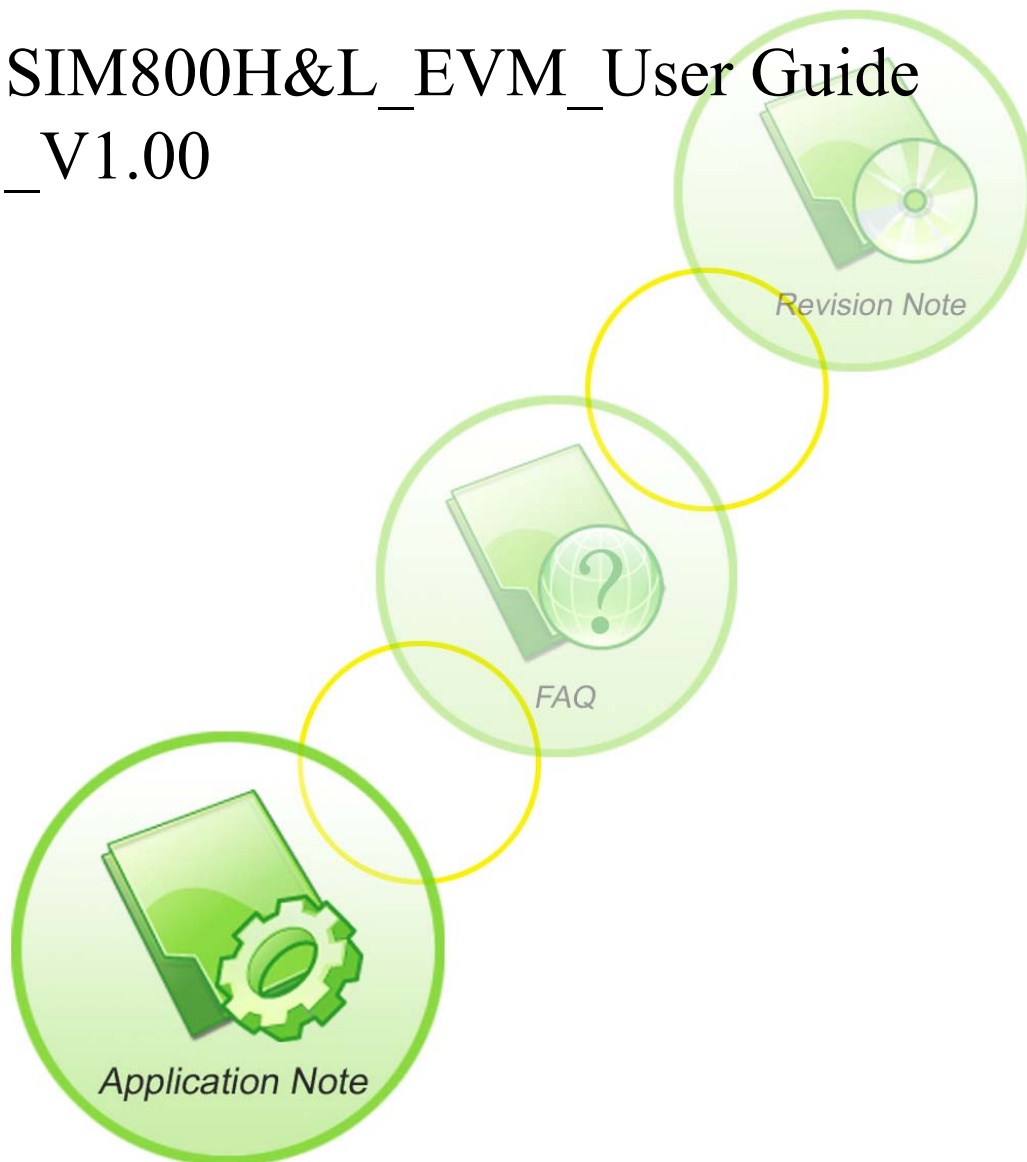




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# SIM800H&L\_EVM\_User Guide \_V1.00



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## Version History:

Data	Version	Description of change	Author
2013-08-17	1.00		Songjialin

## SCOPE

This document presents the usage of EVM. This document can apply to SIM800L-EVM and SIM800H-EVM.

## 1 EVM Accessory



**Figure 1: EVM accessory**

- A: USB-to-RS232 cable
- B: 5V DC adapter
- C: GSM antenna
- D: Mini gender changer
- E: SIM900 EVB
- F: SIM800H-TE/SIM800L-TE
- G: Earphone (2.5mm)
- H: USB data cable



Figure 2: EVB and accessory

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## 2 TE Introduce

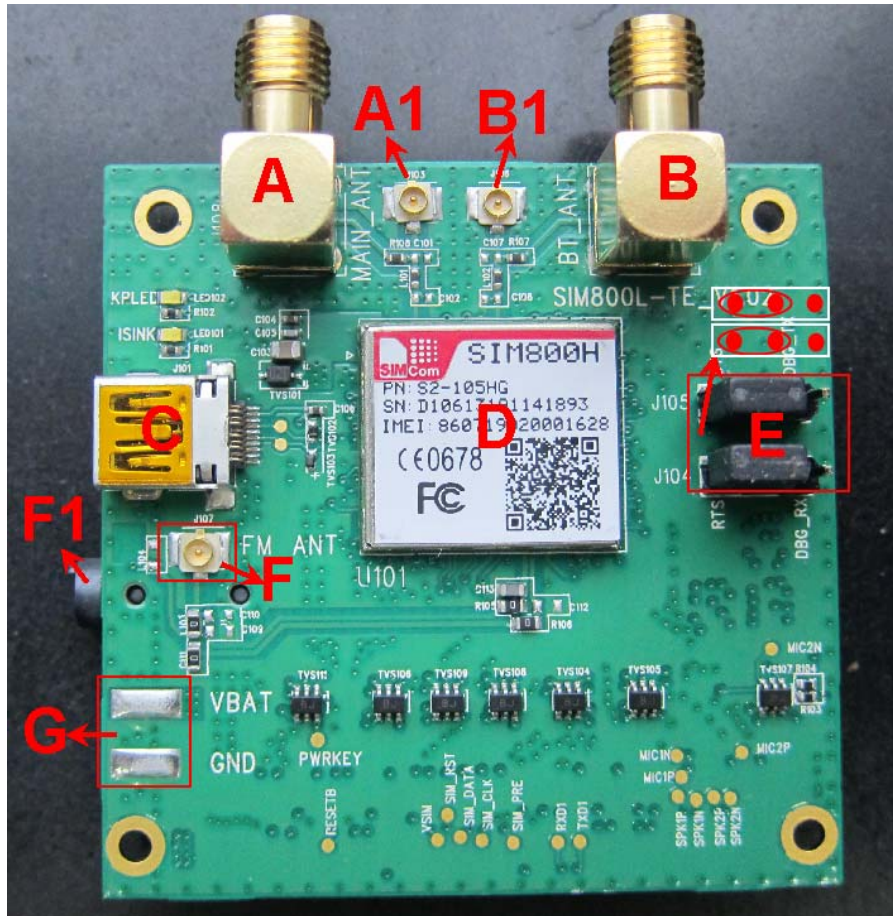


Figure 3: TE top view

- A: SMA connector of GSM antenna (default)
- A1: Test connector of GSM antenna
- B: SMA connector of Bluetooth antenna
- B1: Test connector of Bluetooth antenna
- C: Mini-USB interface
- D: SIM800H or SIM800L module
- E: Two jumpers
- F: Test connector of FM antenna
- F1: Antenna connector of FM
- G: Test point of VBAT

**Note:**

1. If use full mode serial port, connect two jumpers to the left. If full mode is not necessary, it could be multiplexed into two serial ports without flow control and connect two jumpers to the right, customers can use **DBG\_TX, DBG\_RX**

2. Customers can use a 3.5 mm earphone (connected to F1) as the FM antenna.



### 3 EVB Introduce

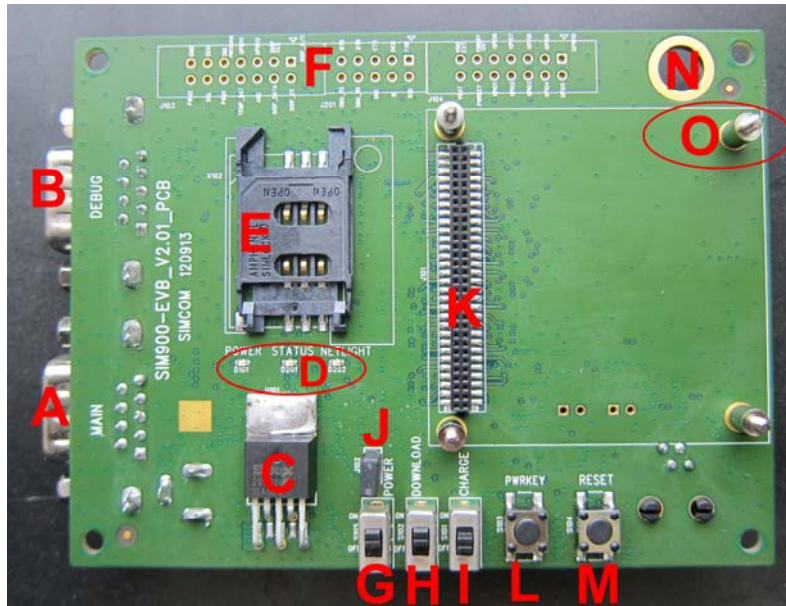


Figure 4: EVB Top view

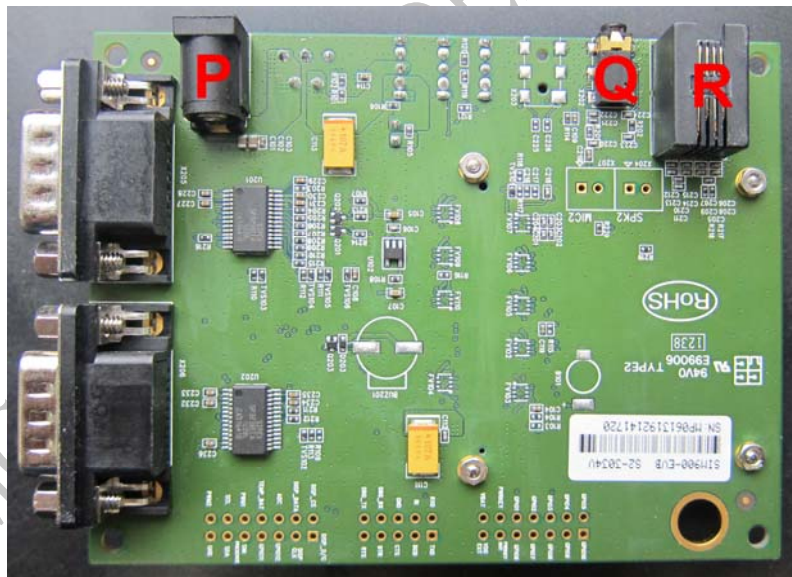


Figure 5: EVB Bottom view

- A: MAIN serial port
- B: DEBUG serial port
- C: LDO
- D: LED indicator
- E: SIM card holder
- F: Test point
- G: Power switch

- H: Download switch
- I: Charge switch (SIM800H/L do not use)
- J: VBAT jumper
- K: Module-TE interface
- L: Power key
- M: Reset key
- N: GND PAD
- O: Module fix hole
- P: DC jack
- Q: 2.5mm earphone jack
- R: Headphones jack

### 3.1 Power Interface

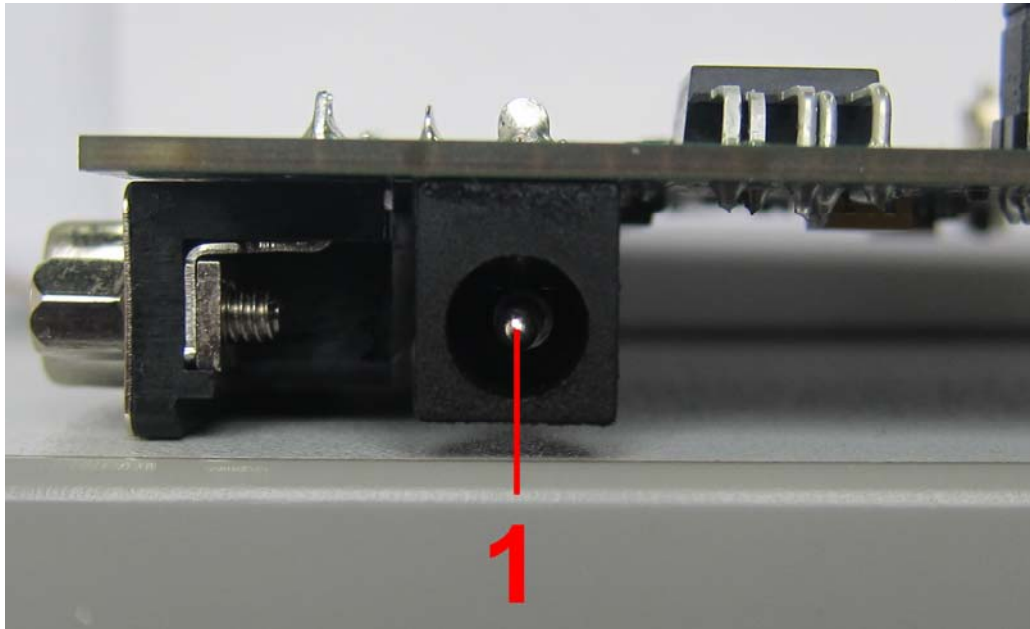


Figure 6: Power interface

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

### 3.2 Audio Interface

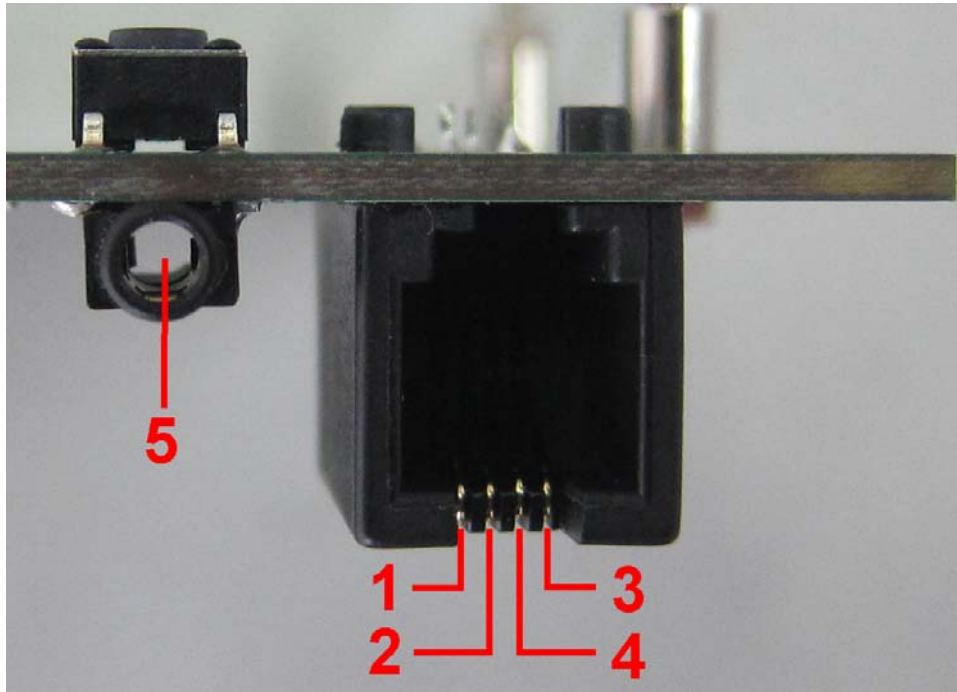


Figure 7: Audio interface

#### Headset interface:

Pin	Signal	I/O	Description
1	MIC1P	I	Positive microphone input
2	SPK1P	O	Positive receiver output
3	MIC1N	I	Negative microphone input
4	SPK1N	O	Negative receiver output

#### Earphone interface:

Pin	Signal	Input/Output	Description
5	MIC2P&SPK2P	I/O	Auxiliary audio input/output

### 3.3 SIM Card Interface

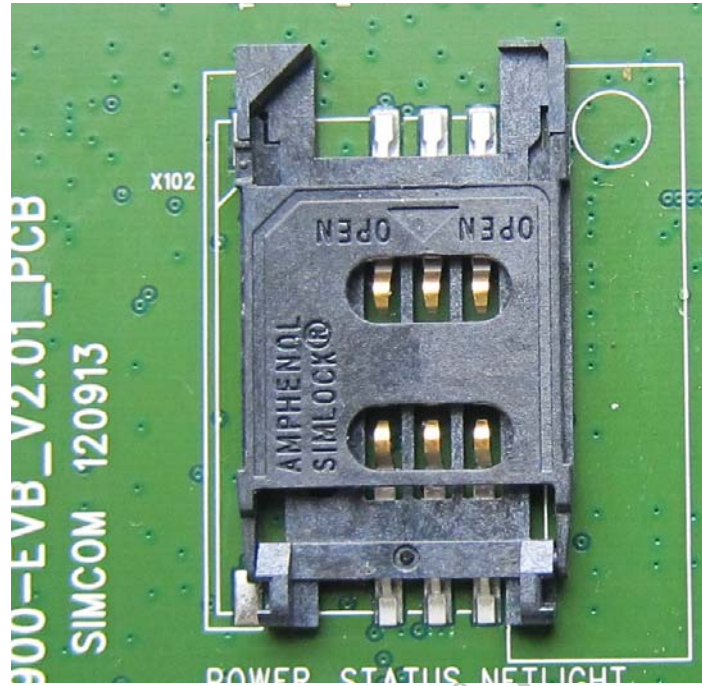


Figure 8: SIM card interface

### 3.4 Serial Port Interface

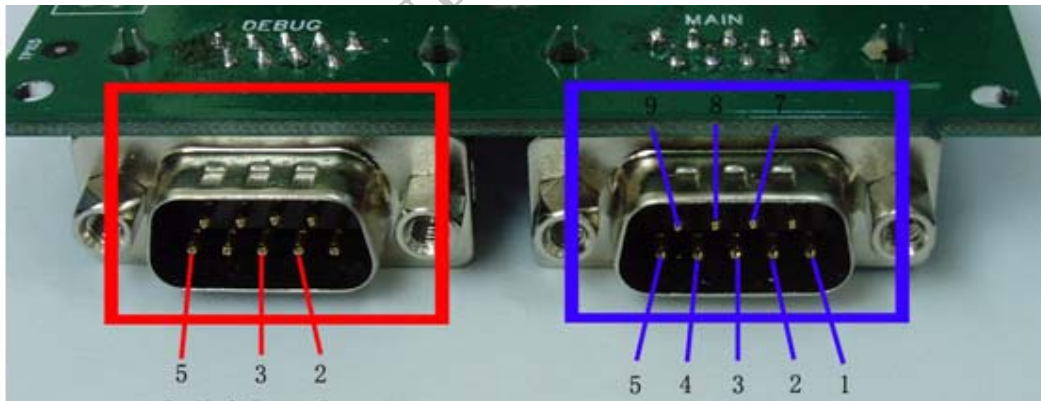


Figure 9: Serial port Interface

Serial Port 1——MAIN Interface  
Serial Port 2——DEBUG Interface

**Main Interface:**

Pin	Signal	I/O	Description
1	DCD	O	Data carrier detection
2	TXD	O	Transmit data
3	RXD	I	Receive data
4	DTR	I	Data Terminal Ready
5	GND		GND
7	RTS	I	Request to Send
8	CTS	O	Clear to Send
9	RI	O	Ring Indicator

**Debug Interface:**

Pin	Signal	I/O	Description
2	DEBUG_TX	O	Transmit data
3	DEBUG_RX	I	Receive data
5	GND		GND

**3.5 LED Indicator**



**Figure 10: LED Indicator**

Working state of LED as list:

Name	Description	STATUS
Q1	Power ON/OFF indicator	Bright: EVB Power ON; Extinct: EVB Power OFF
Q2	Module status indicator	Bright: Module runs normally Extinct: System is powered down
Q3	GSM_NET status indicator	Blinking at a certain frequency according various GSM net status



## 3.6 Test Interface

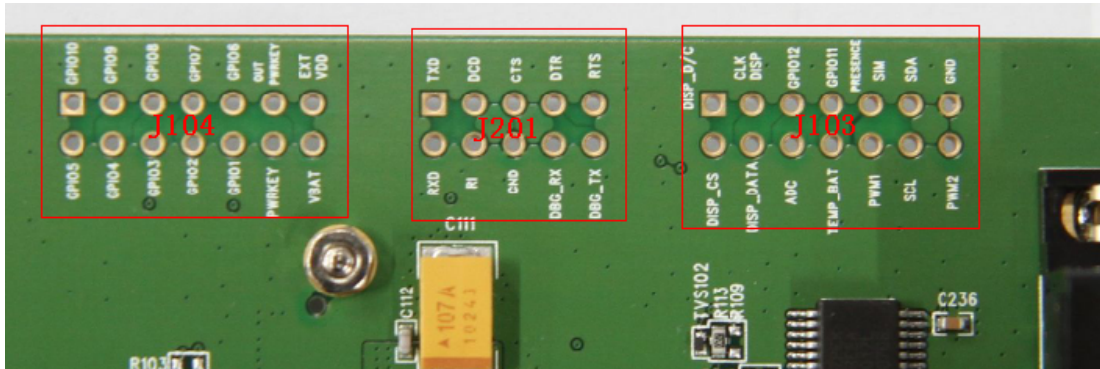


Figure 11: Test interface overview

### 3.6.1. J103

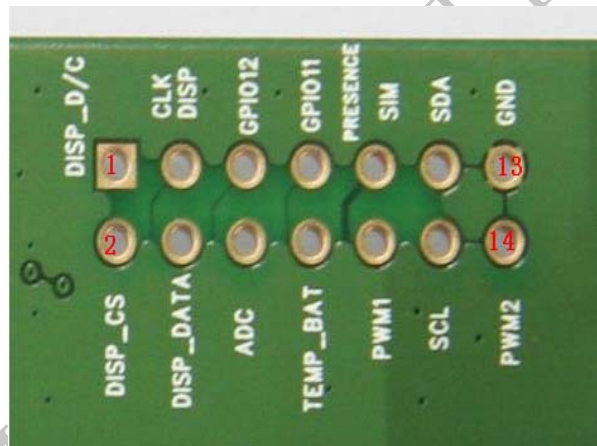


Figure 12: J103 interface

#### J103 Interface Pin list:

Pin	Signal	I/O	Description
1	DISP_D/C	O	Display data or address select
2	DISP_CS	O	Display select output
3	DISP_RST	O	Display reset
4	DISP_DI	I	Display data output
5	GPIO0_PWM	I/O	GPIO
6	ADC	I	ADC input
7	GPIO	I/O	GPIO
8	BPI_BIS1	O	RF synchronizing signal
9	SIMPRESENCE	I	SIM detect input
10	DISP_CLK	O	Display clock output



11	SDA28	I/O	I2C BUS DATA
12	SCL	I/O	I2C BUS CLOCK
13	GND	/	GND
14	DISP_DA	O	Display data input

*Note: if customers use SIM800H-TE/SIM800L-TE, test point actual function please refers to the table "J103 Interface Pin List"*

### 3.6.2. J201

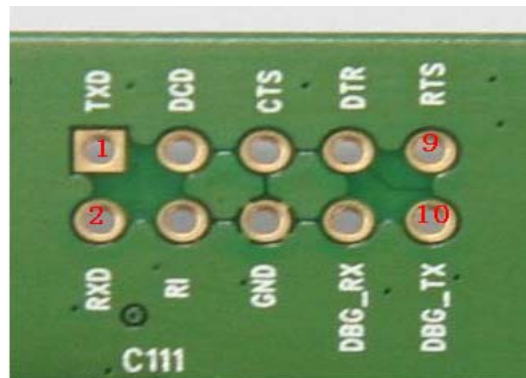
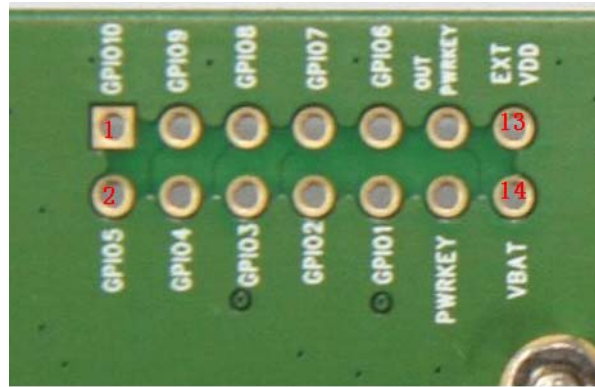


Figure 13: J201 Interface

#### J201 Interface Pin List:

Pin	Signal	I/O	Description
1	TXD	O	Transmit data
2	RXD	I	Receive data
3	DCD	O	Data carrier detection
4	RI	O	Ring Indicator
5	CTS	O	Clear to Send
6	GND	/	GND
7	DTR	I	Data Terminal Ready
8	DEBUG_RX	I	Receive data
9	RTS	I	Request to Send
10	DEBUG_TX	O	Transmit data

### 3.6.3. J104



**Figure 14: J104 Interface**

J104 Interface Pin List:

Pin	Signal	I/O	Description
1	GPIO/COL0	I/O	GPIO, keypad column
2	GPIO/COL1	I/O	GPIO, keypad column
3	GPIO/COL2	I/O	GPIO, keypad column
4	GPIO/COL3	I/O	GPIO, keypad column
5	GPIO/COL4	I/O	GPIO, keypad column
6	GPIO/ROW0	I/O	GPIO, keypad row
7	GPIO/ROW1	I/O	GPIO, keypad row
8	GPIO/ROW2	I/O	GPIO, keypad row
9	GPIO/ROW3	I/O	GPIO, keypad row
10	GPIO/ROW4	I/O	GPIO, keypad row
11	PWRKEY_OUT	O	NC
12	PWRKEY	I	POWER KEY
13	VDD_EXT	POWER	VEXT
14	VBAT	POWER	POWER

## 4 Illustration:

### 4.1 Turn on Module:

- (1) Keep S101, S102 and S105 at 'OFF' state, connect the Module-TE to the 60pins connector on SIM900 EVB, plug in 5V DC adapter, switch S105 to 'ON' state;.
- (2) Press the S103 (PWRKEY) for more than 1 second and then release, the module will power on.

After the module is powered on, the LED D202 will flash at a certain frequency. Through the state of LED (D202), you can judge registering status of the module. For detailed description, please refer to the module HD spec.

*Note: You should equip four sets of screws for better grounding to achieve a better performance.*

### 4.2 Turn off Module

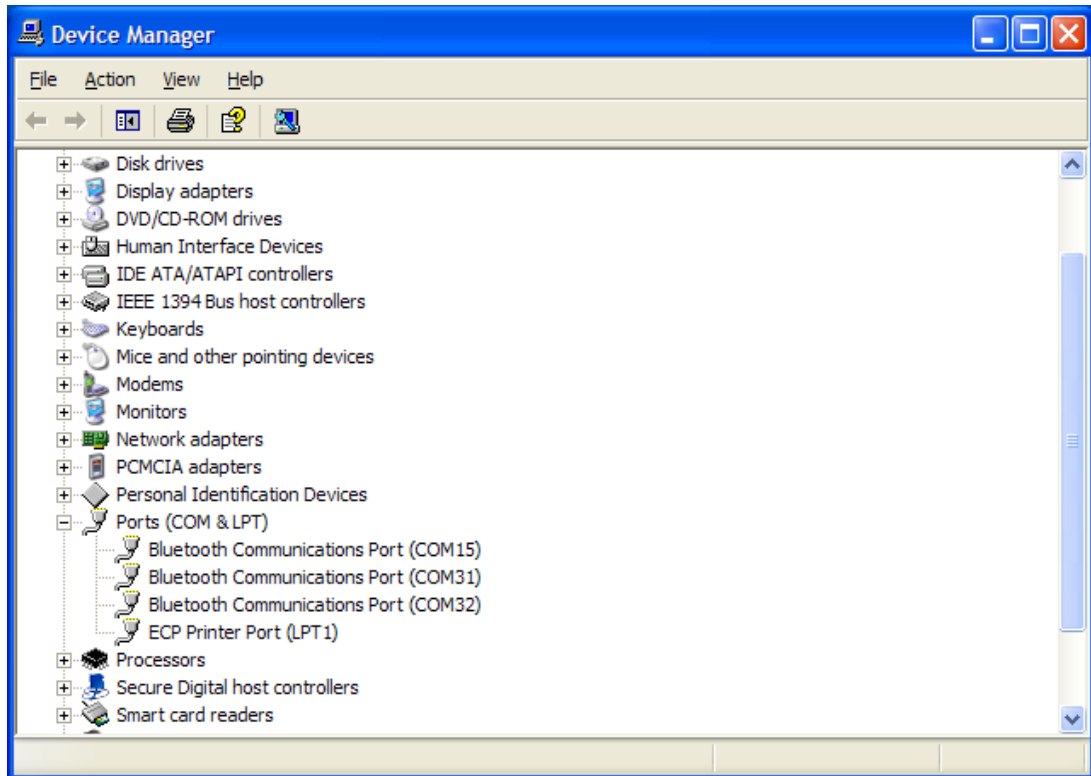
Press the S103 (PWRKEY) for about 2 seconds, the module will be turned off. After the module is turned off, the LED D201 and D202 will be off.

### 4.3 Registering Network and Making a Call

- (1) Connect the antenna to the Module-TE, insert SIM card and earphone.
- (2) Connect the serial port cable to the MAIN serial port; Open the Hyper Terminal (AT command windows) on your computer.

**First, check the serial port number:**

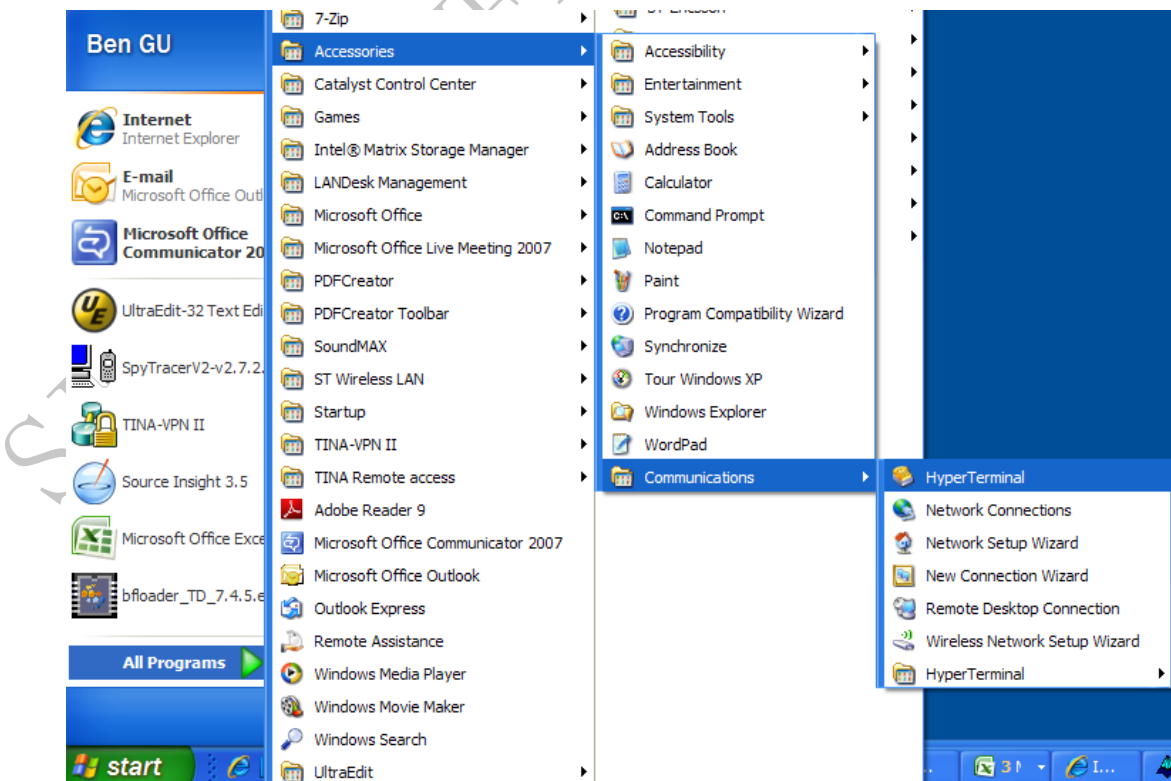
My computer (right click) → Manage → Device Manager → Ports (COM&LPT)

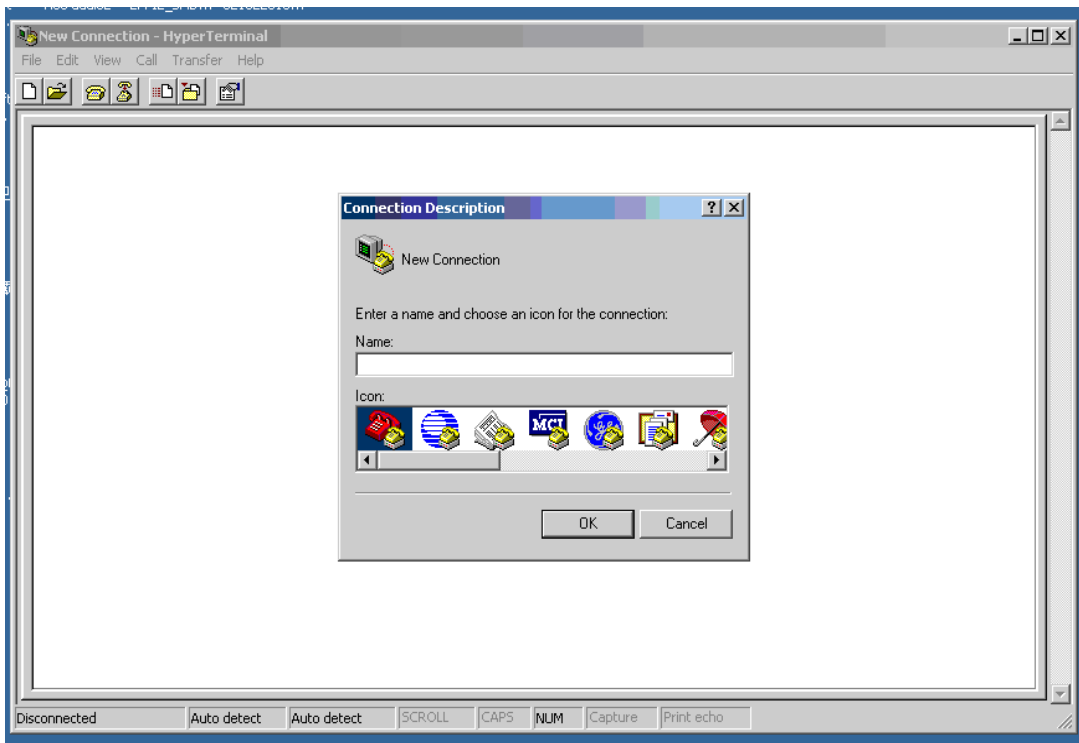


Second, use the Hyper Terminal to call the module as following:

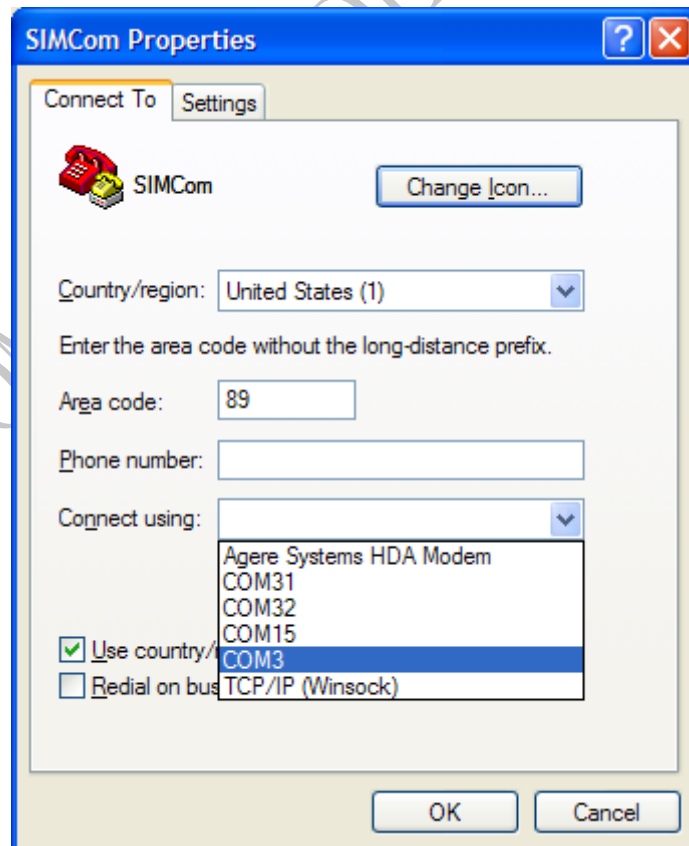
a) Open the HyperTerminal

START → All Programs → Accessory → Communication → HyperTerminal.

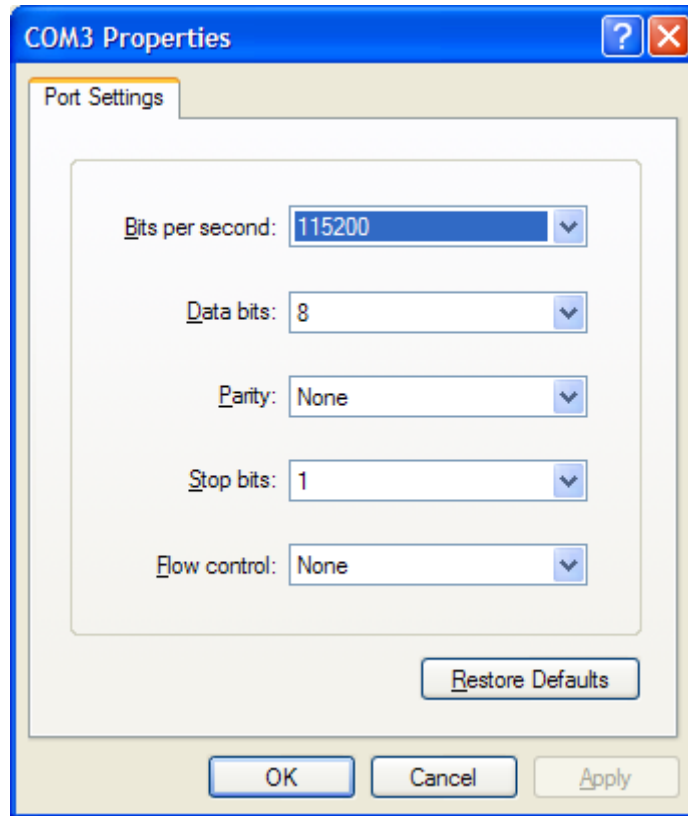




b) Configure the serial port number



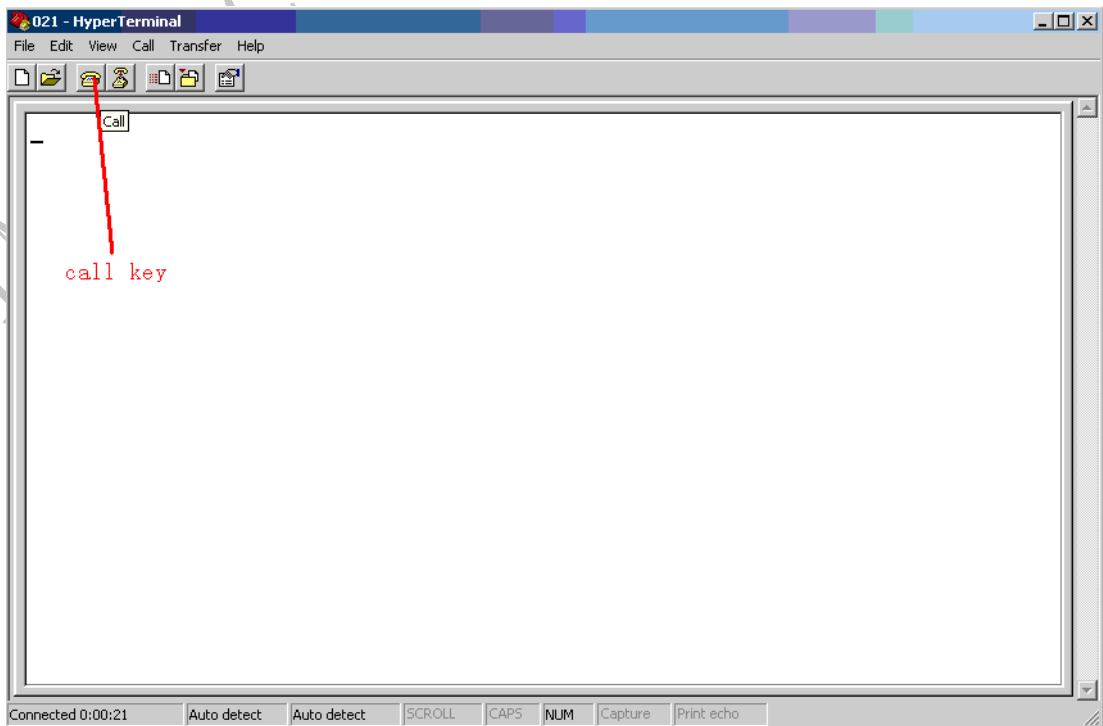
c) Set the baud rate and flow control



User can set the baud rate from 1200bps to 115200bps, and the flow control set to 'None'

(3) Act on the step of running which mentioned above, power on the module, typing the AT command in the HyperTerminal, and then the module will execute its corresponding function.

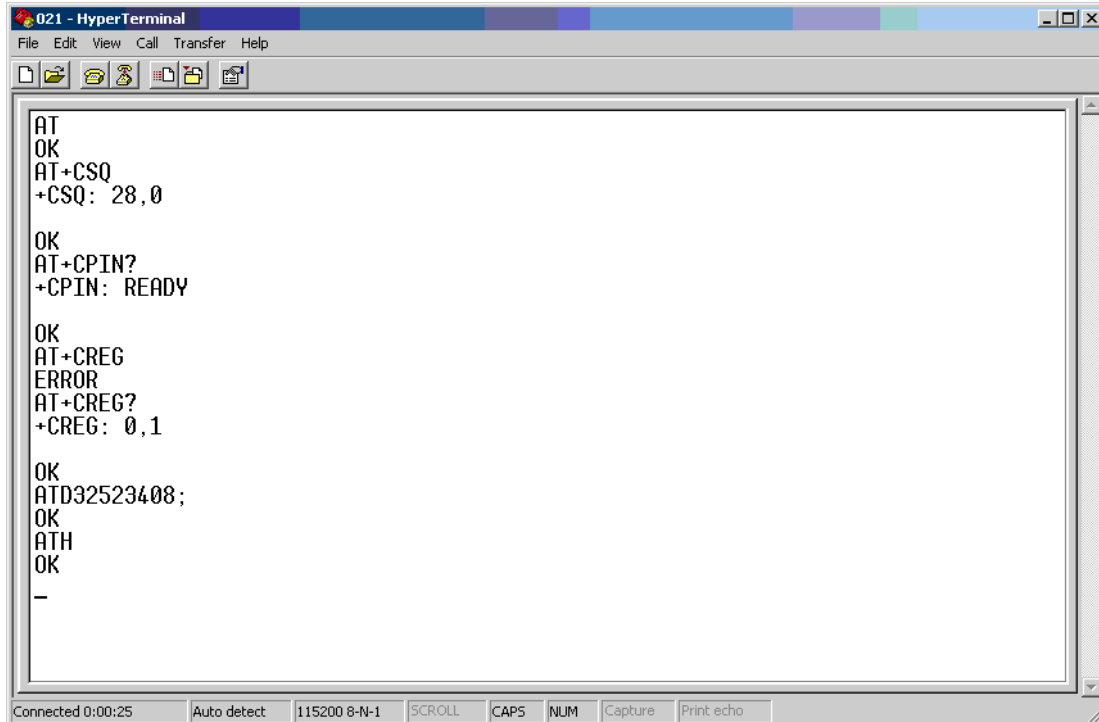
a) Connect the module





Click the 'call' icon.

- b) Typing the AT command. When module is powered on with autobauding enabled, user must firstly send 'AT' to synchronize the baud rate. The default setting of the module is autobauding.
- c) Use AT command to make a call.



021 - HyperTerminal

File Edit View Call Transfer Help

```

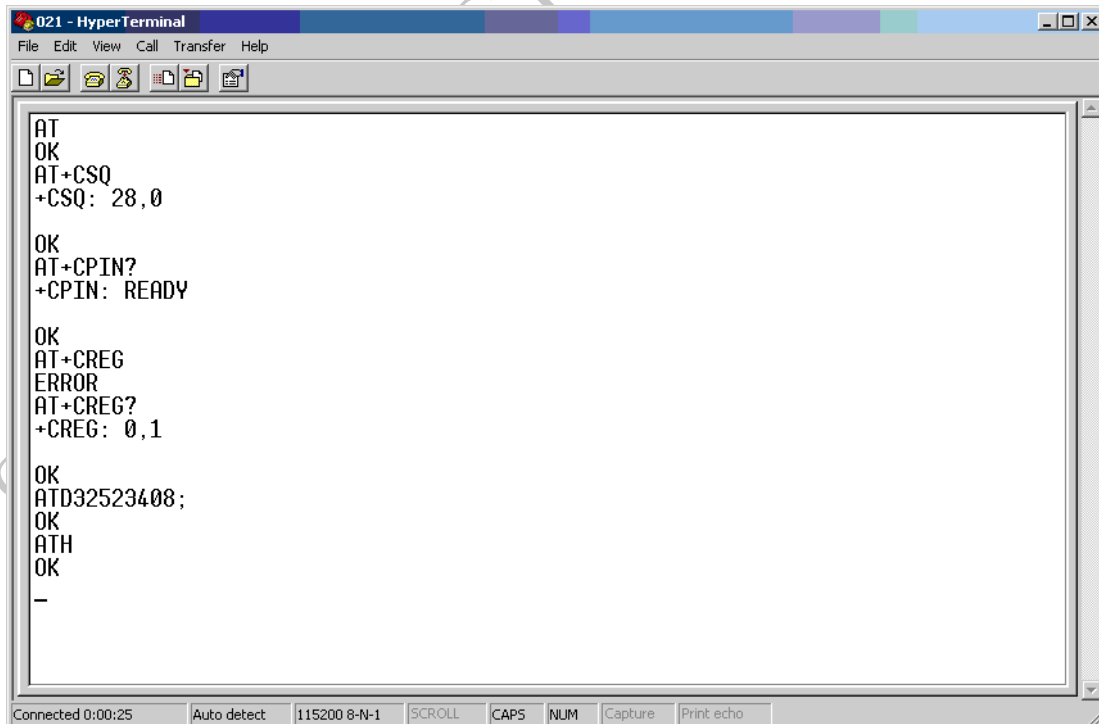
AT
OK
AT+CSQ
+CSQ: 28,0

OK
AT+CPIN?
+CPIN: READY

OK
AT+CREG
ERROR
AT+CREG?
+CREG: 0,1

OK
ATD32523408;
OK
ATH
OK
-
    
```

Connected 0:00:25 Auto detect 115200 8-N-1 SCROLL CAPS NUM Capture Print echo



021 - HyperTerminal

File Edit View Call Transfer Help

```

AT
OK
AT+CSQ
+CSQ: 28,0

OK
AT+CPIN?
+CPIN: READY

OK
AT+CREG
ERROR
AT+CREG?
+CREG: 0,1

OK
ATD32523408;
OK
ATH
OK
-
    
```

Connected 0:00:25 Auto detect 115200 8-N-1 SCROLL CAPS NUM Capture Print echo

## 4.4 Software Upgrade

Customer could upgrade module's firmware through USB or UART interface.

### 1) Upgrade module's firmware through USB port

- Keep S101, S102 and S105 at 'OFF' state, connect the Module-TE to the 60pins connector on SIM900 EVB;
- Plug in 5V DC adapter to EVB, switch S105 to 'ON' state; keep S101 and S102 at 'OFF' state;
- Connect SIM800H/L-TE module to pc through USB cable;
- Insert the USB will be prompted to install the driver for the first time;
- Open the upgrade tool, click "Start All" button;
- Again insert the USB, the upgrade tool will automatically enter the upgrade process;

*Note : Must be properly installed MTK chip driver.*

### 2) Upgrade module's firmware through UART port

- Keep S101, S102 and S105 at 'OFF' state, connect the Module-TE to the 60pins connector on SIM900 EVB;
- Plug in 5V DC adapter to EVB;
- Connect EVB MAIN UART port and the PC USB port through the USB-to-RS232 cable;
- Open the upgrade tool, click 'Start All' button after configuration options
- Switch S105 and S102 to 'On' state, the upgrade tool will automatically enter the upgrade process.

**Contact us:**

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