

# 5G-REDCAP EVB

# User Guide

**5G Module Series**

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The following safety precautions must be observed during all phases of operation, such as usage, service or repair of any terminal or mobile incorporating the module. Manufacturers of the terminal should notify users and operating personnel of the following safety information by incorporating these guidelines into all manuals of the product. Otherwise, Quectel assumes no liability for customers' failure to comply with these precautions.



Full attention must be paid to driving at all times in order to reduce the risk of an accident. Using a mobile while driving (even with a handsfree kit) causes distraction and can lead to an accident. Please comply with laws and regulations restricting the use of wireless devices while driving.



Switch off the terminal or mobile before boarding an aircraft. The operation of wireless appliances in an aircraft is forbidden to prevent interference with communication systems. If there is an Airplane Mode, it should be enabled prior to boarding an aircraft. Please consult the airline staff for more restrictions on the use of wireless devices on an aircraft.



Wireless devices may cause interference on sensitive medical equipment, so please be aware of the restrictions on the use of wireless devices when in hospitals, clinics or other healthcare facilities.



Terminals or mobiles operating over radio signal and cellular network cannot be guaranteed to connect in certain conditions, such as when the mobile bill is unpaid or the (U)SIM card is invalid. When emergency help is needed in such conditions, use emergency call if the device supports it. In order to make or receive a call, the terminal or mobile must be switched on in a service area with adequate cellular signal strength. In an emergency, the device with emergency call function cannot be used as the only contact method considering network connection cannot be guaranteed under all circumstances.



The terminal or mobile contains a transceiver. When it is ON, it receives and transmits radio frequency signals. RF interference can occur if it is used close to TV sets, radios, computers or other electric equipment.



In locations with explosive or potentially explosive atmospheres, obey all posted signs and turn off wireless devices such as mobile phone or other terminals. Areas with explosive or potentially explosive atmospheres include fuelling areas, below decks on boats, fuel or chemical transfer or storage facilities, and areas where the air contains chemicals or particles such as grain, dust or metal powders.

# About the Document

## Revision History

Version	Date	Author	Description
-	2024-01-04	Jada LIN	Creation of the document
1.0.0	2024-01-04	Jada LIN	Preliminary

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# 1 Introduction

This user guide describes the application details of 5G-REDCAP EVB (evaluation board), which is an assistant tool for you to develop applications and test basic functionalities of applicable modules.

## 1.1. Applicable Modules

For details about the applicable modules of this EVB, see **document [1]**.

## 1.2. Special Mark

**Table 1: Special Mark**

Mark	Definition
*	Unless otherwise specified, when an asterisk (*) is used after a function, feature, interface, pin name, AT command, argument, and so on, it indicates that the function, feature, interface, pin, AT command, argument, and so on, is under development and currently not supported; and the asterisk (*) after a model indicates that the sample of the model is currently unavailable.

# 2 Product Overview

## 2.1. Top and Bottom Views

The size of 5G-REDCAP EVB is 168 mm × 146 mm, and the top and bottom views are shown as below:

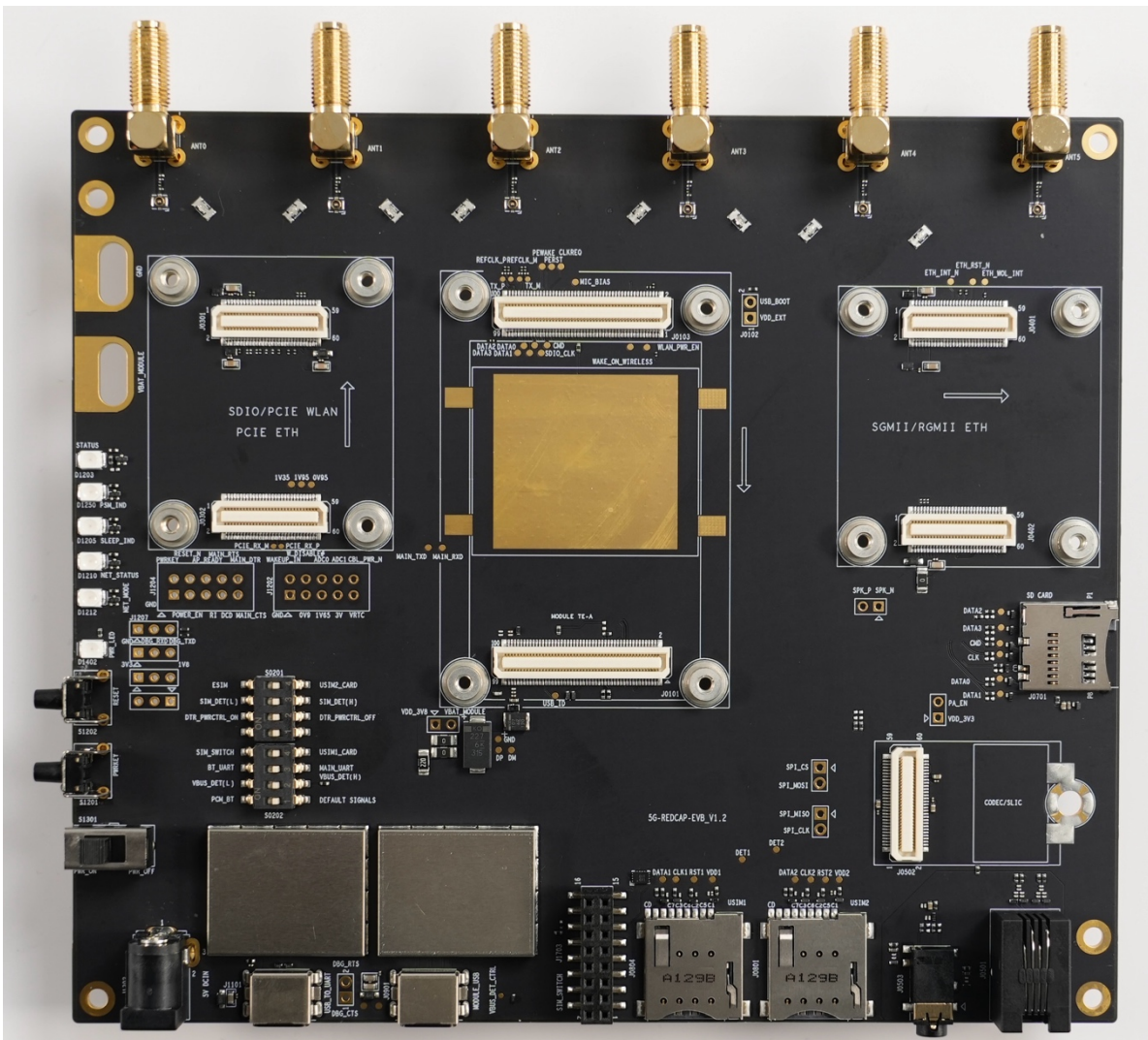


Figure 1: Top View

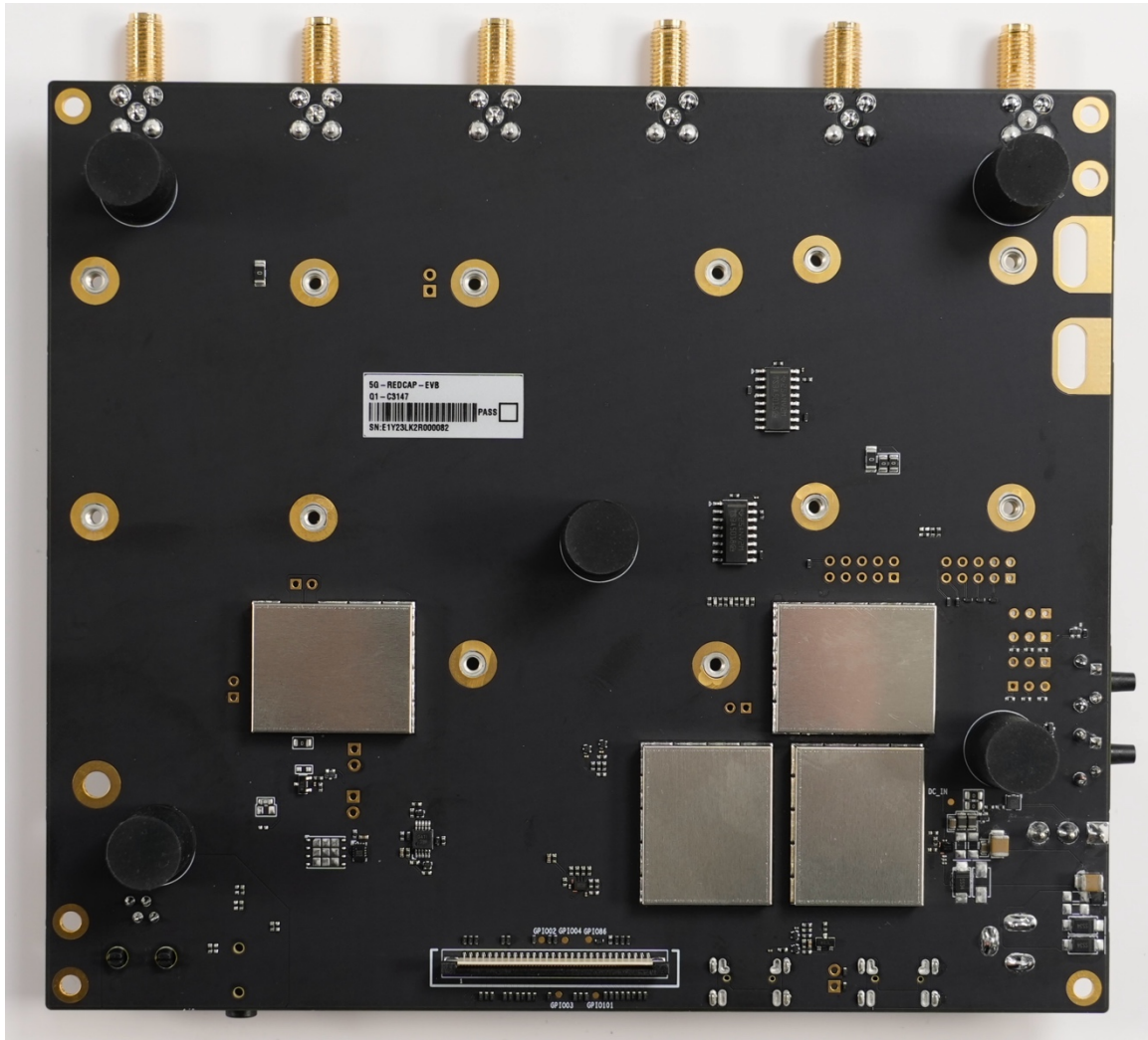


Figure 2: Bottom View

## 2.2. Component Placement

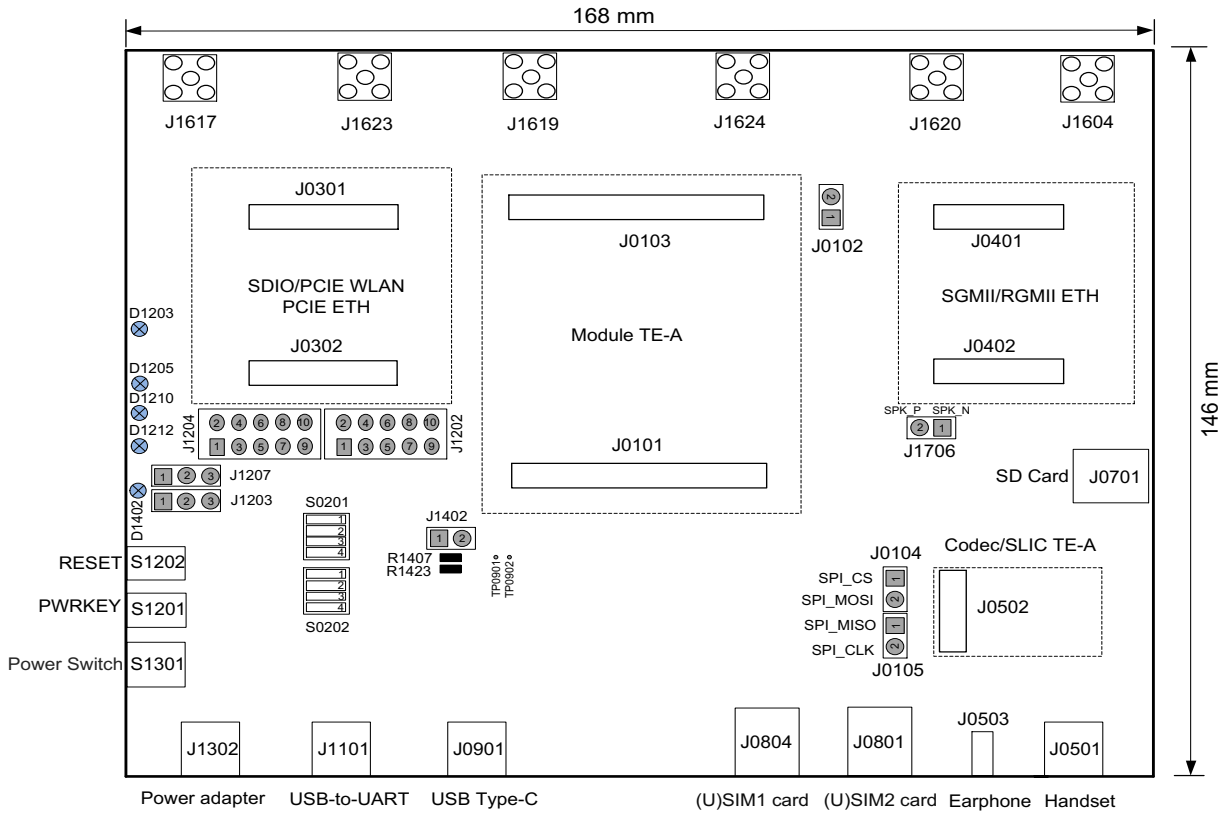
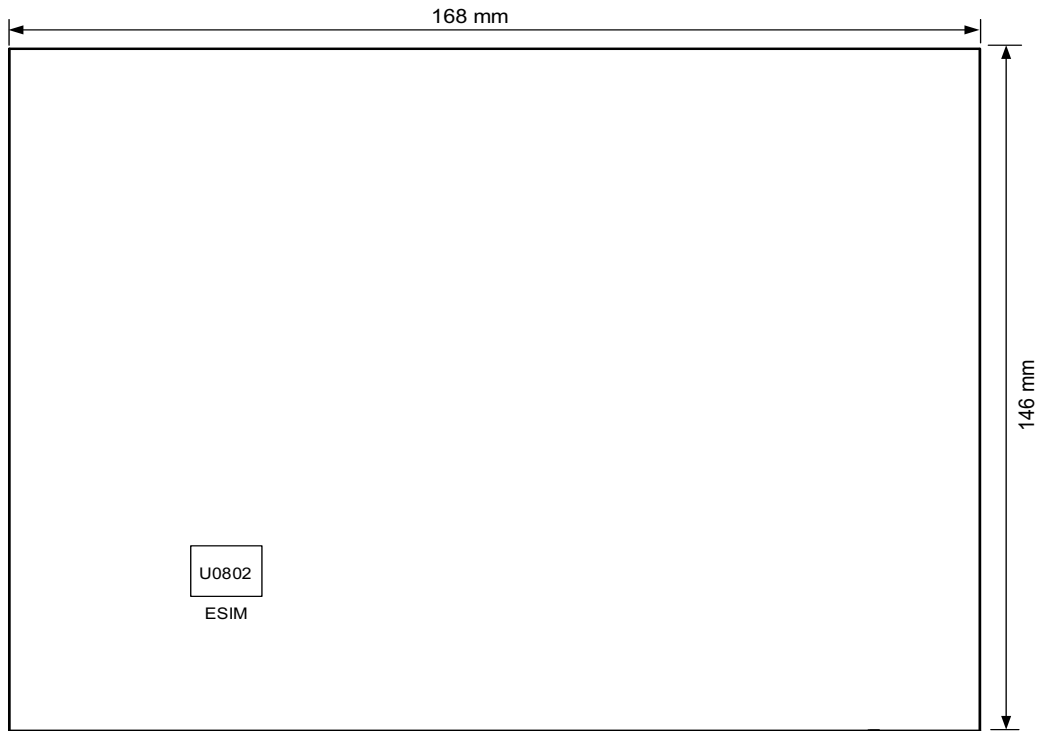


Figure 3: Top View for Component Placement



**Figure 4: Bottom View for Component Placement**

**Table 2: Components & Functions**

Component	RefDes.	Description	Comment
Power Supply	J1302	Power jack on the EVB	DC power supply: 5–12 V Typical supply voltage: +5 V/ 3 A
	J0901	USB Type-C interface	Typical supply voltage: +5 V
Power Switch	S1301	VBAT ON/OFF control	Switch
PWRKEY	S1201	<ul style="list-style-type: none"> <li>● Power key (push button)</li> <li>● Turn ON/OFF the module</li> </ul>	Button
RESET	S1202	<ul style="list-style-type: none"> <li>● Reset button (push button)</li> <li>● Used to reset the module</li> </ul>	Button
Switches	S0201, S0202	Function control	Switch
USB Interface	J0901	USB Type-C interface	Used for USB 3.0 and USB 2.0 communication
USB-to-UART	J1101	USB-to-UART interface	<b>Main UART:</b> <ul style="list-style-type: none"> <li>● For data communication</li> <li>● Default baud rate:</li> </ul>

			115200 bps <b>Debug UART:</b> <ul style="list-style-type: none"> <li>● For debugging</li> <li>● Default baud rate: 115200 bps</li> </ul>
Audio Interfaces	J0502	Codec board TE-A connector	<ul style="list-style-type: none"> <li>● 1 digital audio codec board interface: Supports TLV320AIC3104 TE-A (default) codec board</li> <li>● 3 analog audio interfaces: Used for loudspeaker and earphone</li> </ul>
	J1706	Designed for loudspeakers	
	J0503	Audio jack for earphone	
	J0501	Designed for headset	
(U)SIM Card Interfaces	J0804	(U)SIM1 card connector	<ul style="list-style-type: none"> <li>● Support (U)SIM card insertion detection</li> <li>● Support dual (U)SIM card: 1.8 V and 3 V</li> </ul>
	J0801	(U)SIM2 card connector	
SD Card Interface	J0701	SD card connector	
Status Indicators	D1402	Power supply ON/OFF indicator	5 LEDs available for signal indication
	D1203	Module operation status indicator, indicating whether the module is turned on	
	D1212	Network mode indicator, indicating NET_MODE status of the module	
	D1210	Network status indicator, indicating NET_STATUS status of the module	
	D1205	Sleep status indicator, indicating SLEEP status of the module	
SLIC TE-A Interface	J0502	SLIC board TE-A connector	Supports SI32185 TE-A (default) SLIC board
Module TE-A	J0101, J0103	Module TE-A connector	Used for connecting applicable modules
PHY TE-A	J0301, J0302, J0401, J0402	Connect PHY TE-A	<b>J0301/J0302:</b> <ul style="list-style-type: none"> <li>● Supports PCIe PHY</li> </ul> <b>J0401/J0402:</b> <ul style="list-style-type: none"> <li>● Supports SGMII/RGMII interface PHY</li> <li>● Supports SGMII PHY QEP8111 by default</li> </ul>
Wi-Fi TE-A	J0301, J0302	Connect Wi-Fi TE-A	<ul style="list-style-type: none"> <li>● Supports PCIe and SDIO interfaces' Wi-Fi</li> <li>● Supports PCIe Wi-Fi</li> </ul>

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QCA6174 by default

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Antenna Interfaces	J1604, J1617, J1619, J1620, J1623, J1624	6 antenna connectors
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Test Points	J0102, J0104, J0105, J1202, J1203, J1204, J1207	7 test points
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# 3 Application Interfaces

This chapter describes the hardware interfaces of the 5G-REDCAP EVB, as listed below:

- Power supply
- Module TE-A interface
- USB interface
- USB-to-UART interfaces
- Audio interfaces
- (U)SIM card interface
- SD card interface
- SLIC TE-A interfaces
- Wi-Fi TE-A interfaces
- PHY TE-A interfaces
- Antenna Interfaces
- Switches and Buttons
- Status Indicators
- Test Points

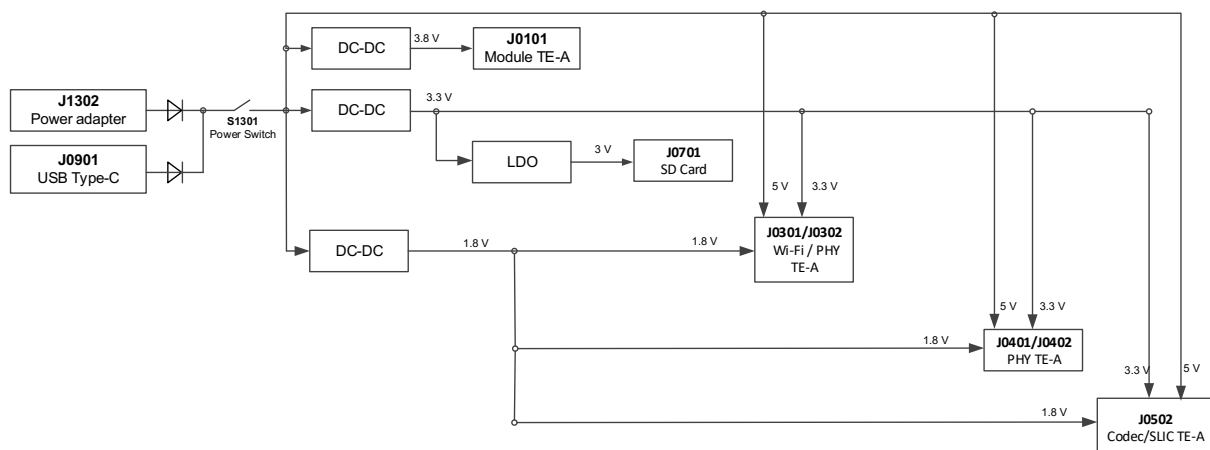
### 3.1. Power Supply

The EVB can be powered by an external power adapter through the 5 V power jack (J1302) or USB Type-C receptacle (J0901) on the EVB.

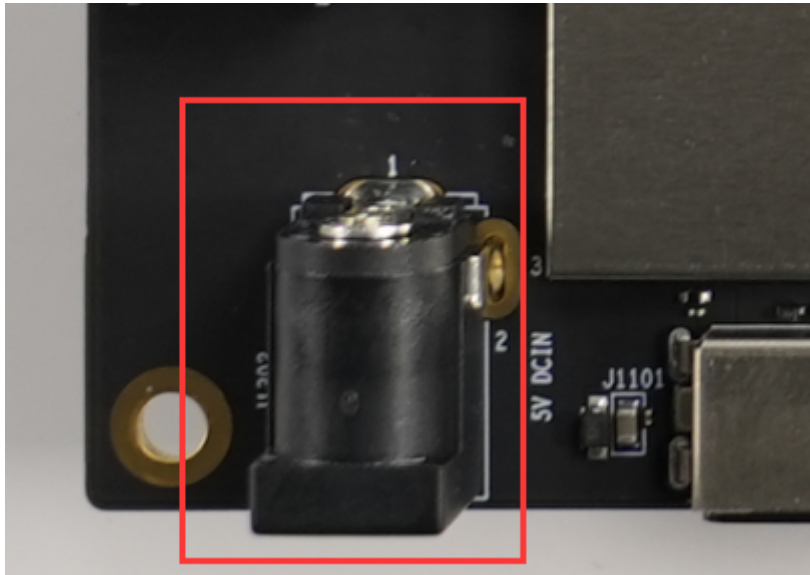
**Table 3: Description of Power Supply**

RefDes.	Description
J1302	Power jack on the EVB
J0901	USB Type-C interface

The following figures show the simplified power supply block diagram of the EVB.

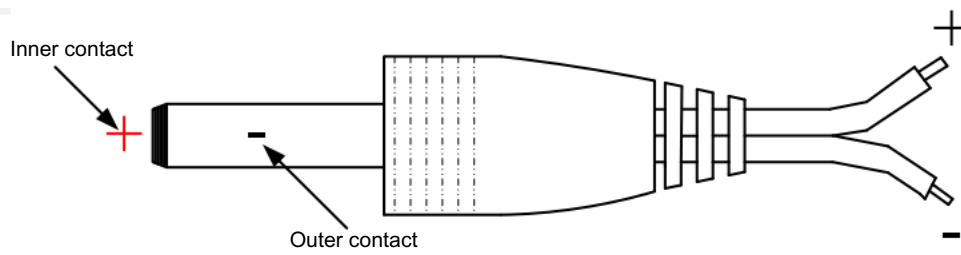


**Figure 5: EVB Power Supply Block Diagram**



**Figure 6: EVB Power Supply Interface**

If the power jack is used for power supply, the power plug design of the adapter is shown as below.



**Figure 7: Power Plug Design**

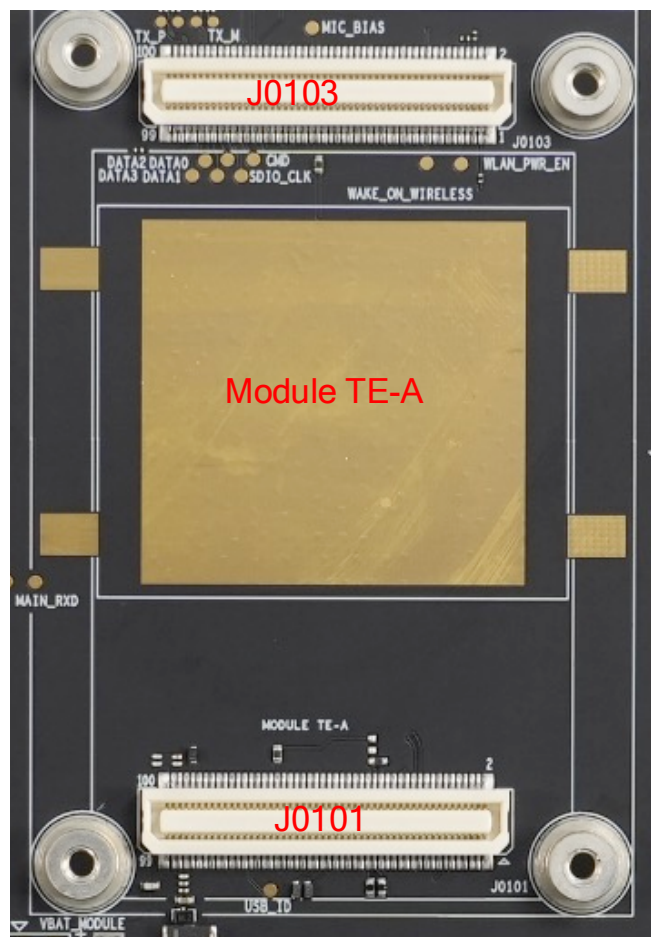
### 3.2. Module TE-A Interface

Module TE-A interface is designed to accommodate the TE-A of applicable modules. The TE-A is connected to the EVB via BTB connectors. The developer will be able to test the functionalities of the module easily (insert as indicated by the arrow to prevent reverse insertion).

**Table 4: Description of Module TE-A Interface**

RefDes.	Description
J0101	Module TE-A connector
J0103	

The following figure shows the connection between the module TE-A and the EVB.



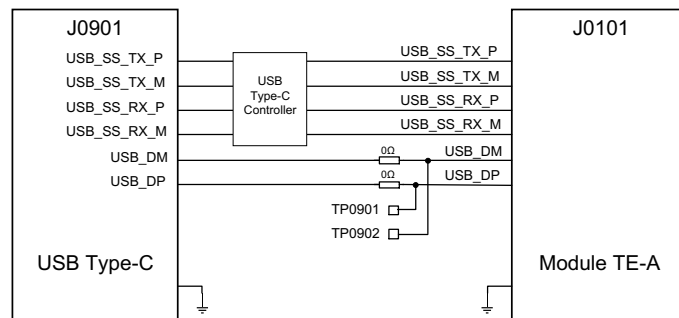
**Figure 8: Connection Between the Module TE-A and EVB**

### 3.3. USB Interface

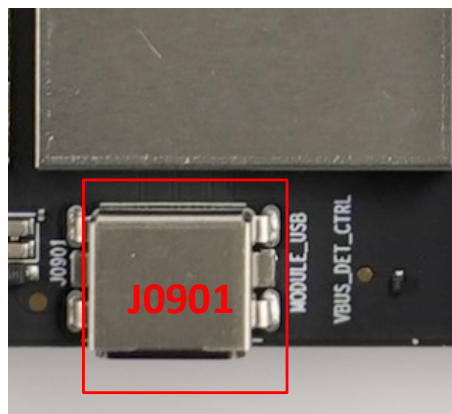
The EVB provides a USB 3.0/2.0 Type-C interface and supports high-speed (480 Mbps) and full-speed (12 Mbps) for connection with a host device, as shown in **Figure 9** and **Figure 10**. This USB interface is used for AT command communication, data transmission, GNSS NMEA sentences output, software debug and firmware upgrade and voice over USB\*.

**Table 5: Description of USB Interface**

RefDes.	Description
J0901	USB Type-C interface



**Figure 9: Connection Between Module and USB Type-C Interface**



**USB Type-C**

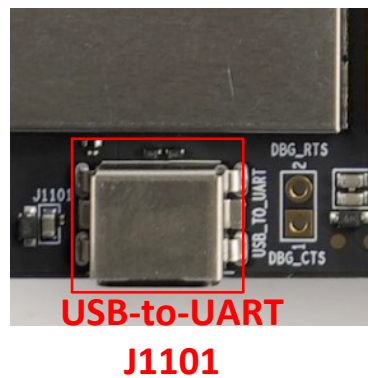
**Figure 10: USB Type-C Interface**

### 3.4. USB-to-UART Interface

The EVB provides a USB-to-UART interface. This interface is used as debug UART for linux console and log output. It is also used as main UART for data transmission and AT command communication.

**Table 6: Description of USB-to-UART Interface**

RefDes.	Description
J1101	USB-to-UART interface



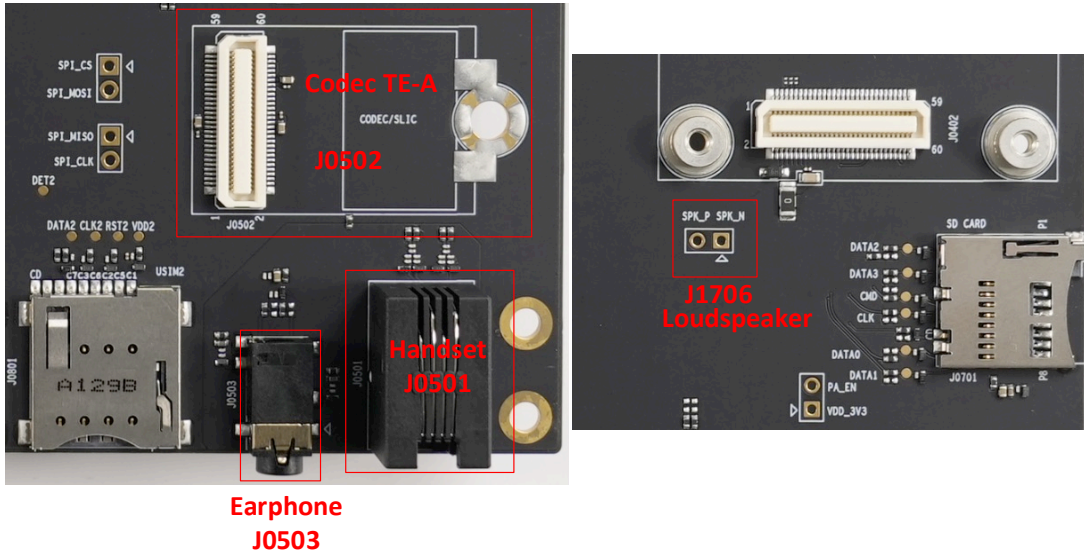
**Figure 11: USB-to-UART Interface**

#### 3.4.1. Audio Interfaces

The EVB provides one digital audio codec interface (PCM) and three analog audio interfaces.

**Table 7: Description of Audio Interface**

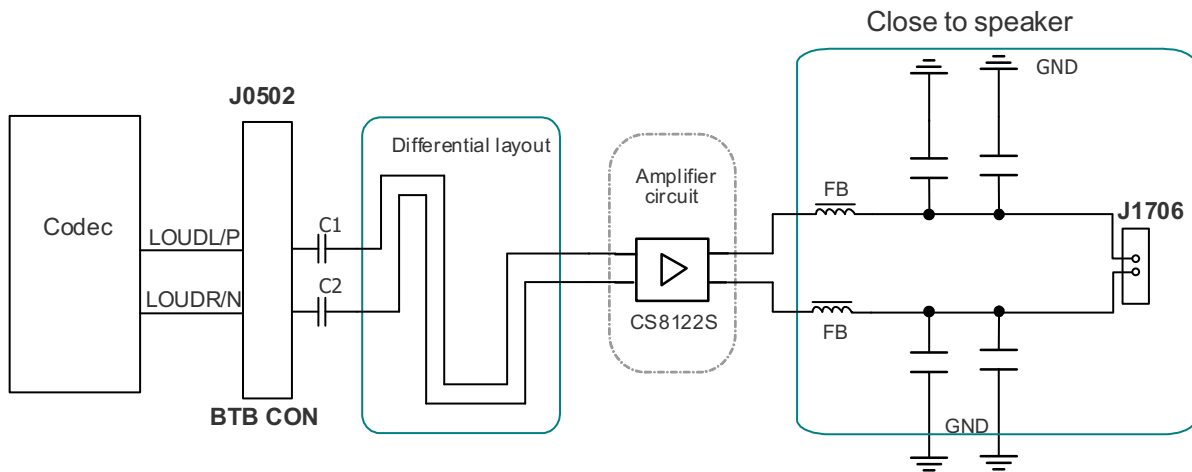
RefDes.	Description
J0502	Codec board TE-A connector
J0501	Designed for handset
J0503	Audio jack for earphone
J1706	Designed for loudspeakers



**Figure 12: Audio Interfaces of the EVB**

**3.4.1.1. Loudspeaker Application**

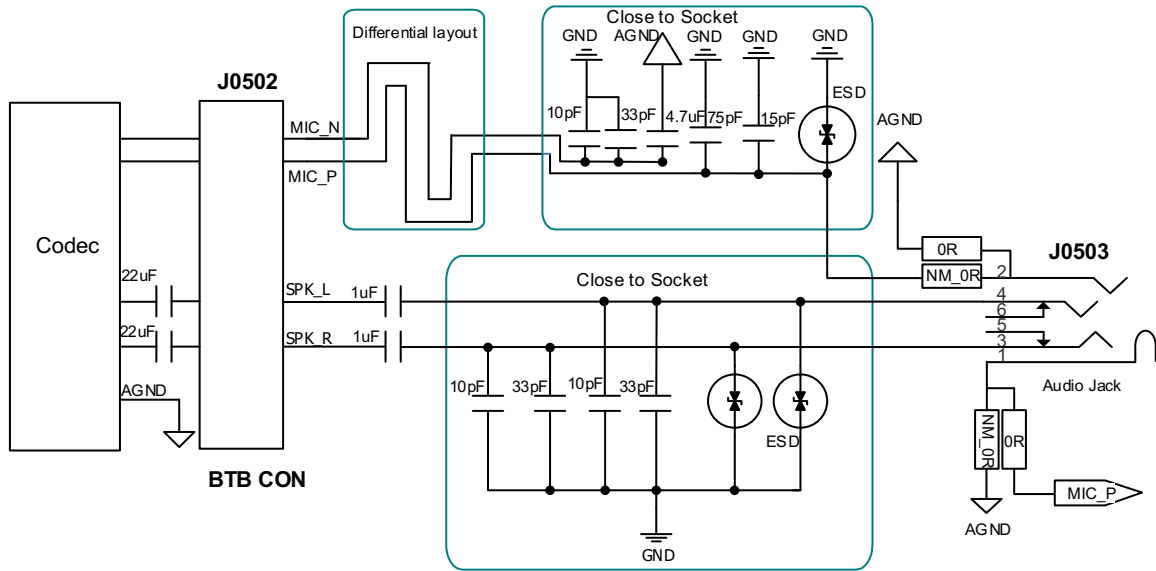
Audio interface J1706 is designed for loudspeakers and the following figure shows a reference design of loudspeaker with an external audio amplifier.



**Figure 13: Reference Circuit Design for Loudspeaker Application**

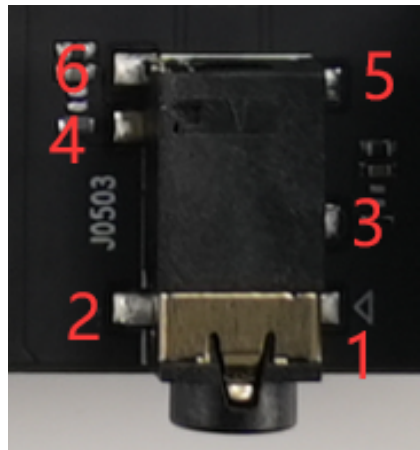
**3.4.1.2. Earphone Application**

Audio interface is designed for earphone. A reference circuit design is shown by the following figure.



**Figure 14: Reference Circuit Design for Earphone Application**

The figure and table below illustrates the pin assignment and pin definition of earphone connector.



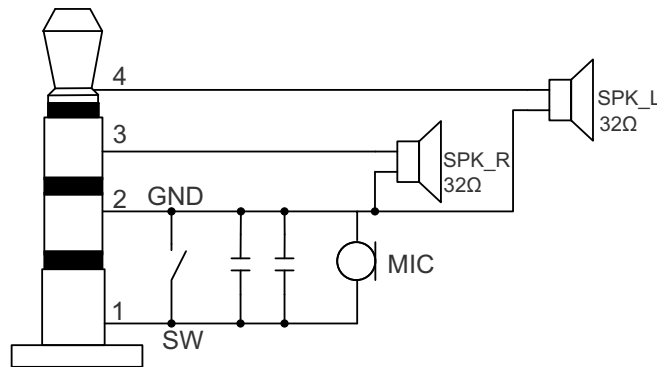
**Figure 15: Pin Assignment of J0503**



**Table 8: Pin Definition of J0503**

Pin No.	Pin Name	Description
1	MIC	Microphone input
2	AGND	Dedicated GND for audio
3	SPK_R	Right channel of stereo audio output
4	SPK_L	Left channel of stereo audio output
5, 6	NC	NC

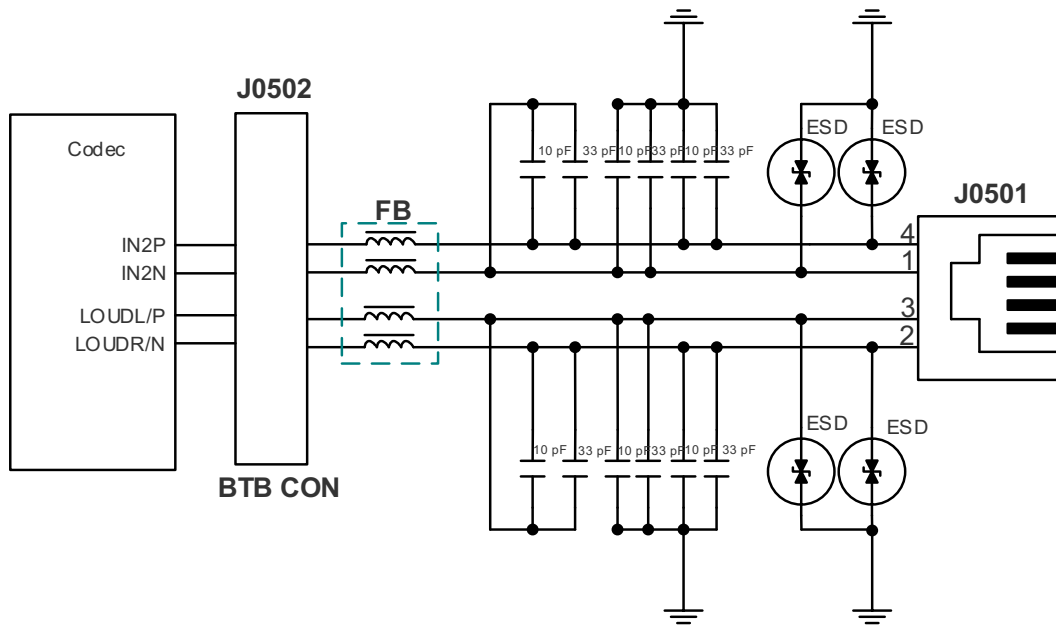
The following figure shows a schematic of audio plug which suits the audio jack on the EVB.



**Figure 16: Schematic of Audio Plug**

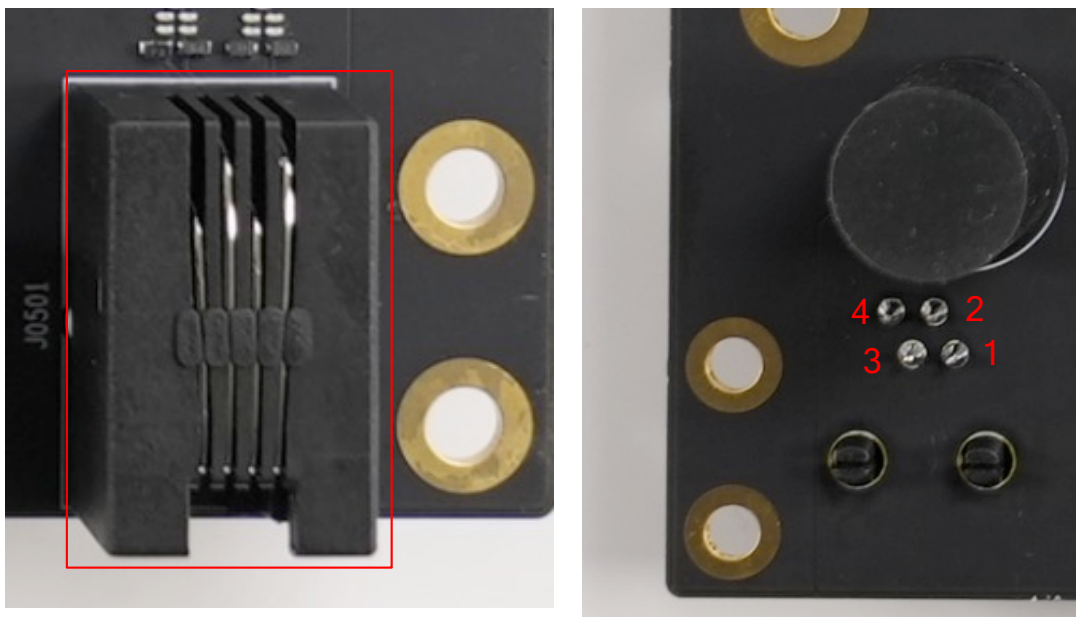
**3.4.1.3. Handset Application**

Audio interface J0501 is designed for handsets. A reference circuit design for handset interfaces J0501 is shown below.



**Figure 17: Reference Circuit Design for Handset Interface J0501**

The figure and table below illustrate the pin assignment and pin definition of handset interface J0501.



**Figure 18: Pin Assignments of J0501**

**Table 9: Pin Definition of J0501**

Pin No.	Pin Name	Function
1	MICN	Negative microphone input
2	SPKN	Negative loud speaker output
3	SPKP	Positive loud speaker output
4	MICP	Positive microphone input

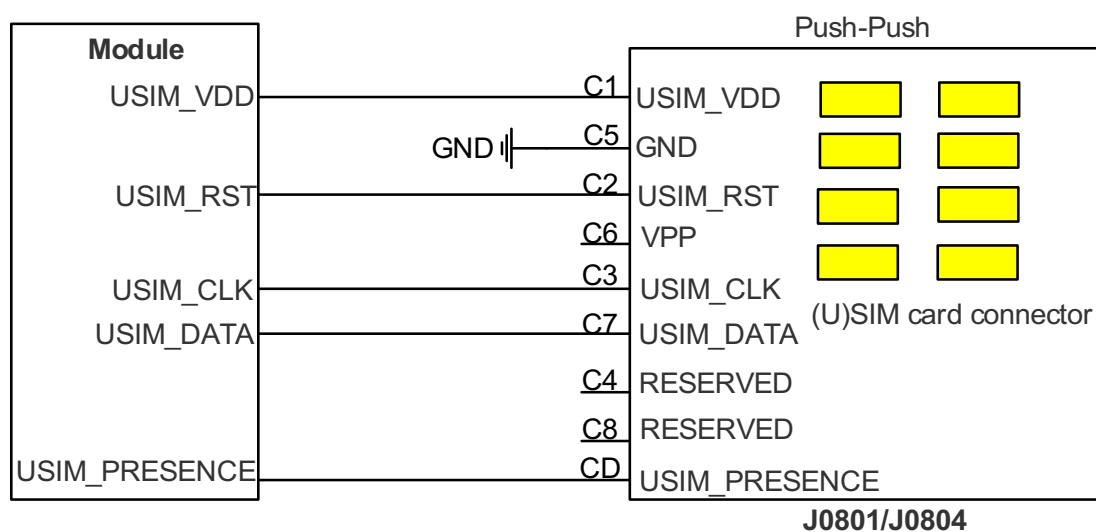
### 3.5. (U)SIM Card Interfaces

The EVB has two 8-pin push-push type (U)SIM card (1.8/3 V) interfaces which support 1.8/3 V (U)SIM card.

**Table 10: Description of (U)SIM Card Interfaces**

RefDes.	Description
J0804	(U)SIM1 card connector
J0801	(U)SIM2 card connector

The following figure shows a simplified connector schematic for these connectors.



**Figure 19: Simplified Connector Schematic for (U)SIM Card Connectors**

The figure and table below illustrate the pin assignment and definition of (U)SIM card connector J0804. J0801 is similar to J0804.



**Figure 20: Pin Assignment of (U)SIM Card Connector J0804**

**Table 11: Pin Definition of J0801**

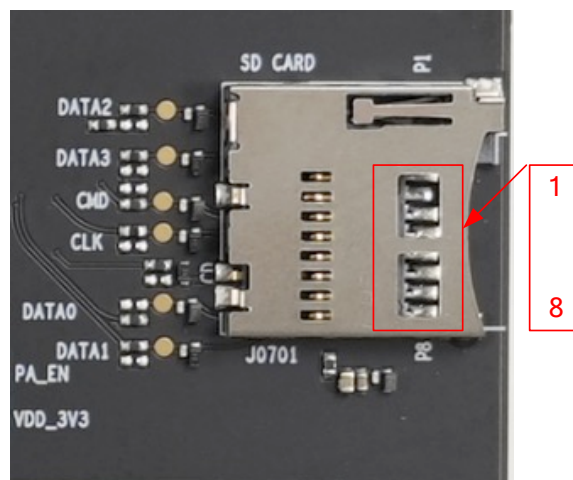
Pin No.	Pin Name	I/O	Description
C1	USIM_VDD	PO	U(SIM) card power supply, provided by module
C2	USIM_RST	DO	U(SIM) card reset
C3	USIM_CLK	DO	U(SIM) card clock
C4	RESERVED	-	NC
C5	GND	-	Ground
C6	VPP	-	NC
C7	USIM_DATA	DIO	Data line, bi-directional
C8	RESERVED	-	NC
CD	USIM_PRESENCE	DI	U(SIM) card insertion detection

### 3.6. SD Card Interface

The EVB provides a SD card interface, which can be used for connecting SD card.

**Table 12: Description of SD Card Interface**

RefDes.	Description
J0701	SD card connector



**Figure 21: Pin Assignment of SD Card Interface of J0701**

**Table 13: Pin Assignment of J0701**

J0701	Signal Name	I/O	Description
1	DATA2	DIO	Data line 2
2	CD/DATA3	DIO	Card detect/data line 3
3	CMD	DIO	Command/response
4	VDD	PO	Supply voltage
5	CLK		Clock
6	VSS	GND	Ground
7	DATA0	DIO	Data line 0
8	DATA1	DIO	Data line 1

### 3.7. SLIC TE-A Interface

The EVB provides one SLIC TE-A interface.

**Table 14: Description of SLIC TE-A Interface**

RefDes.	Description
J0502	SLIC board TE-A connector



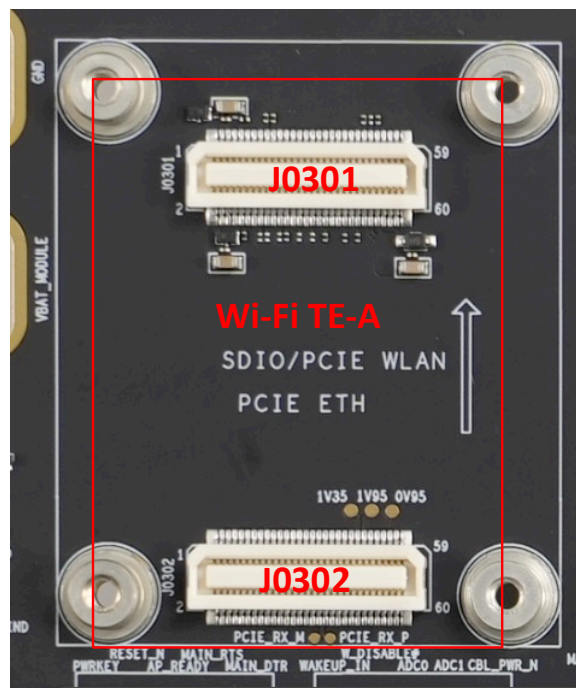
**Figure 22: SLIC TE-A Interface of the EVB**

### 3.8. Wi-Fi TE-A Interfaces

The Wi-Fi TE-A interfaces are designed to accommodate the Wi-Fi. The Wi-Fi TE-A interfaces support SDIO or PCIe interface, and the QCA6174 TE-A (PCIe interface) is chosen by default. The proper TE-A is connected to the EVB via BTB connectors. The interfaces allow you to test the Wi-Fi function of the module or to develop applications with Wi-Fi function easily.

**Table 15: Description of Wi-Fi TE-A Interfaces**

RefDes.	Description
J0301	Wi-Fi TE-A connectors
J0302	



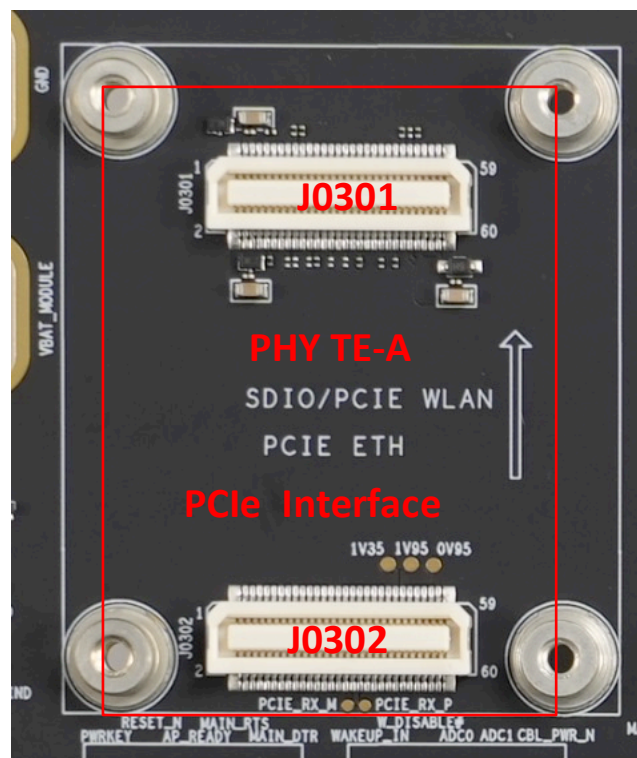
**Figure 23: Connection Between Wi-Fi TE-A and EVB**

### 3.9. PHY TE-A Interfaces

The PHY TE-A interfaces are designed to accommodate the PHY. The PHY TE-A interfaces support PCIe or SGMII/RGMII interface, and QEP8111 TE-A (SGMII interface) is chosen by default. The proper TE-A is connected to the EVB via BTB connectors. The interface allows you to test the PHY function of the module or to develop applications with PHY function easily.

**Table 16: Description of PHY TE-A Interfaces**

RefDes.	Description
J0301	PHY TE-A connectors (PCIe interface)
J0302	
J0401	PHY TE-A connectors (SGMII/RGMII interface)
J0402	



**Figure 24: Connection Between PHY TE-A (PCIe Interface) and EVB**



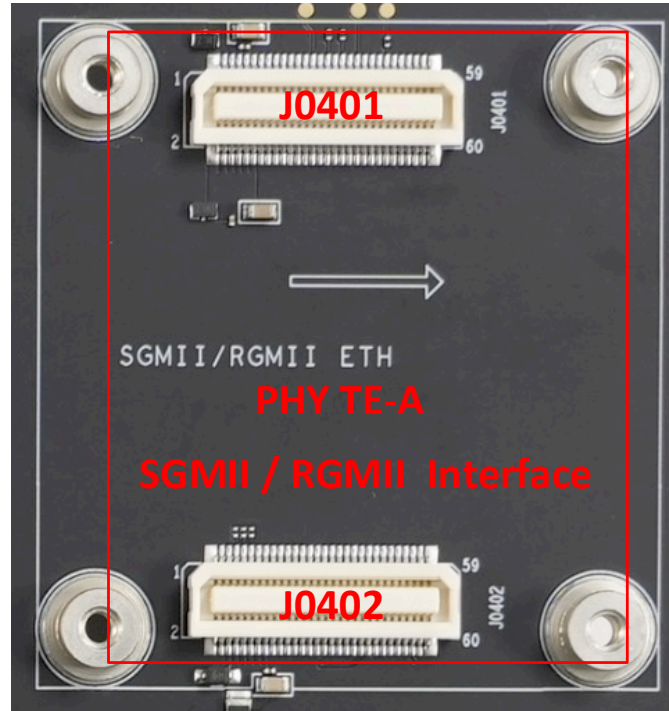


Figure 25: Connection Between PHY TE-A (SGMII/RGMII Interface) and EVB

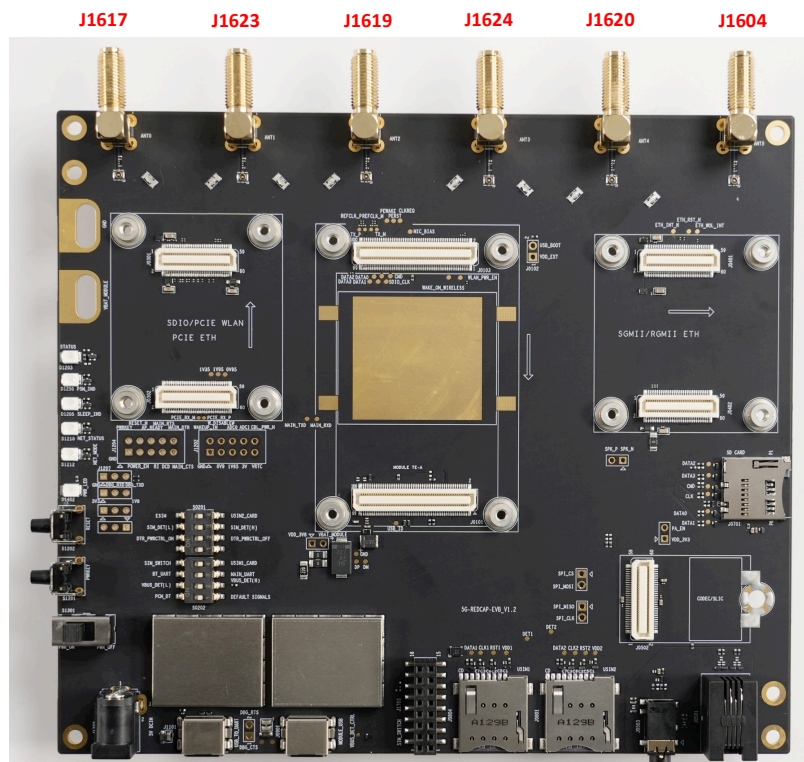
### 3.10. Antenna Interfaces

The EVB includes six antenna interfaces:

**Table 17: Description of Antenna Interfaces**

RefDes.	Description
J1604	Antenna connectors
J1617	
J1619	
J1620	
J1623	
J1624	

The following figure shows the assembly of these antenna interfaces.



**Figure 26: Antenna Interfaces**

### 3.11. Switches and Buttons

The EVB includes three switches and two buttons, as shown in the following table and figures.

**Table 18: Description of Buttons**

RefDes		Description
S1301	Power Switch	VBAT ON/OFF control
S1201	PWRKEY	<ul style="list-style-type: none"> <li>● Power key (push button)</li> <li>● Used to turn ON/OFF the module</li> </ul>
S1202	RESET	<ul style="list-style-type: none"> <li>● Reset button (push button)</li> <li>● Used to reset the module</li> </ul>
S0201.1	NA	
	NA	
S0201.2	DTR_PWRCTRL_ON	DTR control module power
	DTR_PWRCTRL_OFF	DTR does not control module power (default)
S0201.3	SIM_DET(L)	The module supports (U)SIM card hot-plug via the (U)SIM card hot-plug detect pins (USIM1_DET and USIM2_DET). (U)SIM card is detected by USIM_DET interrupt. (U)SIM card insertion is detected by low level.
	SIM_DET(H)	(U)SIM card insertion is detected by high level.(default)
S0201.4	ESIM	eSIM
	USIM2_CARD	USIM2 CARD (default)
S0202.1	PCM_BT	PCM for Bluetooth
	DEFAULT SIGNALS	Default signals (default)
S0202.2	VBUS_DET(L)	Disconnect USB
	VBUS_DET(H)	Connect USB (default)
S0202.3	BT_UART	UART for Bluetooth
	MAIN_UART	Main UART of module (default)
S0202.4	SIM_SWITCH	USIM1 connecter
	USIM1_CARD	USIM1 CARD (default)

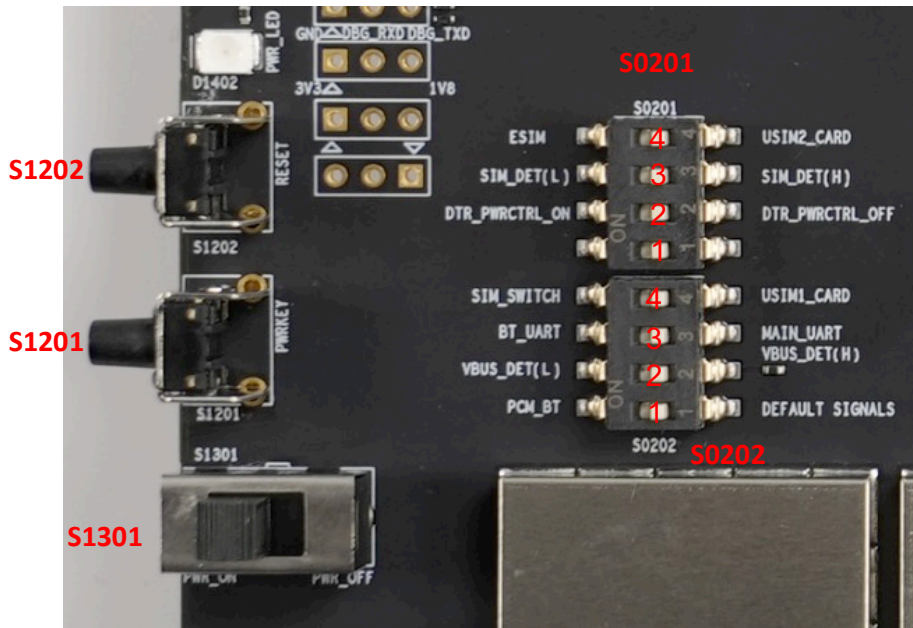


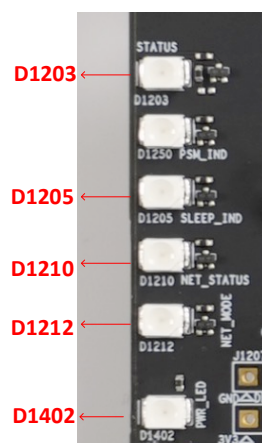
Figure 27: Switches and Buttons

### 3.12. Status Indicators

There are five status indication LEDs on the EVB. The following figure shows the positions of these LED indicators.

**Table 19: Description of Status Indication LEDs**

RefDes.	Description
D1402	Indicates whether the power supply for module is ready. <ul style="list-style-type: none"> <li>● ON: VBAT ON</li> <li>● OFF: VBAT OFF</li> </ul>
D1203	Indicates the operation status of the module. <ul style="list-style-type: none"> <li>● ON: the module is turned ON</li> <li>● OFF: the module is turned OFF</li> </ul>
D1212	Indicates the module's network registration mode. <ul style="list-style-type: none"> <li>● ON: registered in LTE/5G NR network</li> <li>● OFF: others</li> </ul>
D1210	Indicates the module's network activity status. <ul style="list-style-type: none"> <li>● Flicker slowly (200 ms High/1800 ms Low): network searching</li> <li>● Flicker slowly (1800 ms High/200 ms Low): Idle</li> <li>● Flicker quickly (125 ms High/125 ms Low): data transmission is ongoing</li> <li>● ON: voice calling</li> </ul>
D1205	Indicates the module's SLEEP status.



**Figure 28: Status Indicators**

### 3.13. Test Points

The 5G-REDCAP EVB provides test points which help you obtain the corresponding waveforms of some signals. The following figures show the details of all test points.

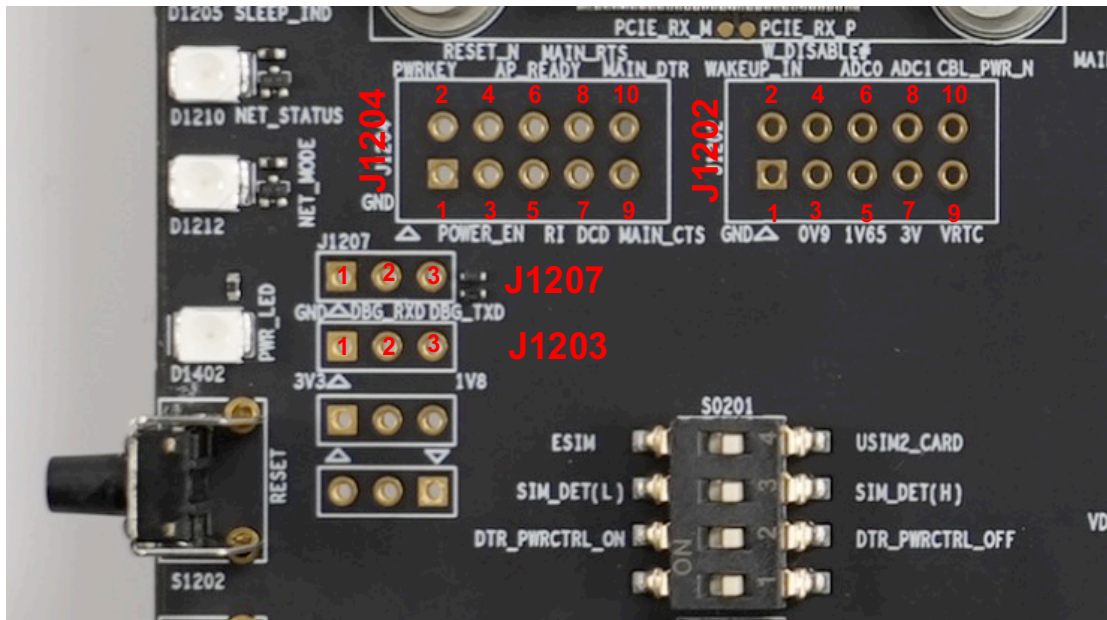


Figure 29: Test Points of J1202, J1203, J1204 and J1207

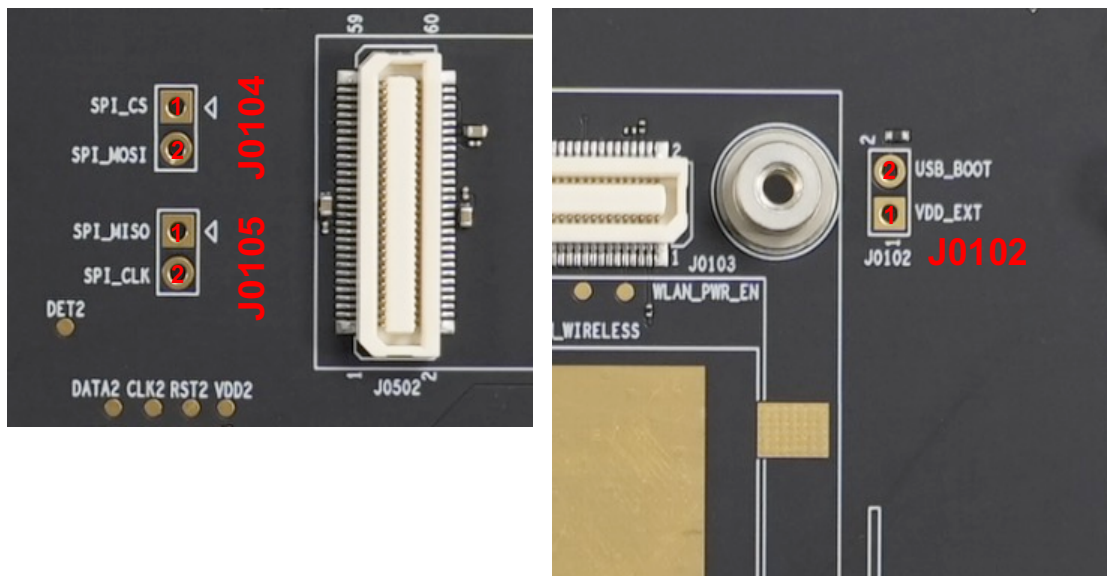


Figure 30: Test Points of J0102, J0104 and J0105

**Table 20: Pin Definition of Test Points**

<b>J1204</b>			
<b>Pin No.</b>	<b>Pin Name</b>	<b>Module Pin No.</b>	<b>Description</b>
1	GND	0–12, 23, 26, 33, 35, 38, 40, 50, 52, 54, 56–60, 62, 78, 109, 115, 125, 126, 135, 137, 140, 141, 143, 149, 151, 163, 169–204	Ground
2	PWRKEY	25	Connected directly to PWRKEY of the module
3	POWER_EN	NA	DTR control module power
4	RESET_N	24	Connected directly to RESET_N of the module
5	RI	68	Connected directly to MAIN_RI of the module
6	AP_READY	NA	Application processor ready
7	DCD	69	Connected directly to MAIN_DCD of the module
8	MAIN_RTS	71	Connected directly to MAIN_RTS of the module
9	MAIN_CTS	70	Connected directly to MAIN_CTS of the module
10	MAIN_DTR	72	Connected directly to MAIN_DTR of the module
<b>J1202</b>			
<b>Pin No.</b>	<b>Pin Name</b>	<b>Module Pin No.</b>	<b>Description</b>
1	GND	0–12, 23, 26, 33, 35, 38, 40, 50, 52, 54, 56–60, 62, 78, 109, 115, 125, 126, 135, 137, 140, 141, 143, 149, 151, 163, 169–204	Ground
2	WAKEUP_IN	1	Connected directly to WAKEUP_IN of the module
3	0V9	NA	0.9 V power
4	W_DISABLE#	NA	Airplane mode control
5	1V65	NA	1.65 V power
6	ADC0	49	Connected directly to ADC0 of the module
7	3V	NA	3 V power
8	ADC1	48	Connected directly to ADC1 of the module
9	VRTC	NA	NC

10	CBL_PWR_N	133	Connected directly to CBL_PWR_N of the module
<b>J1207</b>			
Pin No.	Pin Name	Module Pin No.	Description
1	GND	0–12, 23, 26, 33, 35, 38, 40, 50, 52, 54, 56–60, 62, 78, 109, 115, 125, 126, 135, 137, 140, 141, 143, 149, 151, 163, 169–204	Ground
2	DBG_RXD	13	Connected directly to DBG_RXD of the module
3	DBG_TXD	14	Connected directly to DBG_TXD of the module
<b>J1203</b>			
Pin No.	Pin Name	Module Pin No.	Description
1	3V3	NA	3.3 V power
2	NC	NA	NC
3	1V8	NA	1.8 V power
<b>J0104</b>			
Pin No.	Pin Name	Module Pin No.	Description
1	SPI_CS	41	Connected directly to SPI_CS of the module
2	SPI_MOSI	42	Connected directly to SPI_MOSI of the module
<b>J0105</b>			
Pin No.	Pin Name	Module Pin No.	Description
1	SPI_MISO	43	Connected directly to SPI_MISO of the module
2	SPI_CLK	44	Connected directly to SPI_CLK of the module
<b>J0102</b>			
Pin No.	Pin Name	Module Pin No.	Description
1	VDD_EXT	7	Connected directly to VDD_EXT of the module
2	USB_BOOT	22	Connected directly to USB_BOOT of the module



# 4 Operation Procedures

This chapter introduces how to use the 5G-REDCAP EVB for testing and evaluation of applicable modules. Before the procedures below, ensure modules and the EVB are correctly assembled.

## 4.1. Turn On the Module

1. Connect the module TE-A to the EVB via connectors J0101 and J0103.
2. Insert a (U)SIM card into the (U)SIM card connectors (J0801/J0804) on the EVB.
3. Use cellular cables to connect the module TE-A to the EVB, and connect antennas to the EVB.
4. Connect the EVB to a 5 V/ 3 A power, then switch S1301 to ON, the module and the EVB will be turned on. Then D1402 (Power supply ON/OFF indicator) will light up, which indicates that the power supply for the whole EVB is ready.
5. Press the S1201 (PWRKEY) for at least 500 ms, then the module will be turned on and D1203 (module operation status indicator) will light up.

### NOTE

1. If the PWRKEY has been switched to “**TURN ON**” side before the power supply is connected, the module and the EVB will turn on automatically when the power adapter is connected.
2. The turn-on should be performed only after the EVB assembling is completed to avoid any possible damage.

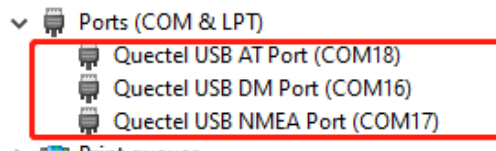
## 4.2. Turn Off the Module

There are two methods to turn off the module.

1. Turn off the module with **AT+QPOWD**. This is the best and the safest method. The module will log off from the network and save data before turn-off. When turning off the module with AT command, please keep PWRKEY at a high level after the execution of the turn-off command, otherwise, the module will be turned on again after successful turn-off.
2. Turn off the module with PWRKEY button (S1201). Long press PWRKEY for at least 650 ms, then the module will be turned off.

### 4.3. Communication Via USB

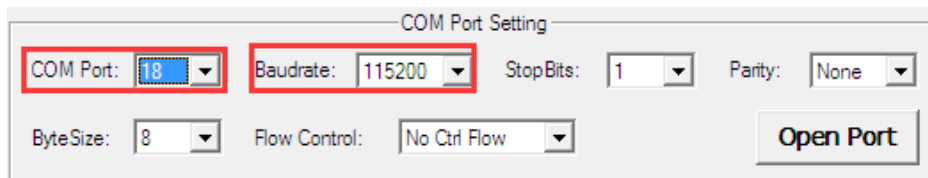
1. Turn on the module according to the procedure in **Chapter 4.1**.
2. Connect the EVB and a PC with USB cable through USB Type-C interface, and then run the driver disk on the PC to install the USB driver. For details about USB driver installation, see **document [2]**. The USB port numbers can be viewed in Device Manager of the PC when the USB driver is installed, as shown below.



**Figure 31: USB Ports**

3. Install and then use QCOM provided by Quectel to realize the communication between the module and the PC.

The following figure shows the COM Port Setting of QCOM: select the correct “**COM Port**” (USB AT Port, which is shown in figure above) and set correct “**Baudrate**” (e.g. 115200 bps). For more details about QCOM usage and configuration, see **document [3]**.



**Figure 32: COM Port Setting Field on QCOM (USB AT Port Connection)**

### 4.4. Communication Via UART Interface

Connect the EVB and a PC with USB cable through USB Type-C interface, and install the USB-to-UART driver. Serial port number can be viewed through the PC Device Manager, such as below:

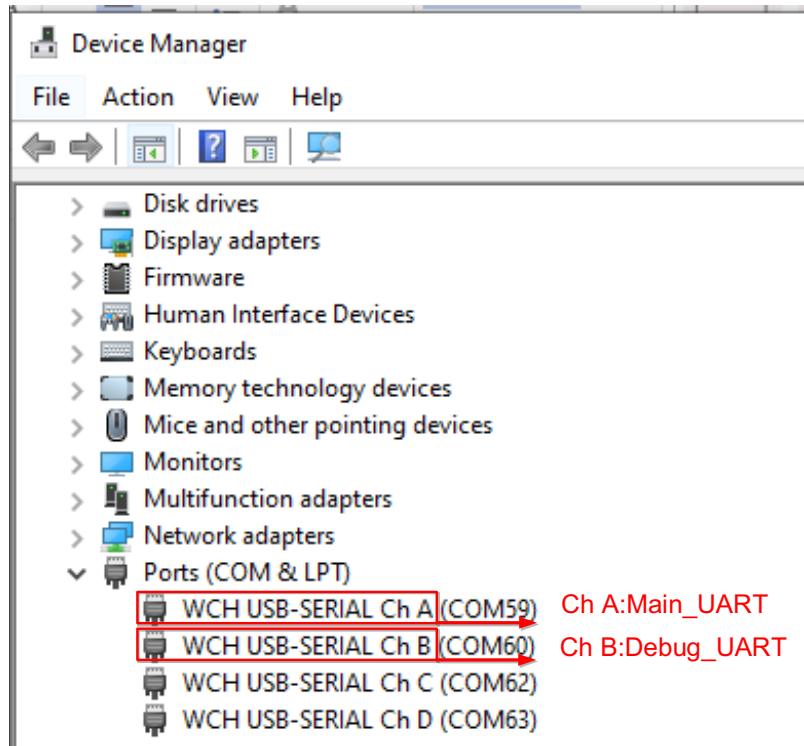


Figure 33: USB Serial Port

## 4.5. Firmware Upgrade

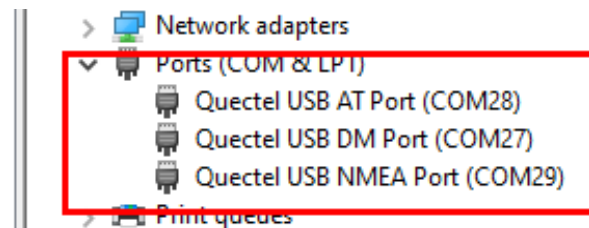
Firmware of the module is upgraded via USB by default, and there are two methods for the upgrade: emergency download and normal download. Please refer to the following procedures to upgrade firmware through the EVB.

### 4.5.1. Emergency Download

1. Install the firmware upgrade tool QFlash on PC.
2. Connect the EVB and the PC through USB Type-C cable.
3. Short-circuit USB BOOT and VDD EXT (J0102).
4. Insert the DC power adapter and power on the module.
5. Upgrade the firmware with QFlash. See **document [4]** for details about the use of QFlash.

### 4.5.2. Normal Download

1. Turn on the module according to the procedure in **Chapter 4.1**.
2. Wait for the USB port to be found in Device Manager of the PC.



**Figure 34: USB Ports in PC Device Manager**

3. Open QFlash and upgrade the firmware. See **document [4]** for the detailed procedure.

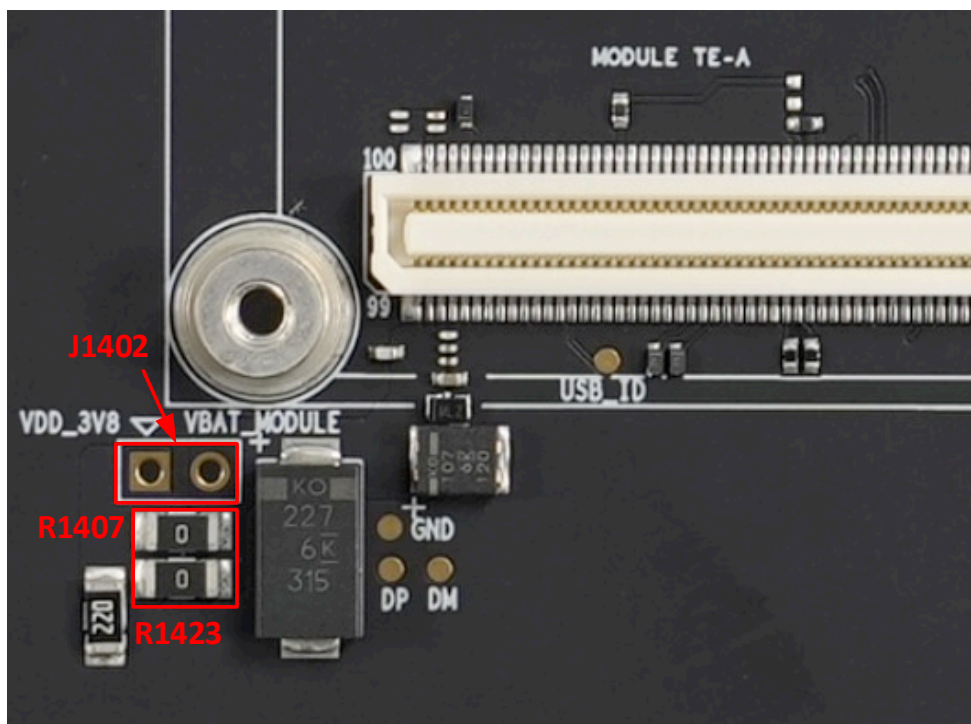
## 4.6. Reset the Module

Reset is only used in case of emergency or abnormality. For example, the software fails to respond for more than 5 seconds due to some serious problems.

Press the RESET button S1202 for more than 150 ms then release it to reset the module. Please note that this operation may cause loss of information in the memory as the module will be initialized after the resetting.

## 4.7. Power Consumption Test

The EVB can also be used to test the power consumption of the module after making the following modifications.



**Figure 35: Modifications and Configurations for Power Consumption**

1. Remove resistors R1407 and R1423.
2. Connect an external power supply to the J1402 PIN "VBAT\_MODULE".
3. Turn on the module and then test the power consumption according to specific demand.

# 5 Appendix References

**Table 21: Related Documents**

Document Name
[1] Quectel_List_of_EVB_Applicable_Modules
[2] Quectel_LTE&5G_Windows_USB_Driver_Installation_Guide
[3] Quectel_QCOM_User_Guide
[4] Quectel_QFlash_User_Guide

**Table 22: Terms and Abbreviations**

Abbreviation	Description
AGND	Analog Ground
AP	Application Processor
BTB	Board to Board
COM	Cluster Communication Port
DC	Direct Current
DI	Digital Input
DO	Digital Output
EVB	Evaluation Board
GND	Ground
GNSS	Global Navigation Satellite System
I/O	Input/Output

---

LED	Light Emitting Diode
MIC	Microphone
NC	Not Connected
PC	Private Computer
PCIe	Peripheral Component Interconnect Express
PCM	Pulse Code Modulation
PHY	Physical Layer
PO	Power Output
RTS	Request to Send
SD	Secure Digital
SIM	Subscriber Identity Module
SPI	Serial Peripheral Interface
UART	Universal Asynchronous Receiver & Transmitter
USB	Universal Serial Bus
(U)SIM	(Universal) Subscriber Identity Module

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