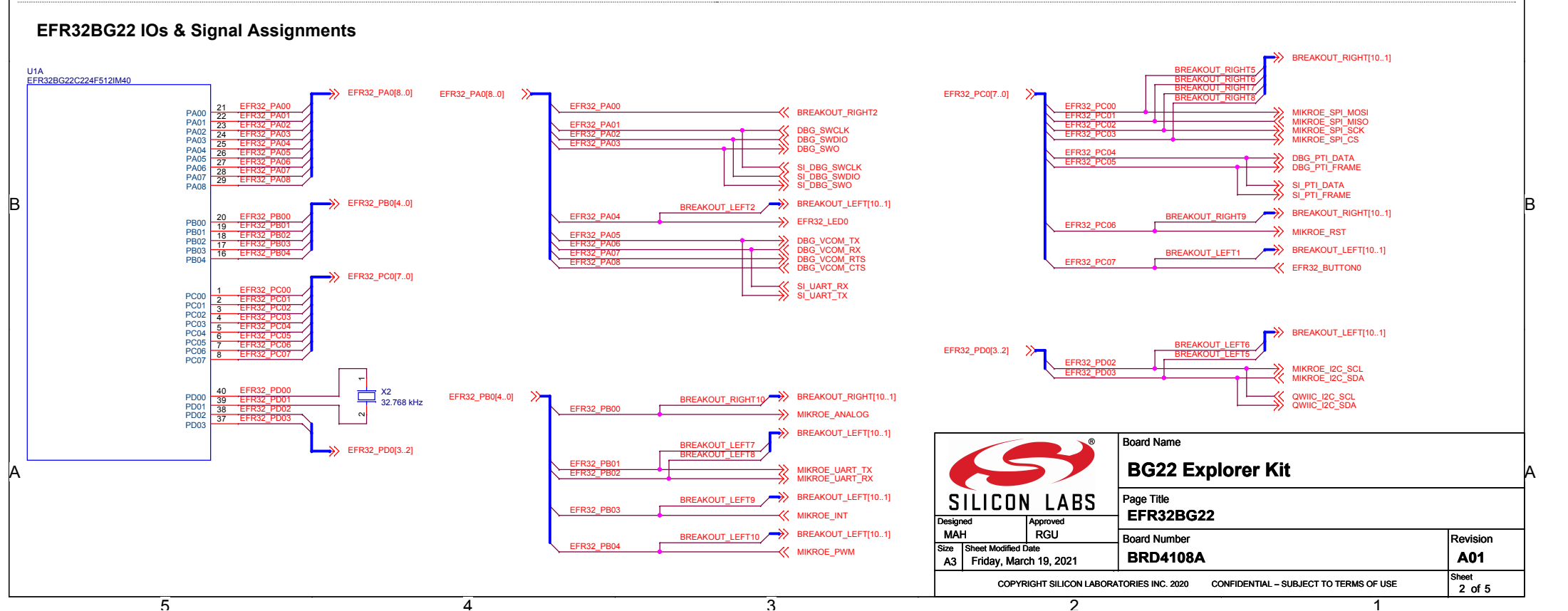
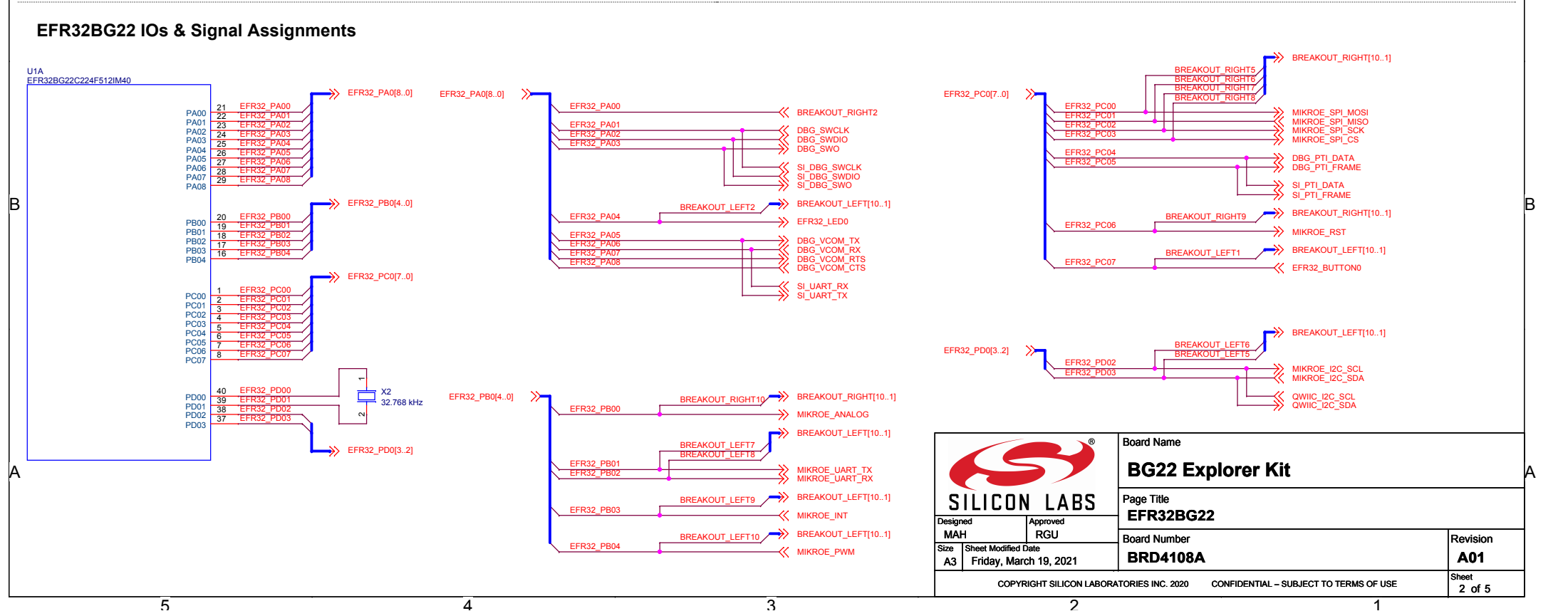
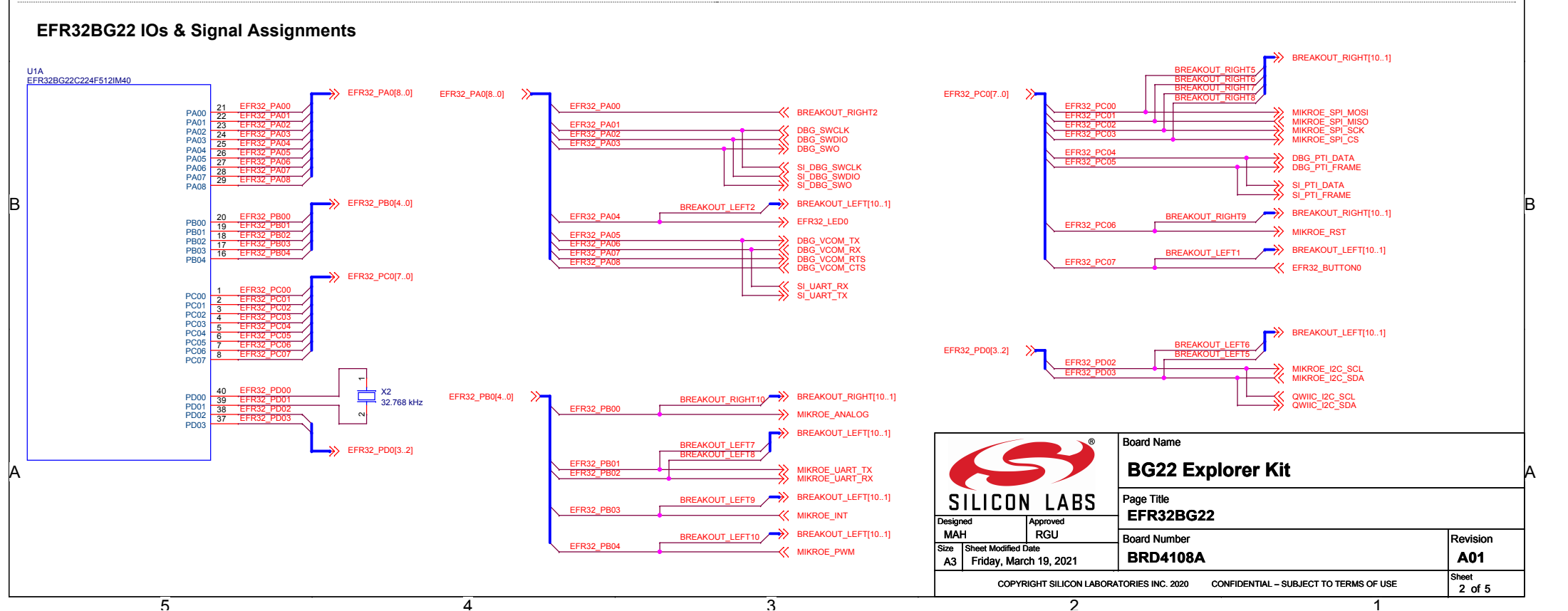
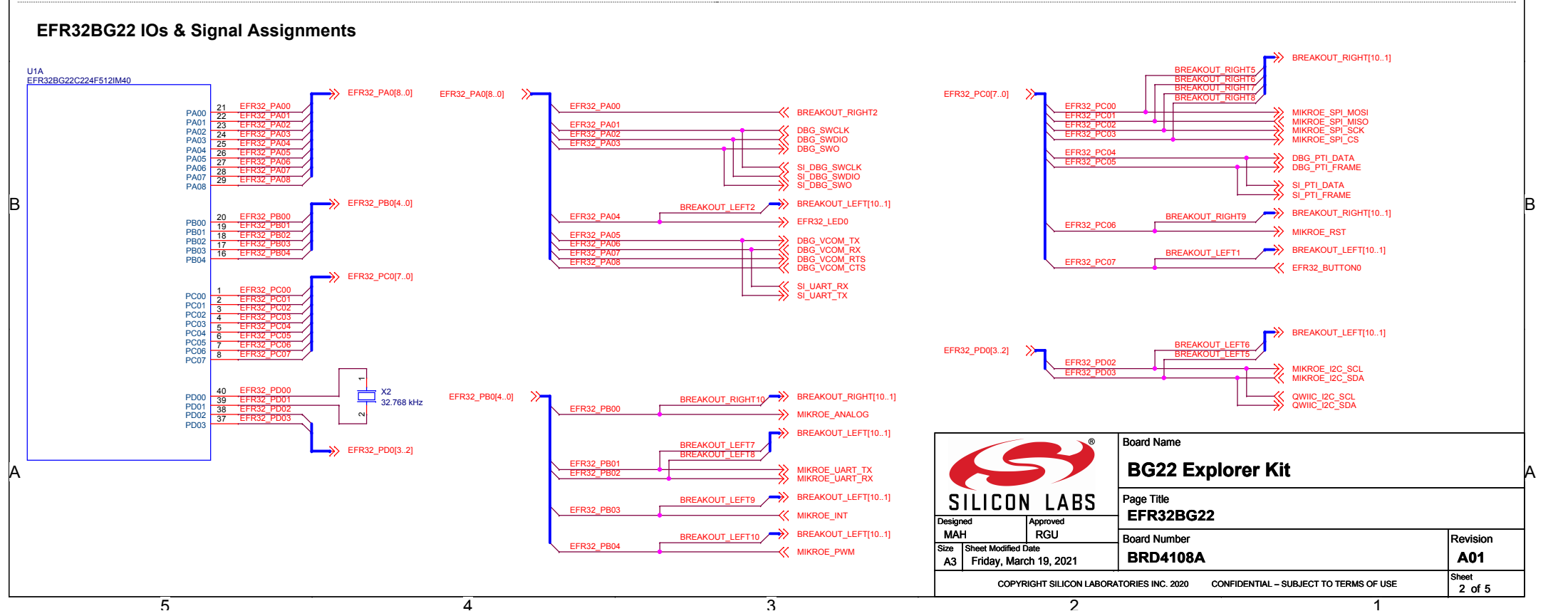
EFR32BG22 IOs & Signal Assignments

Pin Connections:

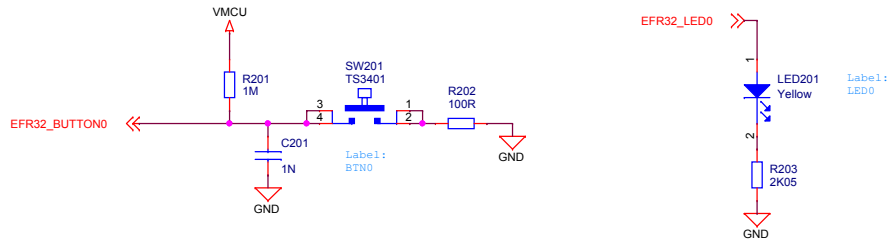
- PA00-PA08:** EFR32_PA00, EFR32_PA01, EFR32_PA02, EFR32_PA03, EFR32_PA04, EFR32_PA05, EFR32_PA06, EFR32_PA07, EFR32_PA08
- PB00-PB04:** EFR32_PB00, EFR32_PB01, EFR32_PB02, EFR32_PB03, EFR32_PB04
- PC00-PC07:** EFR32_PC00, EFR32_PC01, EFR32_PC02, EFR32_PC03, EFR32_PC04, EFR32_PC05, EFR32_PC06, EFR32_PC07
- PD00-PD03:** EFR32_PD00, EFR32_PD01, EFR32_PD02, EFR32_PD03

Crystal: X2 (32.768 kHz) connected to PD00 and PD01.

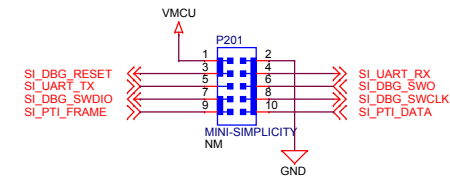
		Board Name BG22 Explorer Kit	
Designed MAH		Page Title EFR32BG22	
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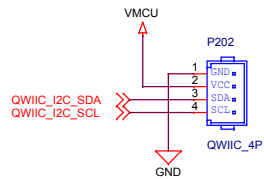
Push Button & LED



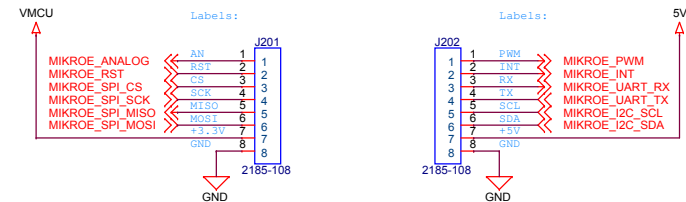
Mini Simplicity Connector



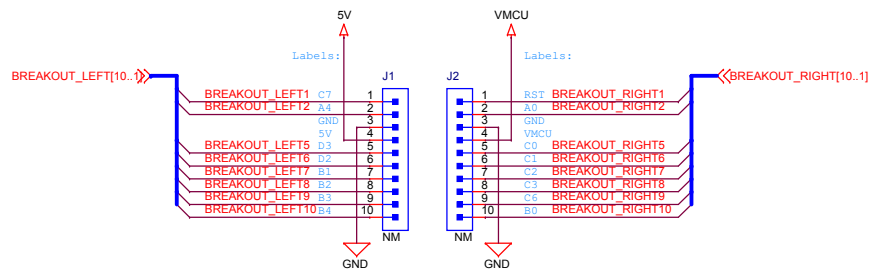
Qwiic Connector



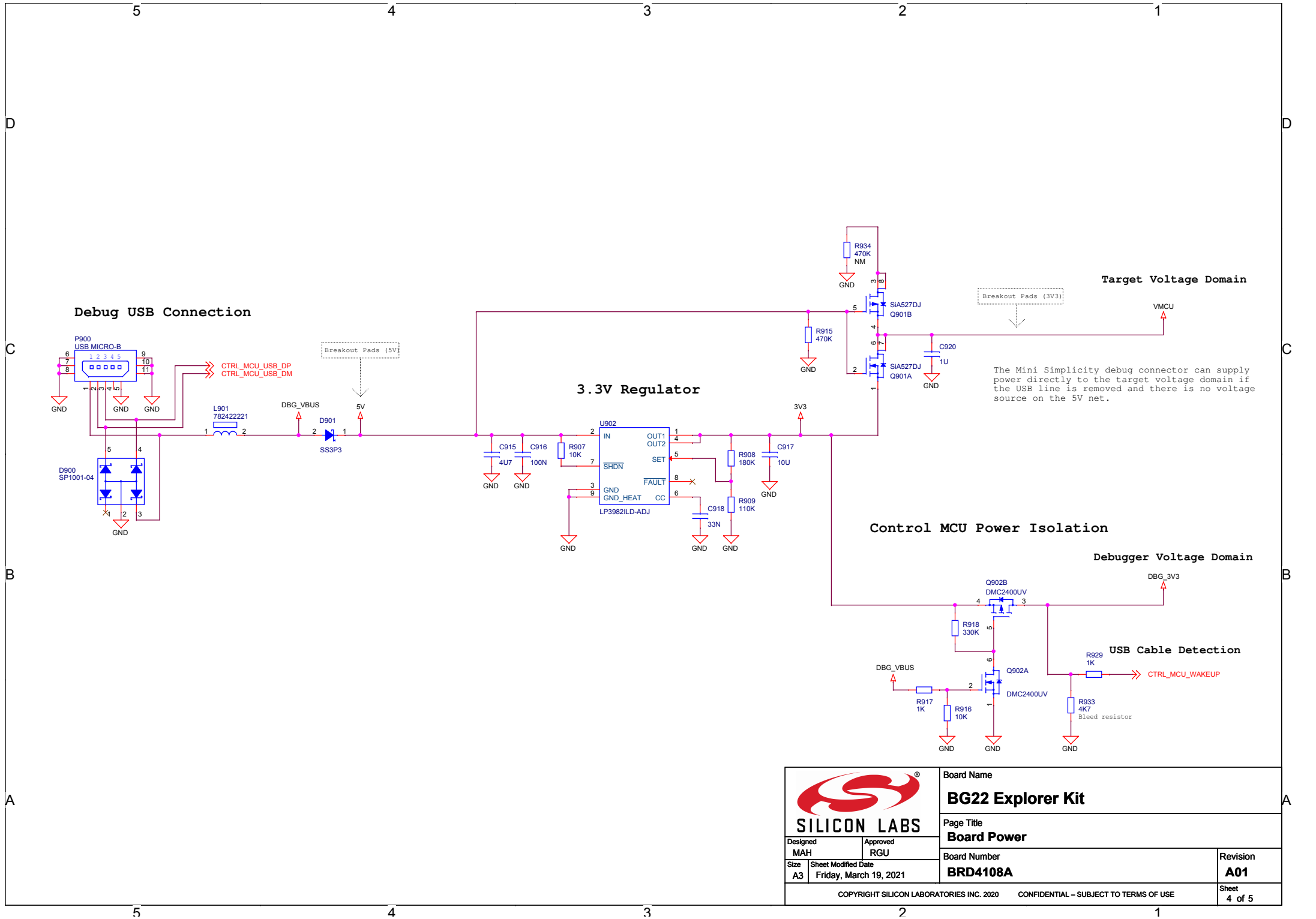
MikroE Socket



Breakout Pads

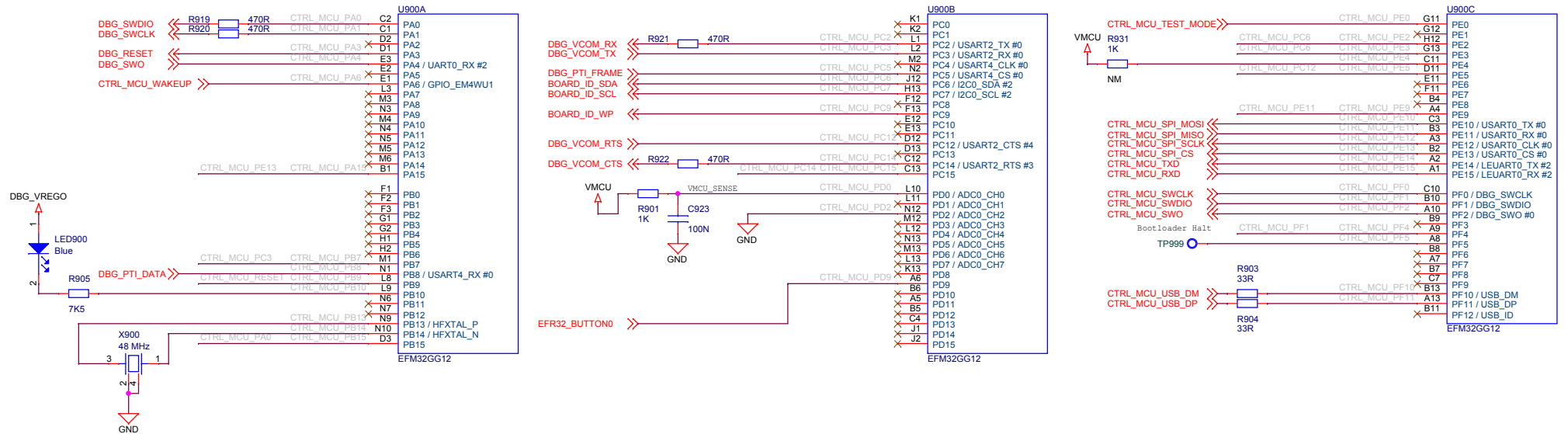


 SILICON LABS		Board Name	
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Size A3		User Interface	
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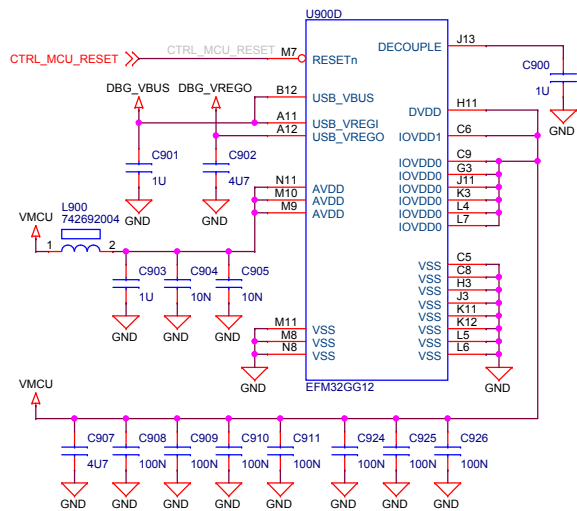


 SILICON LABS		Board Name BG22 Explorer Kit	
Designed MAH		Page Title Board Power	
Approved RGU		Board Number BRD4108A	
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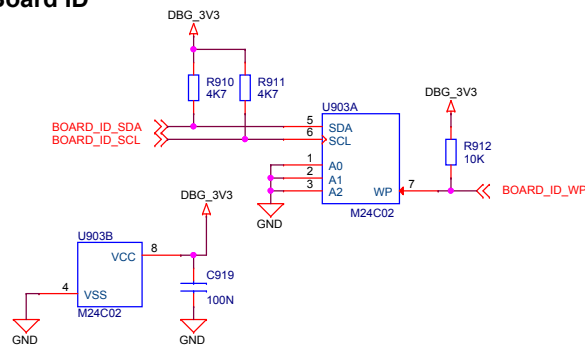
On-board Debugger



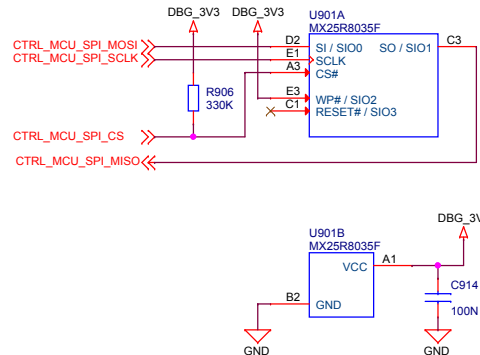
On-board Debugger Power



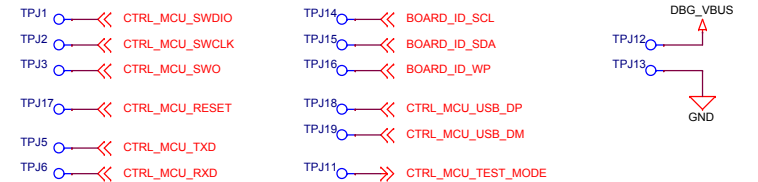
Board ID



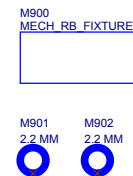
Serial Flash




Test Points



Mechanical



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