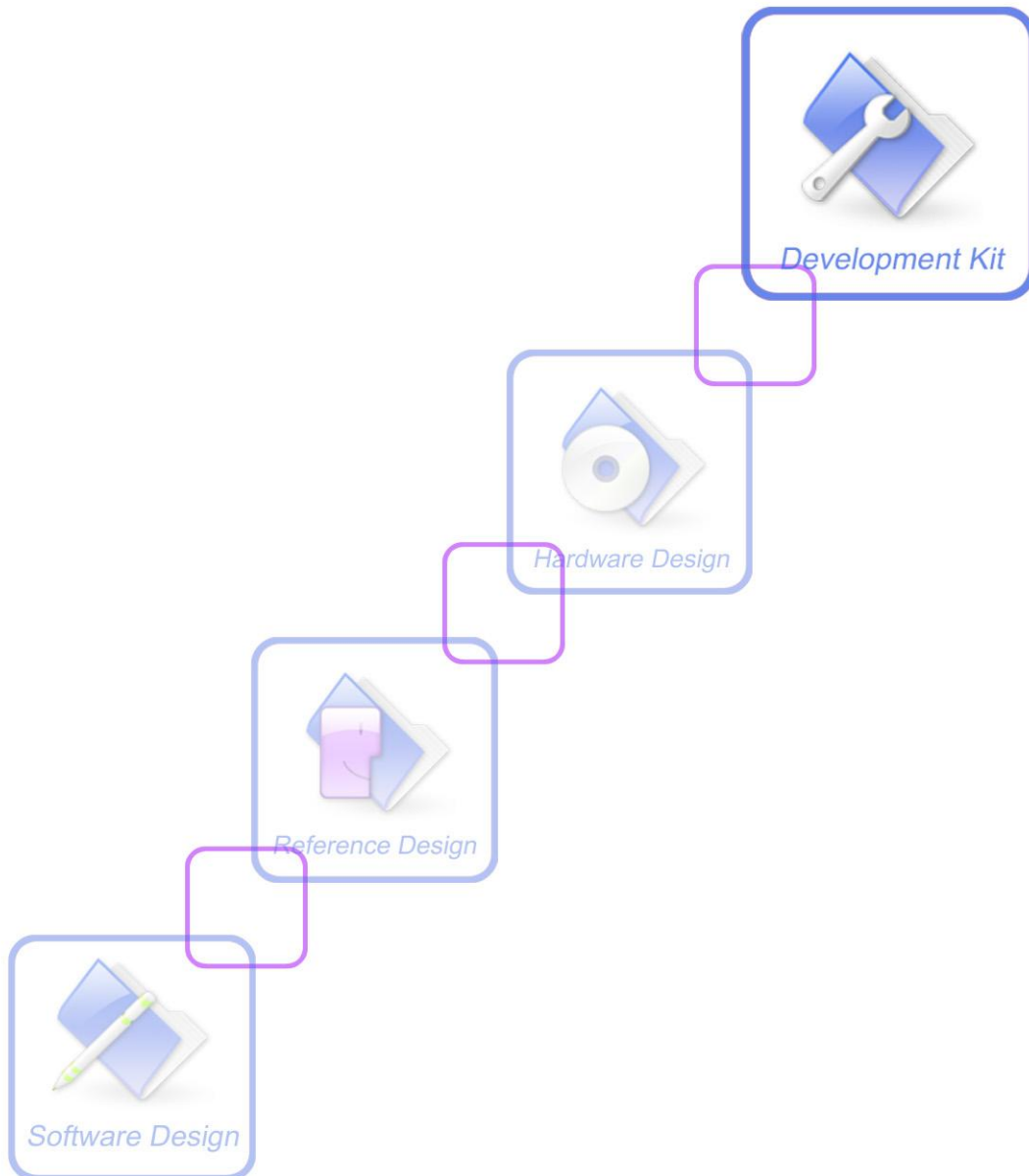




SIM7000A_EVB Kit_User Guide_V1.01



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Version History

Data	Version	Description of change	Author
2016-07-12	1.00	Origin	shijie.yuan
2017-4-12	1.01	modification	Albert Meng

SCOPE

This document describes how to use SIMCOM-EVB to do test; user can get useful info about the SIMCOM-EVB quickly through this document.

This document is subject to change without notice at any time.

1. SIMCOM-EVB overview

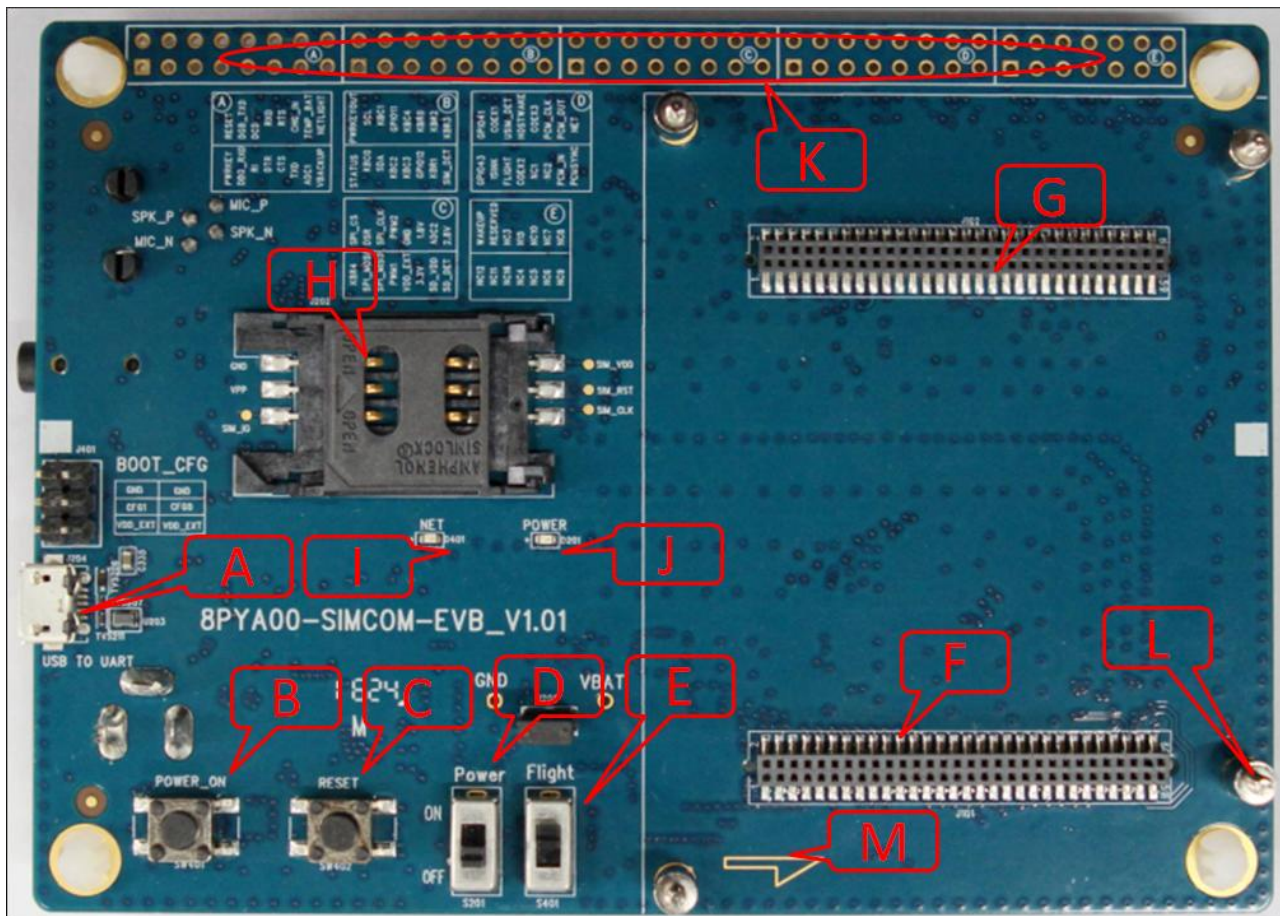


Figure1: SIMCOM-EVB TOP view

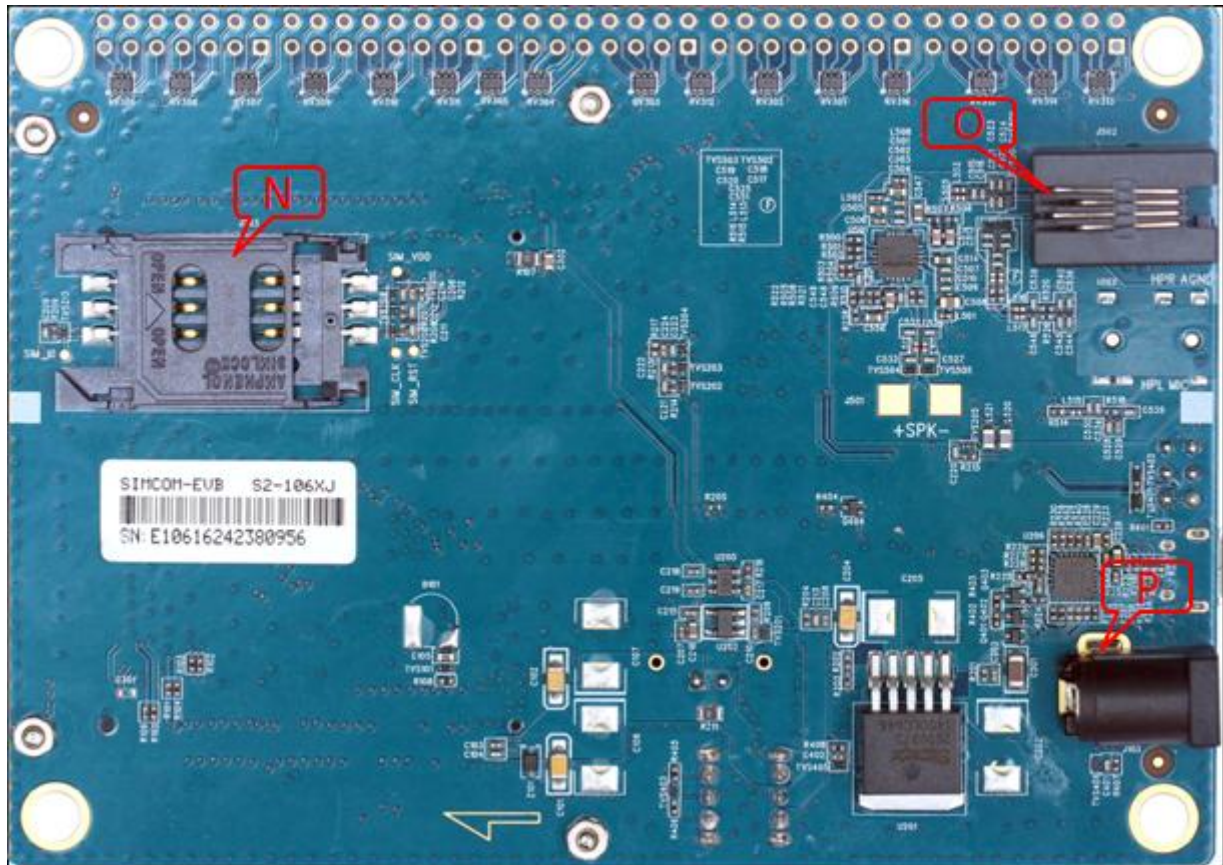


Figure2: SIMCOM-EVB BOTTOM view

- A: USB jack
- B: Powerkey
- C: Reset
- D: Power switch
- E: RF switch
- F: TE connector
- G: TE connector
- H: Main SIMcard holder
- I: LED indicator for Netlight
- J: LED indicator for Power
- K: Test Point
- L: Studs and nuts
- M: mark of TE Module direction
- N: Second SIM card holder
- O: Handset jack
- P: Power jack

2. EVB Accessory

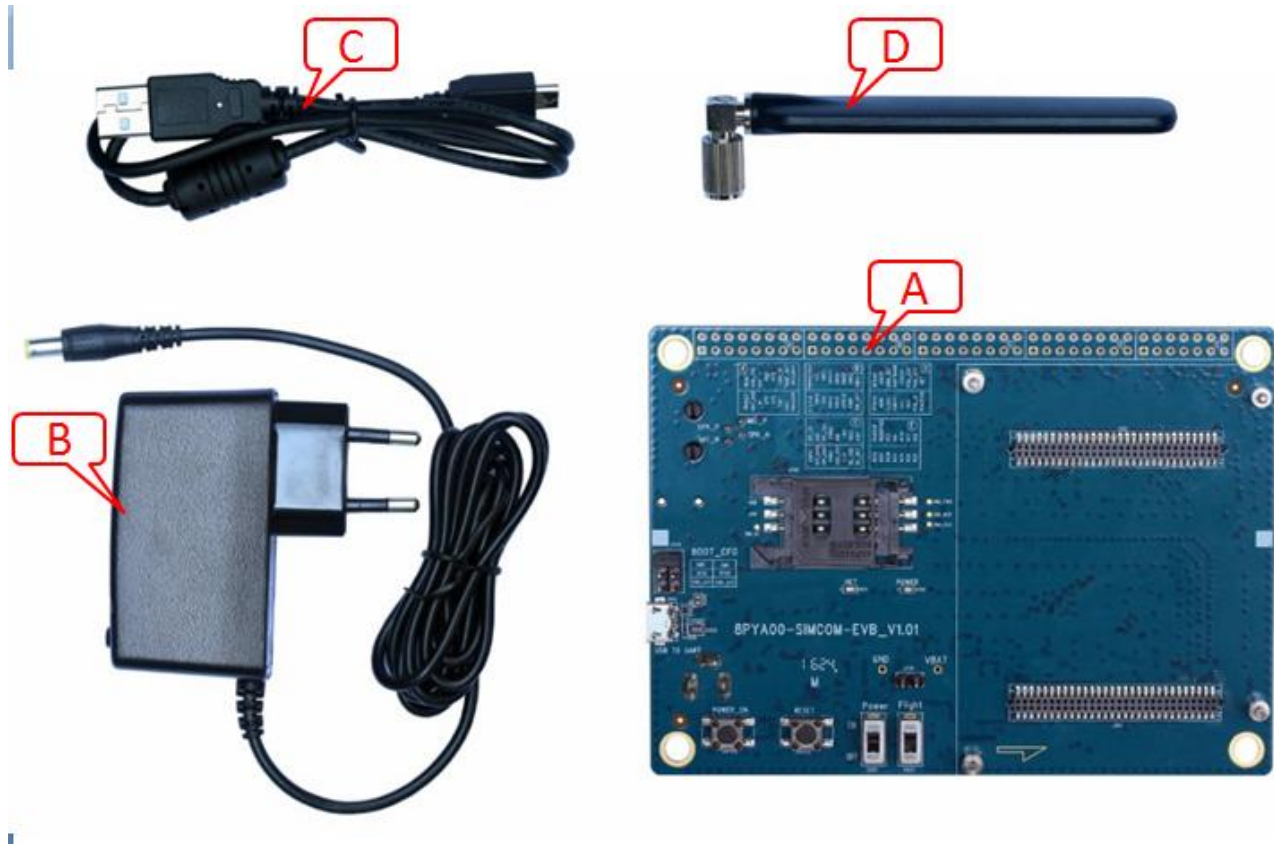


Figure 3: EVB Accessory

A: SIMCOM-EVB

B: 5V DC adapter

C: USB Cable

D: GSM/WCDMA /LTE antenna

3. Accessory Interface

3.1 Power Interface

Pin	Signal	I/O	Description
1	Adapter input	I	5V/2.0A DC source input

3.2 Audio Interface

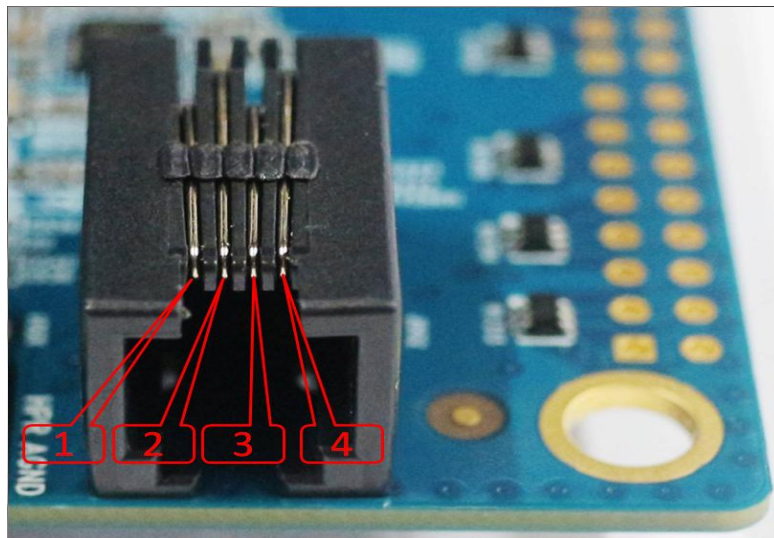


Figure4: Audio Interface

Headset interface:

Pin	Signal	I/O	Description
1	MICN	I	Negative microphone input
2	SPKN	O	Negative receiver output
3	SPKP	I	Positive receiver output
4	MICP	O	Positive microphone input

3.3 SIM card interface

Main SIMCard holder (J202) is the primary SIM interface, Secondary slot (J203) is for special module which supports dual sim.

Notice:

Here for SIM7000A, just use main SIMcard holder (J202).

3.4 USB Interface

EVB USB interface (A) actually is USB-to-UART port which could be imaged to two virtual ports.

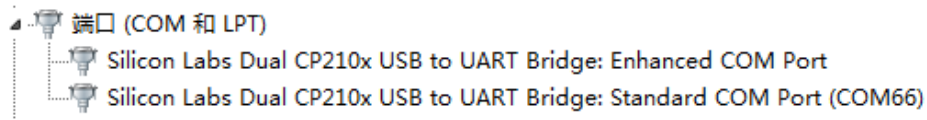


Figure 5: Virtual serial port

Enhanced COM port: AT communication

Standard COM port: Debug (used for 2G module only)

Notice

CP2105 driver is available here:

<http://www.silabs.com/products/mcu/Pages/SoftwareDownloads.aspx>

3.5 Power switch

After 5V Adapter is inserted ,switch S201 on, then power LED (D201) will be solid on.

3.6 POWER_ON Button

After giving power to EVB,press the POWER_ON button for more than 1.5 seconds, the module will be turned on, the network LED light (D401) will blink.

3.7 RF switch



Figure 6: RF switch

RF switch (S401) could control module RF on or off. That's hardware control of flight mode. When RF is on, flight mode is off, when RF is switched off, flight mode is on.

3.8 LED Indicator

LED light work's behaviour as below.

Name	Description	STATUS
D201	Power ON/OFF indicator	Bright: EVB Power ON; Extinct: EVB Power OFF
D401	NET status indicator	Blinking at a certain frequency according various net status

4. Test Interface



Figure 7: Test interface overview

4.1 Test Point A

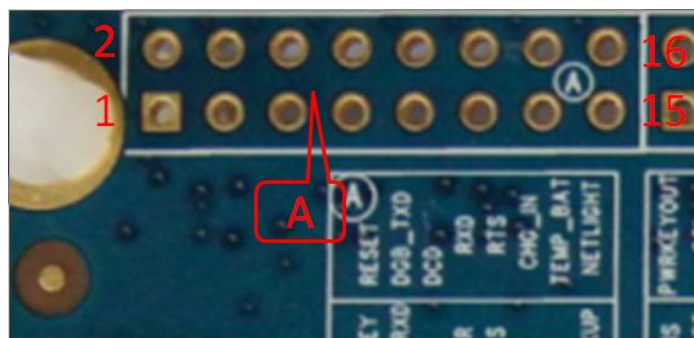


Figure 8: Test Point A

Test Point A Pin description:

Pin	Signal	I/O	Description
1	PWRKEY	I	Power on key
2	RESET	I	Reset key
3	DBG_RXD	I	Receive data
4	DBG_TXD	O	Transmit data

5	RI	O	Ring Indicator
6	DCD	O	Data carrier detection
7	DTR	I	Data Terminal Ready
8	RXD	I	Receive data
9	CTS	O	Clear to Send
10	RTX	I	Request to Send
11	TXD	O	Transmit data
12	CHG_IN	I	Charge in detect
13	ADC1	I	ADC input
14	TEMP_BAT	I	Temperature detect
15	VBACKUP	P	Battery for RTC
16	NETLIGHT	O	LED indicator for NET Light

4.2 Test Point B

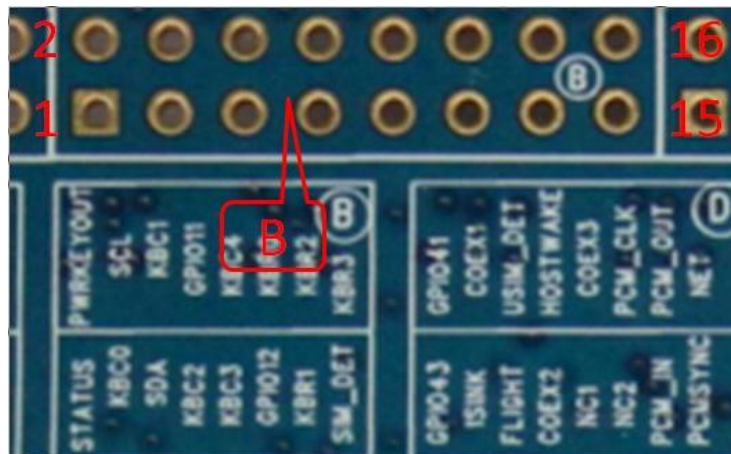


Figure9: Test Point B

Test Point B Pin description:

Pin	Signal	I/O	Description
1	STATUS	O	Module working on indicate
2	NC17		
3	KBC0	I	KEYPAD input
4			
5			
6	KBC1	I	KEYPAD input
7	KBC2	I	KEYPAD input
8	GPIO11	I/O	GPIO
9	KBC3	I	KEYPAD input
10	KBC4	I	KEYPAD input

11	GPIO12	I/O	GPIO
12	KBR0	I	KEYPAD input
13	KBR1	I	KEYPAD input
14	KBR2	I	KEYPAD input
15	SIM1_DET	I	SIM detect
16	KBR3	I	KEYPAD input

4.3 Test Point C

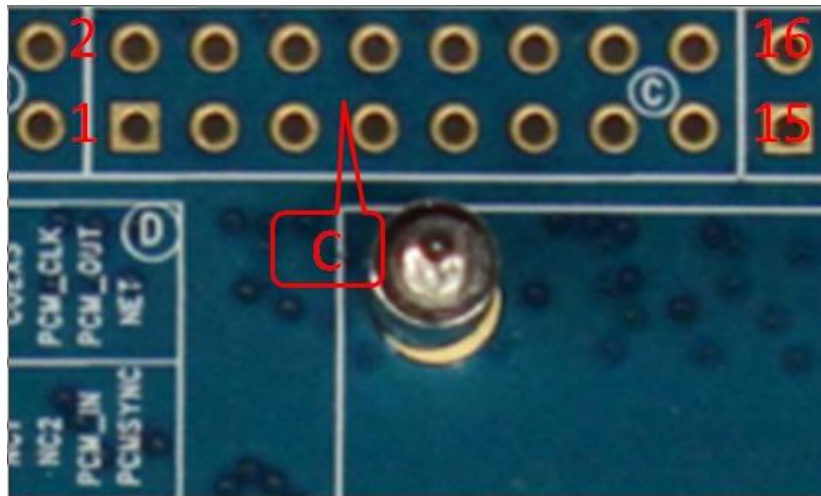


Figure10: Test Point C

Test Point C Pin description:

Pin	Signal	I/O	Description
1	KBR4	I	KEYPAD input
2	SPI_CS	O	SPI Chip Select
3	SPI_MOSI	O	SPI Data output
4	DSR	O	Data Set Ready
5	SPI_MISO	I	SPI Data input
6	SPI_CLK	O	SPI Clock output
7	PWM1	O	PWM output
8	PWM2	O	PWM output
9	VDD_EXT	P	Power output from Module
10	GND	P	GND
11	3V3	P	3.3V Power
12	1V8	P	1.8V Power
13	SD_VDD	P	Power for SD Card
14	ADC2	I	ADC input

15	SD_DET	I	SD detect
16	2.8V	P	2.8V

4.4 Test Point D

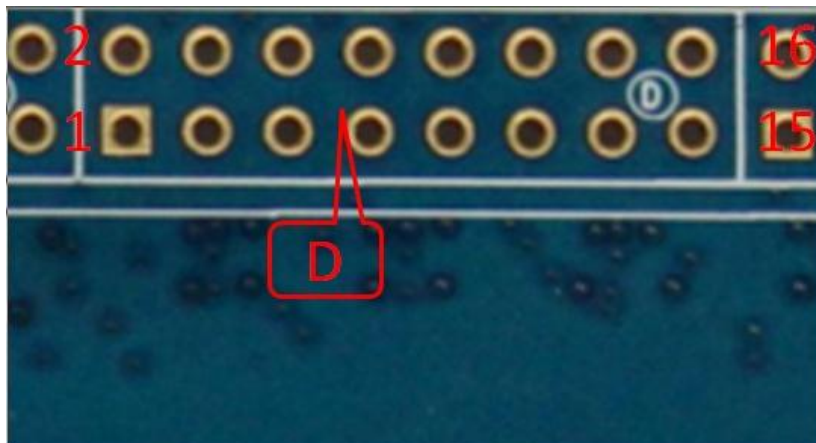


Figure11: Test Point D

Test Point D Pin description:

Pin	Signal	I/O	Description
1	GPIO43	I/O	GPIO
2	GPIO41	I/O	GPIO
3	ISINK	AI	Ground-referenced current sink.
4	COEX1	O	RF synchronizing between Wi-Fi and LTE
5	F LIGHT	O	Flight mode
6	SIM2_DET	I	SIM detect
7	COEX2	O	RF synchronizing between Wi-Fi and LTE
8	HOST_WAKE	O	HOST WAKEUP
9	NC1		
10	COEX3	O	RF synchronizing between Wi-Fi and LTE
11	NC2		
12	PCM_CLK	O	PCM data bit clock
13	PCM_IN	I	PCM data input
14	PCM_OUT	O	PCM data output
15	PCM_SYNC	O	PCM data frame sync signal
16	NET_STATUS	O	NET status

4.5 Test Point E

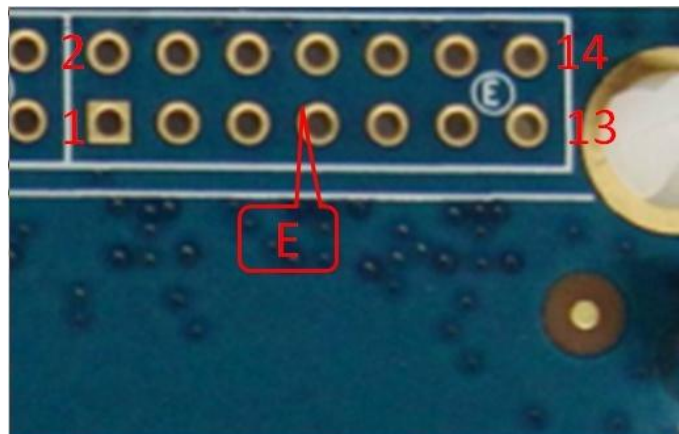


Figure12: Test Point E

Test Point E Pin description:

Pin	Signal	I/O	Description
1	NC12		
2	WAKEUP_IN	I	WAKEUP input
3	NC11		
4	RESERVED		
5	NC16		
6	NC3		
7	NC4		
8	NC15		
9	NC5		
10	NC10		
11	NC6		
12	NC7		
13	NC9		
14	NC8		

Note: please refer to specified TE schematic for test point if there has difference.

5. Illustration

5.1 SIMCom TE installation and uninstallation



Figure13: TE assembly

- 1) there are four studs on board near connectors. It's easy to put TE in correct position without making mistake.
- 2) take care of TE SMA connector direction;
- 3) take care of the mark for TE direction on EVB board.

Uninstall and Replace TE board

- 1) it's a little hard to remove TE board from EVB connector, because they are connected closely.
- 2) Take care of power to remove from SMA connector side slowly.

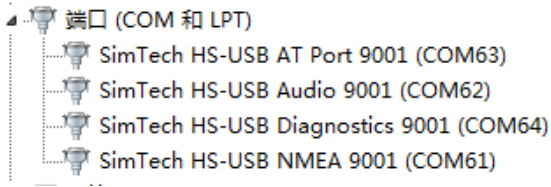
5.2 Power on module:

- 1) Connect the SIM7000-TE to the 2x60pins connector on EVB, plug in 5V DC adapter, switch S201(power) on; also make sure S401(RF) on.
- 2) Press the POWER_ON button for more than 1.5 second and then release, module will power on.

After the module is on, the LED light D401 will blink at a certain frequency. Through the status LED light, you can judge registering status of the module. For detailed description, please refer to SIMCOM HD document.

5.3 AT communication

- (1) Connect main antenna to the SIM7000-TE, insert SIM card to main sim slot (H).
- (2) Connect the USB cable from the USB jack on SIM7000-TE board to PC, install USB driver;



- (3) Open AT communication program to run AT commands. Here we select AT port.



Notice

for debug and FW upgrade, pls refer to below documentations.

- 1) How to take SIM7000 log with QXDM.pdf
 - 2) How to Update SIM7000 FW version with QPST.pdf
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