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REVISION HISTORY:

|     |  |
|-----|--|
| A01 | Initial Release  |
| A12 | Revised antenna, RF matching network, LF XTAL, power routing                                       |
| A13 | Updated stacking connectors, corrected typo in OPN   |
| A14 | Placeholder components on RF_VBATT,RF_AVDD, C21 populated<br>Load caps provision on Y1,TP1 Removed |

A

A

B


B

C

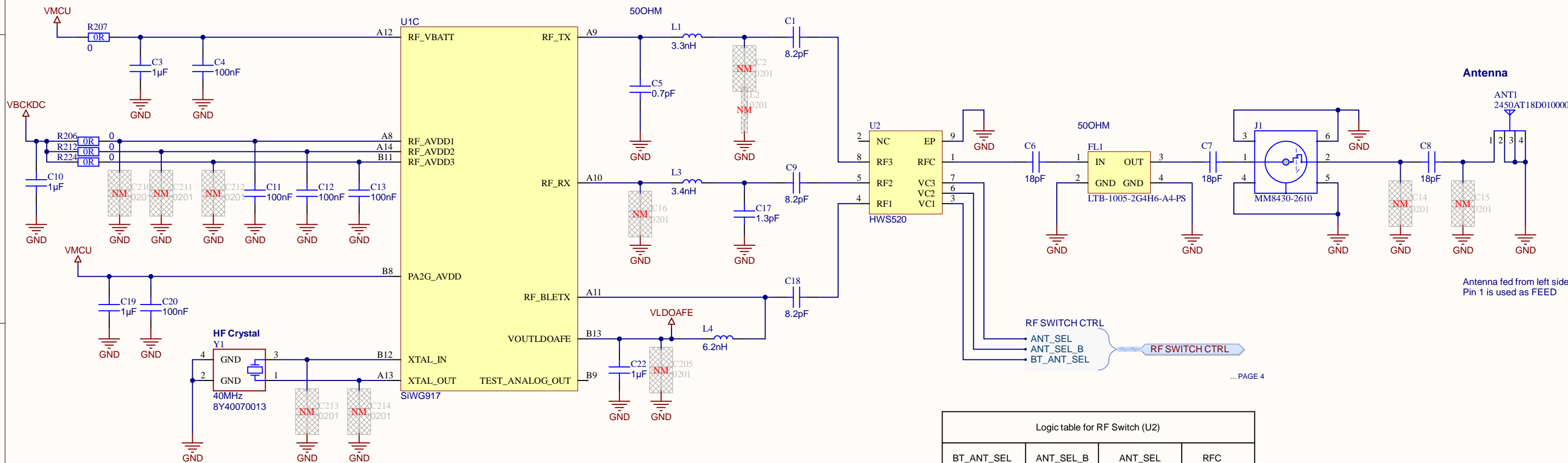
C

D

D

|   |                                 |   |                   |
|---|---------------------------------|---|-------------------|
|  |                                 | Board name<br><b>SiWG917 Wi-Fi and BLE SoC Radio Board<br/>Int. Flash and Ext.RF switch</b> |                   |
| Designed<br>MSV   | Approved<br>RGU                 | Page Title<br>Table of Contents and Revision History  |                   |
| Size<br>A3  | Sheet Modified Date<br>5/3/2024 | Board number<br>BRD4338A  | Revision<br>A14-- |
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# SiWG917 RF Frontend ( External RF Switch + Band Pass Filter)



**Antenna**  
 ANTI 2450AT18D0100001  
 Antenna fed from left side  
 Pin 1 is used as FEED

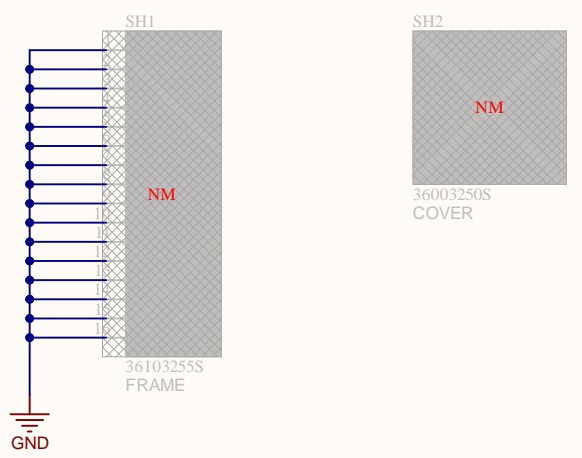
RF SWITCH CTRL  
 ANT\_SEL  
 ANT\_SEL\_B  
 BT\_ANT\_SEL

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Logic table for RF Switch (U2)

| BT_ANT_SEL | ANT_SEL_B | ANT_SEL | RFC     |
|------------|-----------|---------|---------|
| 1          | 0         | 0       | RF_BTTX |
| 0          | 1         | 0       | RF_RX   |
| 0          | 0         | 1       | RF_TX   |

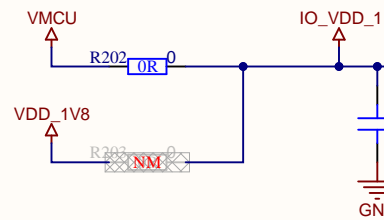
## EMI Shield



|   |                                 |   |                 |                           |
|---|---------------------------------|---|-----------------|---------------------------|
|   |                                 | Board name<br><b>SiWG917 Wi-Fi and BLE SoC Radio Board</b><br><b>Int. Flash and Ext.RF switch</b> |                 |                           |
|   |                                 | Designed<br>MSV   | Approved<br>RGU | Page Title<br>RF Frontend |
| Size<br>A3  | Sheet Modified Date<br>5/3/2024 | Board number<br>BRD4338A  |                 | Revision<br>A14--         |
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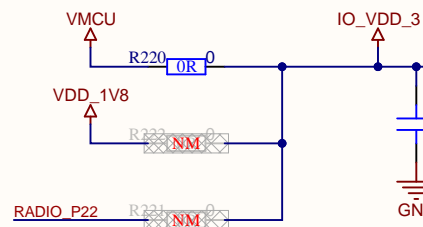


### IO\_VDD\_1 Configuration



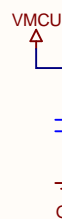
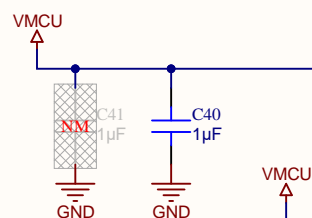
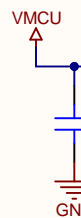
NOTE: remove R204 if IO\_VDD\_1 and IO\_VDD\_3 are selected from different sources

### IO\_VDD\_3 Configuration

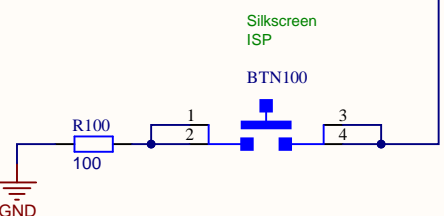


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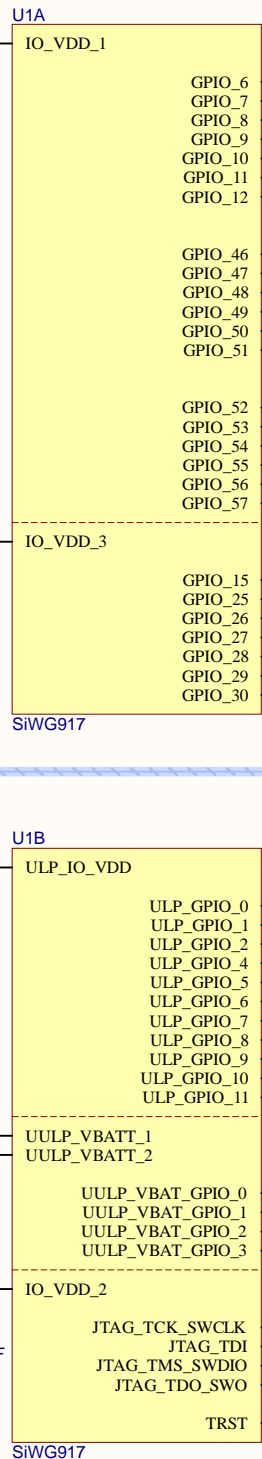
### RF SWITCH CTRL



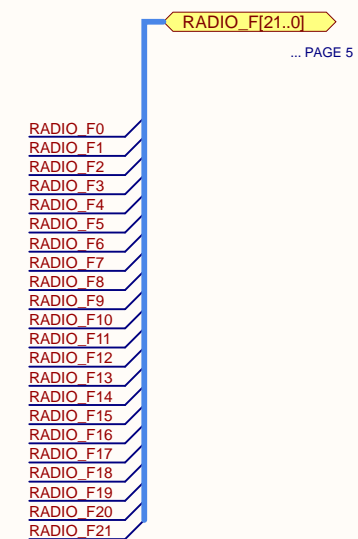
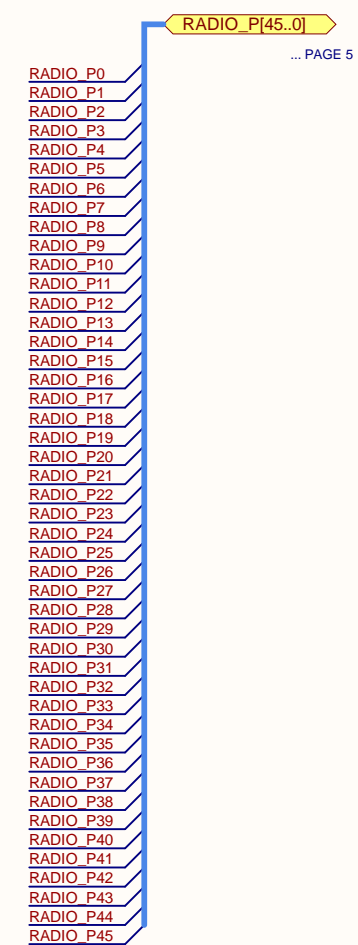
### ISP Mode Button



## SiWG917 Pin Assignment

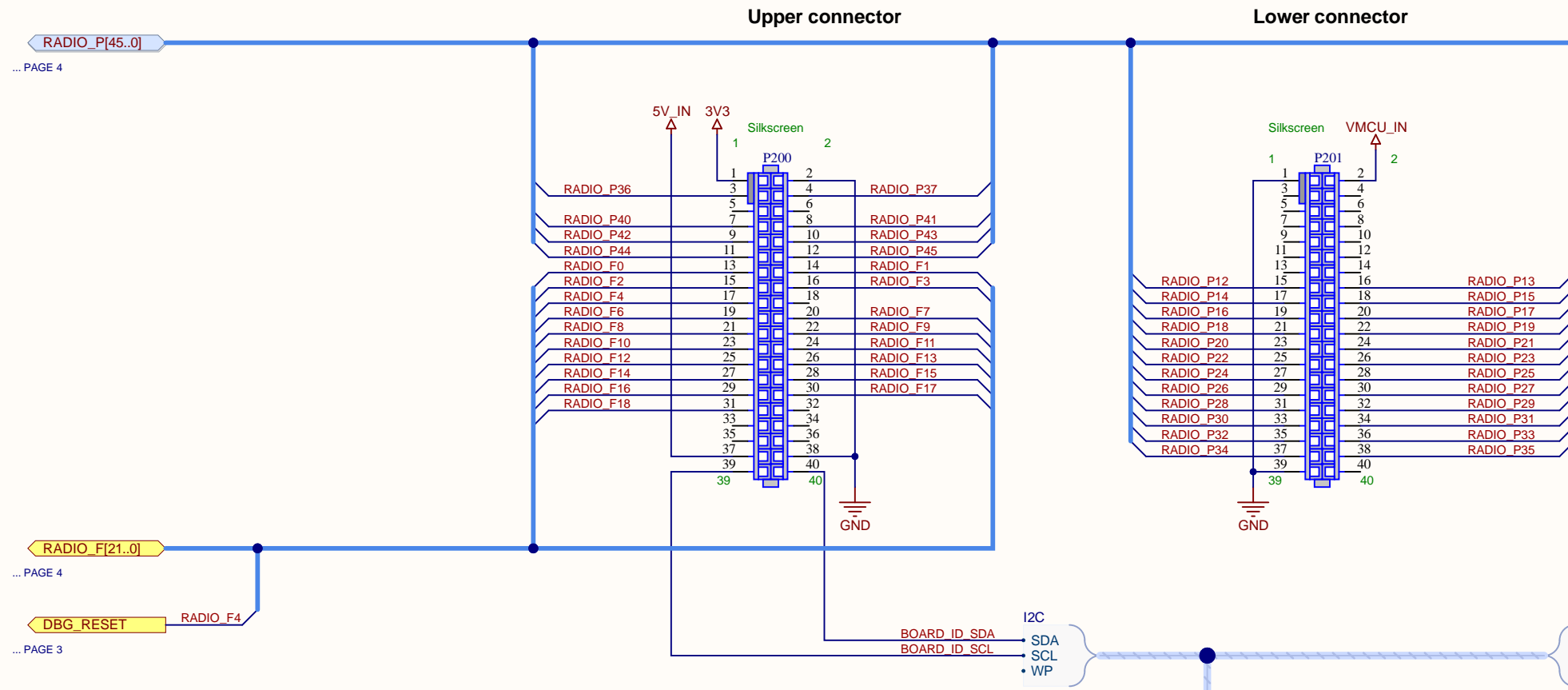


| SiWG917 Peripheral | Mainboard Peripheral | Connection              | Breakout Header Connection | EXP Header Connection |
|--------------------|----------------------|-------------------------|----------------------------|-----------------------|
| GPIO_6             | B20                  |                         | RADIO_P19                  |                       |
| GPIO_7             | B19                  |                         | RADIO_P20                  |                       |
| GPIO_8             | A20                  | TASS_UART1_RX           | VCOM_RX                    | RADIO_F8              |
| GPIO_9             | A21                  | TASS_UART1_TX           | VCOM_TX                    | RADIO_F9              |
| GPIO_10            | B3                   | GPIO                    | UIF_LED1                   | RADIO_F11             |
| GPIO_11            | B4                   | GPIO                    | UIF_BUTTON1                | RADIO_F13             |
| GPIO_12            | A4                   | MCU_CLK_OUT             |                            | RADIO_P21             |
| GPIO_46            | A5                   | GPIO                    |                            | RADIO_P24             |
| GPIO_47            | A7                   | GPIO                    |                            | RADIO_P26             |
| GPIO_48            | B7                   | GPIO                    |                            | RADIO_P28             |
| GPIO_49            | B6                   | GPIO                    |                            | RADIO_P30             |
| GPIO_50            | A6                   | GPIO                    |                            | RADIO_P32             |
| GPIO_51            | B5                   | GPIO                    |                            | RADIO_P34             |
| GPIO_52            | A38                  |                         |                            | RADIO_P40             |
| GPIO_53            | B35                  | M4SS_TRACE_CLK          | ETM_TRACECLK               | RADIO_P41             |
| GPIO_54            | A39                  | M4SS_TRACE_D0           | ETM_TRACE0                 | RADIO_P42             |
| GPIO_55            | B36                  | M4SS_TRACE_D1           | ETM_TRACE1                 | RADIO_P43             |
| GPIO_56            | A40                  | M4SS_TRACE_D2           | ETM_TRACE2                 | RADIO_P44             |
| GPIO_57            | B37                  | M4SS_TRACE_D3           | ETM_TRACE3                 | RADIO_P45             |
| GPIO_15            | A41                  | M4SS_TRACE_CLKIN        |                            | RADIO_P23             |
| GPIO_25            | B40                  | SDIO_CLK                |                            | RADIO_P25             |
| GPIO_26            | A1                   | SDIO_CMD                |                            | RADIO_P27             |
| GPIO_27            | B39                  | SDIO_D0                 |                            | RADIO_P29             |
| GPIO_28            | A44                  | SDIO_D1                 |                            | RADIO_P31             |
| GPIO_29            | A43                  | SDIO_D2                 |                            | RADIO_P33             |
| GPIO_28            | A42                  | SDIO_D3                 |                            | RADIO_P35             |
| GPIO_30            | A42                  |                         | JOYSTICK                   | RADIO_P36             |
| ULP_GPIO_0         | A35                  | RF_SWITCH_CTRL          |                            |                       |
| ULP_GPIO_1         | B22                  | BT_ANT_SEL              |                            |                       |
| ULP_GPIO_2         | A37                  | ULP_SPI_DOUT            | DISP_SI                    | RADIO_P16             |
| ULP_GPIO_4         | B21                  | GPIO                    | UIF_LED0                   | RADIO_F10             |
| ULP_GPIO_5         | A19                  | ANT_SEL                 |                            |                       |
| ULP_GPIO_6         | A19                  | ANT_SEL_B               |                            |                       |
| ULP_GPIO_7         | A22                  | ULP_I2C_SDA             | SENSOR_SDA                 | EXP_HEADER16          |
| ULP_GPIO_8         | B18                  | ULP_I2C_SCL             | SENSOR_SCL                 | EXP_HEADER15          |
| ULP_GPIO_9         | A36                  | ULP_SPI_CLK             | DISP_SCLK                  | RADIO_P15             |
| ULP_GPIO_10        | A24                  | ULP_UART_RX             | VCOM_RX                    | RADIO_F7              |
| ULP_GPIO_11        | A23                  | ULP_SPI_CS0             | DISP_SCS                   | RADIO_P17             |
| UULP_VBAT_GPIO_0   | B10                  | GPIO                    | DISP_ENABLE                | RADIO_P14             |
| UULP_VBAT_GPIO_1   | B27                  | GPIO                    | SENSOR_ENABLE              | RADIO_P37             |
| UULP_VBAT_GPIO_2   | B24                  | GPIO                    | UIF_BUTTON0                | RADIO_F12             |
| UULP_VBAT_GPIO_3   | A25                  | GPIO                    | DISP_EXTCOMIN              | RADIO_P18             |
| JTAG_TCK_SWCLK     | A17                  | JTAG_TCK/SWCLK          | DBG_TCK/SWCLK              | RADIO_F1              |
| JTAG_TDI           | B16                  | JTAG_TDI                | DBG_TDI                    | RADIO_F3              |
| JTAG_TMS_SWDIO     | A16                  | JTAG_TMS/SWDIO          | DBG_TMS/SWDIO              | RADIO_F0              |
| JTAG_TDO_SWO       | B15                  | JTAG_TDO/SWO/ISP_ENABLE | DBG_TDO/SWO                | RADIO_F2              |
| TRST               | A15                  |                         |                            |                       |

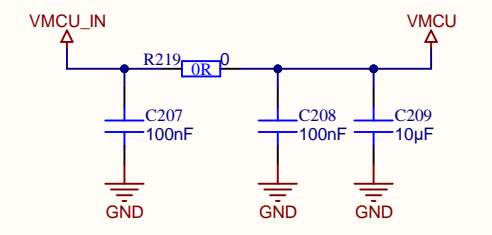


|   |                     |   |              |
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|   |                     | <b>SiWG917 Wi-Fi and BLE SoC Radio Board</b><br><b>Int. Flash and Ext.RF switch</b> |              |
| Designed  | Approved            | Page Title  |              |
| MSV   | RGU                 | Pin Assignment  |              |
| Size  | Sheet Modified Date | Board number  | Revision     |
| A3  | 5/3/2024            | BRD4338A  | A14--        |
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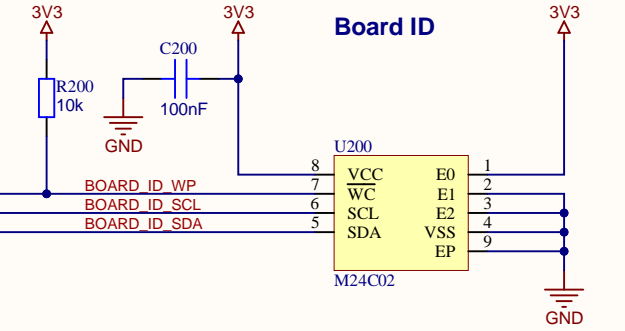
# Radio Board Socket



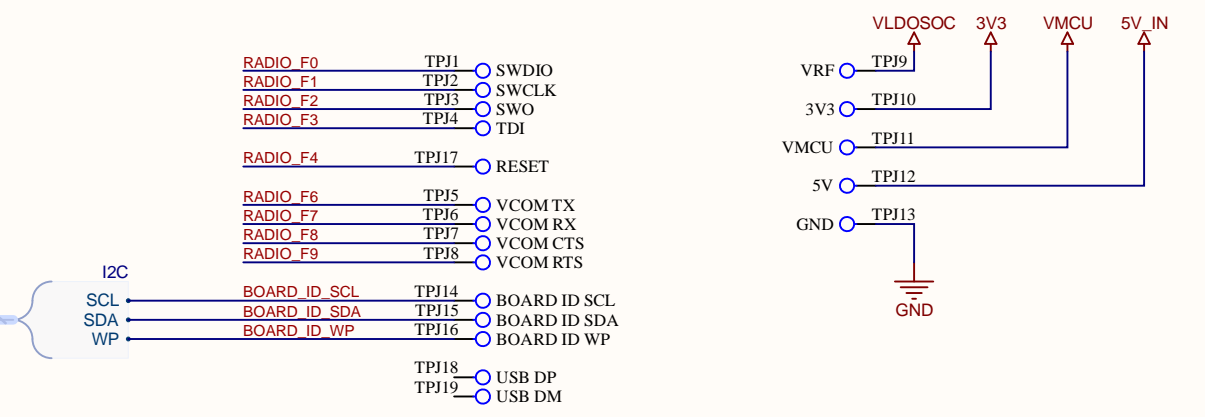
## Mainboard Power Decoupling



## Board ID



## Production Test Points



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|   |                                 |   |                   |
|---|---------------------------------|---|-------------------|
|   |                                 | Board name<br><b>SiWG917 Wi-Fi and BLE SoC Radio Board</b><br><b>Int. Flash and Ext.RF switch</b> |                   |
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