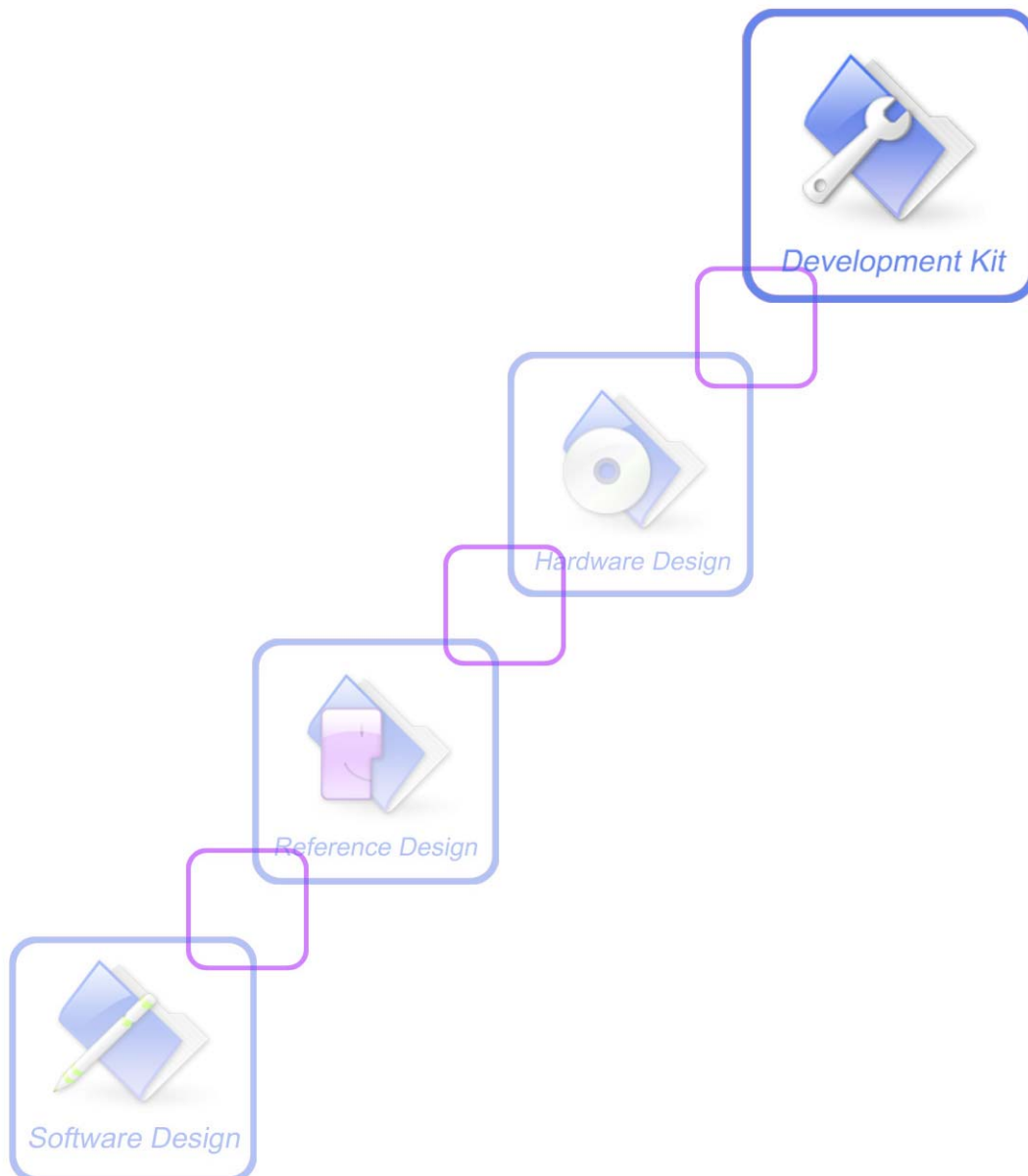




# Development Kit Manual

## SIM900-EVB\_UGD\_V1.01



|                             |                       |
|-----------------------------|-----------------------|
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## Version History

| Data       | Version | Description of change | Author |
|------------|---------|-----------------------|--------|
| 2009-12-08 | 1.01    | Origin                | Lee    |
|            |         |                       |        |
|            |         |                       |        |

## SCOPE

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. (for FCC)

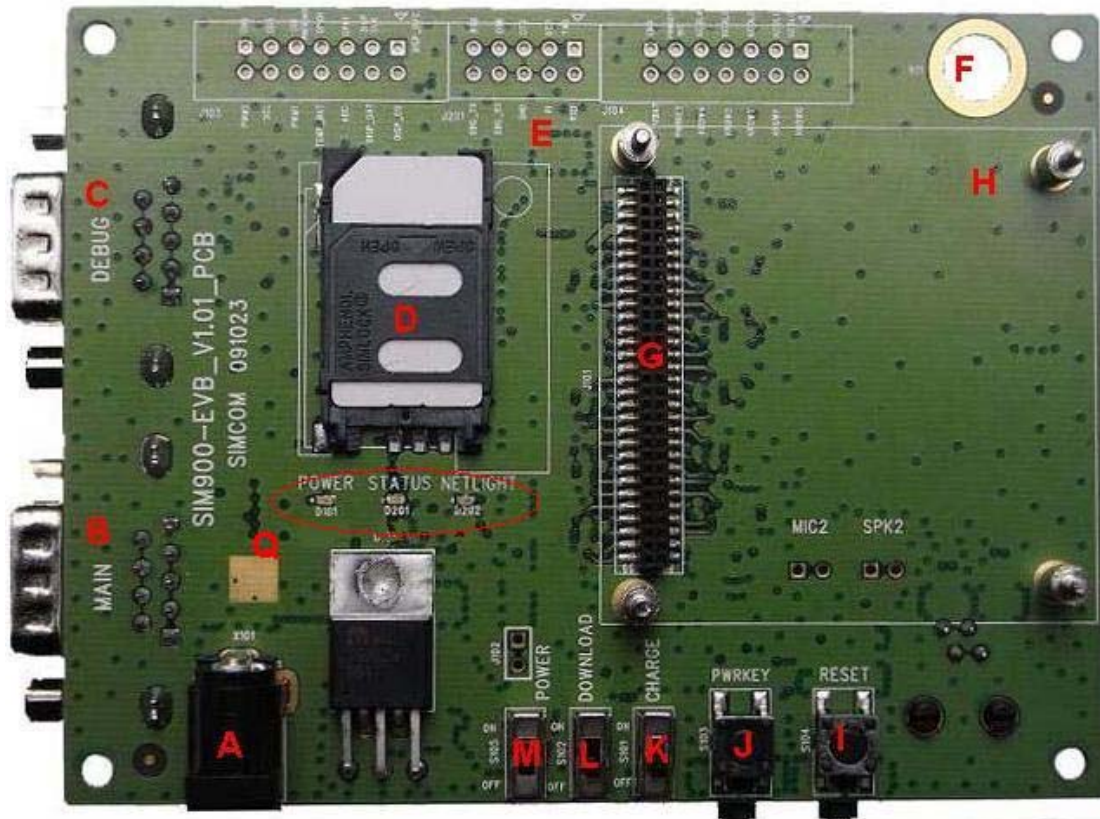
Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. (FOR IC)

This document gives the usage of SIM900 EVB and SIM900A EVB, user can get useful info about the SIM900 EVB and SIM900A EVB quickly through this document.

This document takes SIM900 EVB as an example.

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

# 1. SIM900 EVB



**Figure 1: EVB TOP view**



**Figure 2: EVB BOTTOM view**

- A: Source adapter interface
- B: MAIN serial port for downloading, AT command transmitting, data exchanging
- C: DEBUG serial port
- D: SIM card interface
- E: Test point interface
- F: Antenna fix hole
- G: SIM900-TE with SIM900 module interface
- H: Module fix hole
- I: Reset key ( reset the module )
- J: Power key ( module ON/OFF control )
- K: Charge switch ( charge ON/OFF control )
- L: Download switch ( download control )
- M: Power switch ( power ON/OFF control )
- N: Headphones interface
- O: Headset interface
- P: Line in interface
- Q: Status light



## 2. EVB accessory

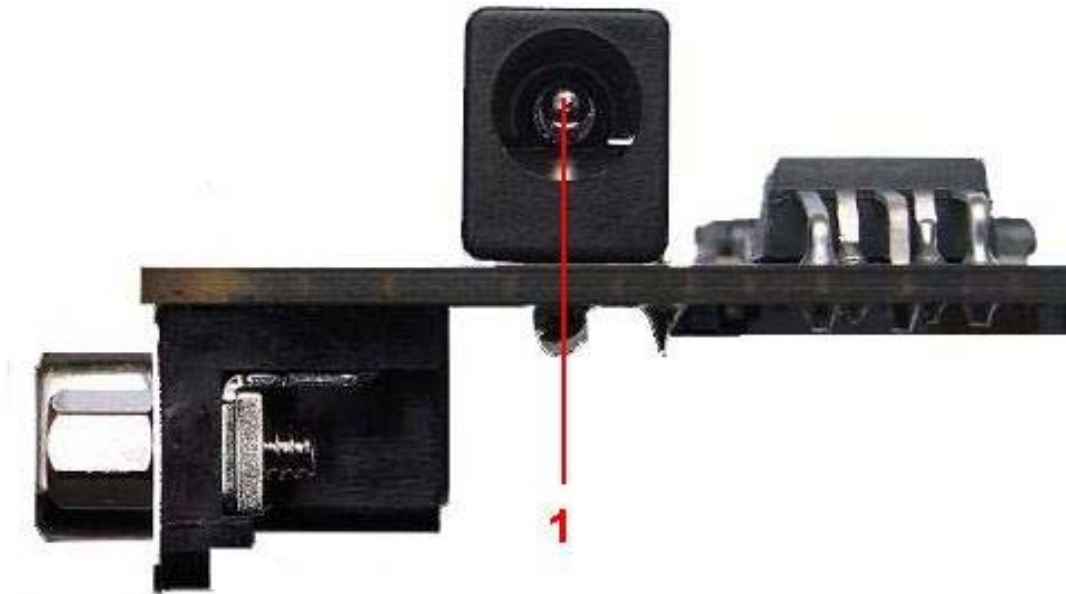


**Figure 3: EVB accessory**

- A: antenna
- B: antenna transmit line
- C: 5V DC source adapter
- D: serial port line

## 3. Accessory Interface

### 3.1 Power Interface

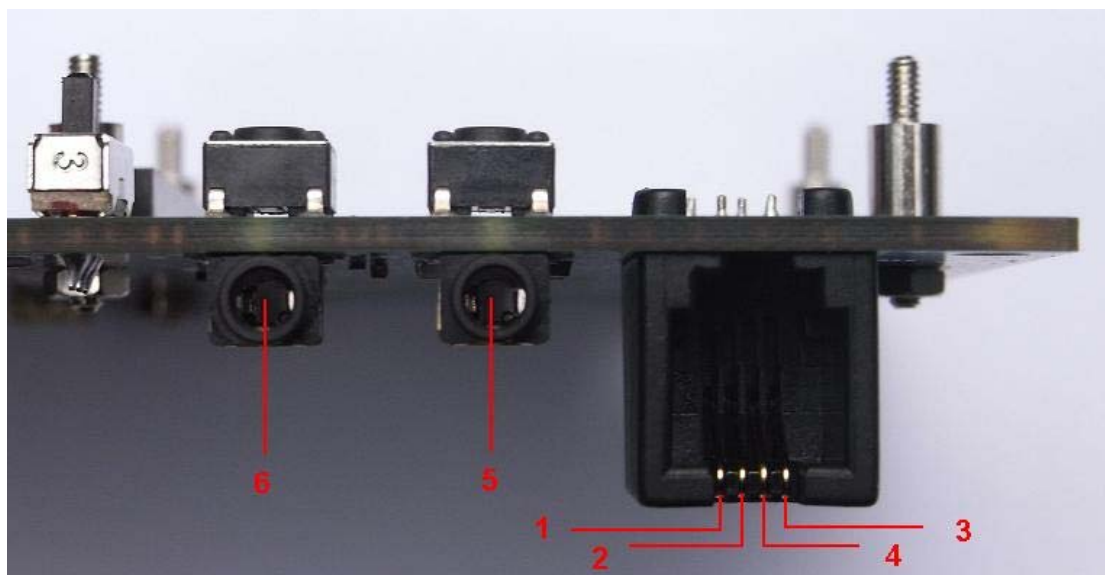


**Figure 4: Power Interface**

| Pin | Signal        | I/O | Description             |
|-----|---------------|-----|-------------------------|
| 1   | Adapter input | I   | 5V/2.5A DC source input |



## 3.2 Audio Interface



**Figure 5: 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  |

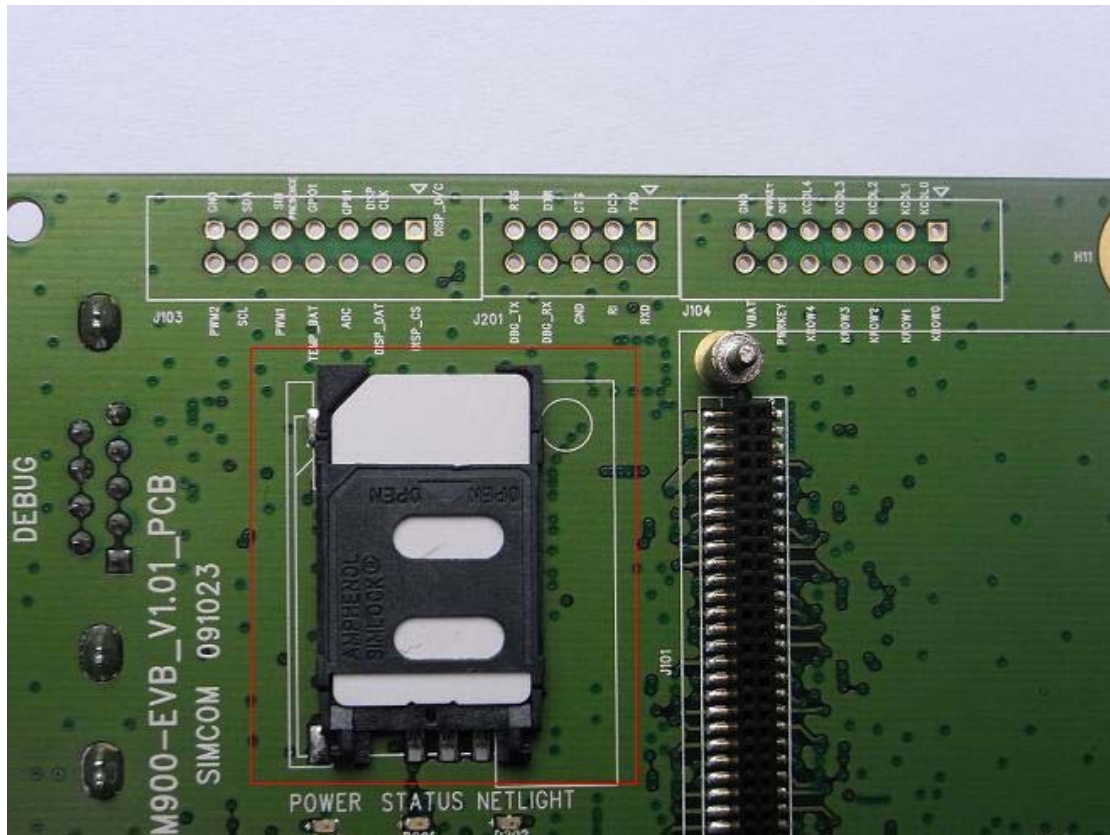
### Earphone interface:

| Pin | Signal      | Input/Output | Description                         |
|-----|-------------|--------------|-------------------------------------|
| 5   | MIC2P&SPK2P | I/O          | Auxiliary positive input and output |

### Line in interface:

| Pin | Signal      | Input/Output | Description    |
|-----|-------------|--------------|----------------|
| 6   | Line in R/L | I/O          | Line in signal |

### 3.3 SIM card interface



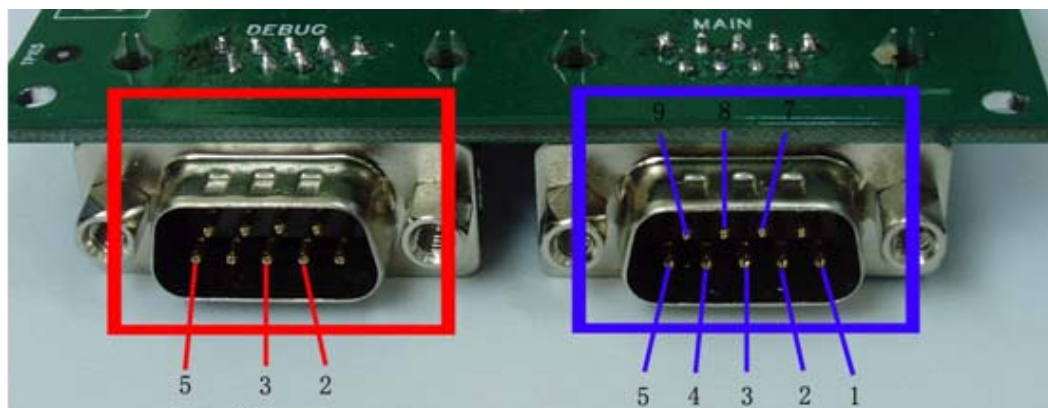
**Figure 6: SIM card interface**

### 3.4 Antenna Interface



**Figure 7: Antenna Interface**

### 3.5 RS232 Interface



**Figure 8: Serial Ports**

Serial Port 1——MAIN Interface

Serial Port 2——DEGUG Interface

#### Main Interface:

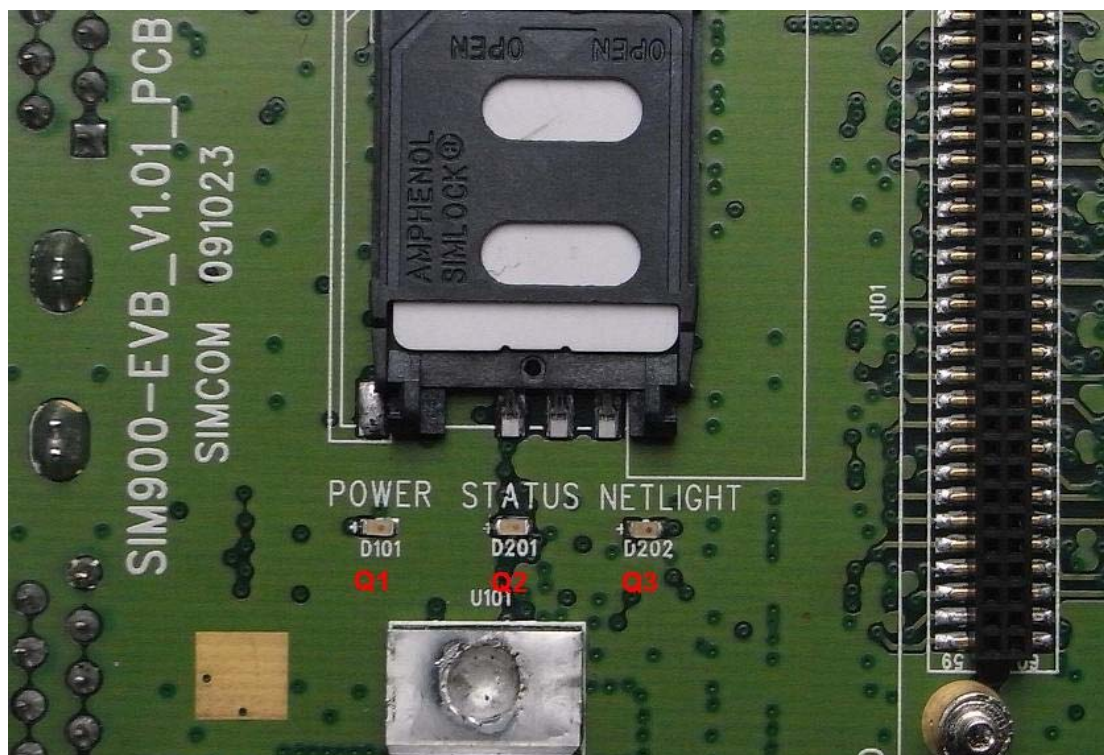
| Pin | Signal | I/O | Description            |
|-----|--------|-----|------------------------|
| 1   | DCD    | O   | Data carrier detection |
| 2   | TXD    | O   | Transmit data          |
| 3   | RXD    | I   | Receive data           |
| 4   | DTR    | I   | Data Terminal Ready    |
| 5   | GND    |     | 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           |



### 3.6 Operating Status LED

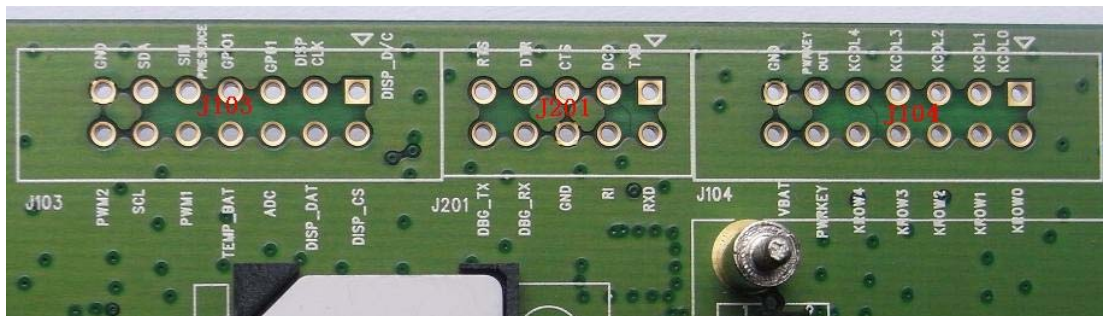


**Figure 9: StatusLED**

Working state of status LED as list:

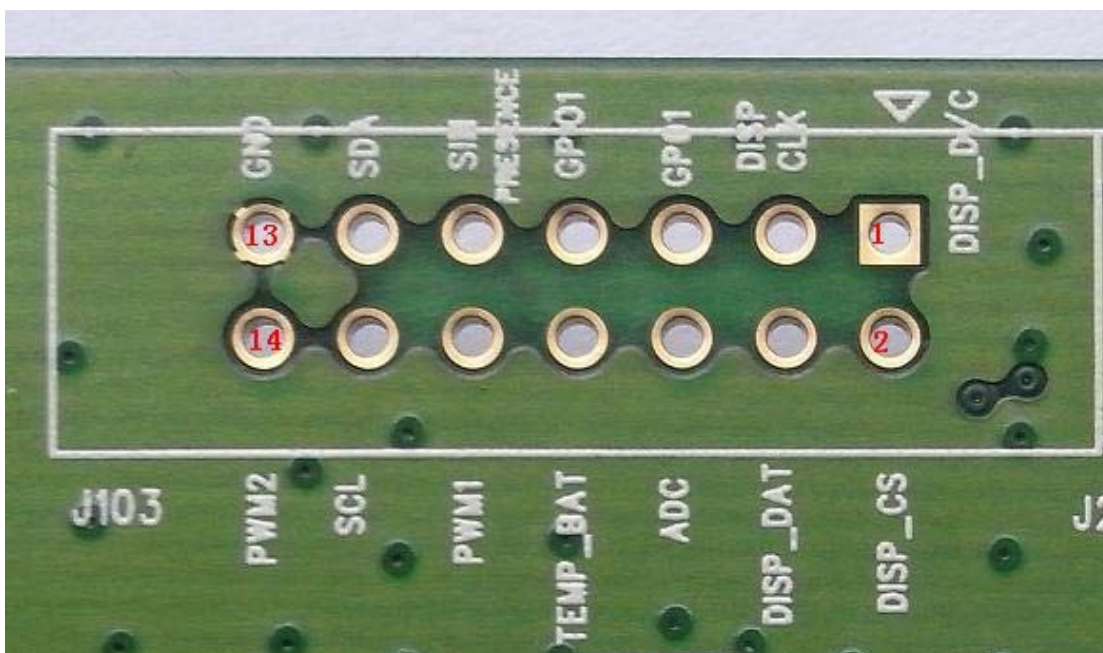
| Name | Description               | STATUS  |
|------|---------------------------|---|
| Q1   | VBAT ON/OFF indicator     | Bright: VBAT ON;<br>Extinct: VBAT OFF   |
| Q2   | GSM part status indicator | Bright: Module runs normally<br>Extinct: System is powered down or module runs unconventionally |
| Q3   | GSM_NET status indicator  | Blinking at a certain frequency according various GSM net status                                |

## 4. Test Interface



**Figure 10: Test interface overview**

### 4.1 J103



**Figure 11: J103 Interface**

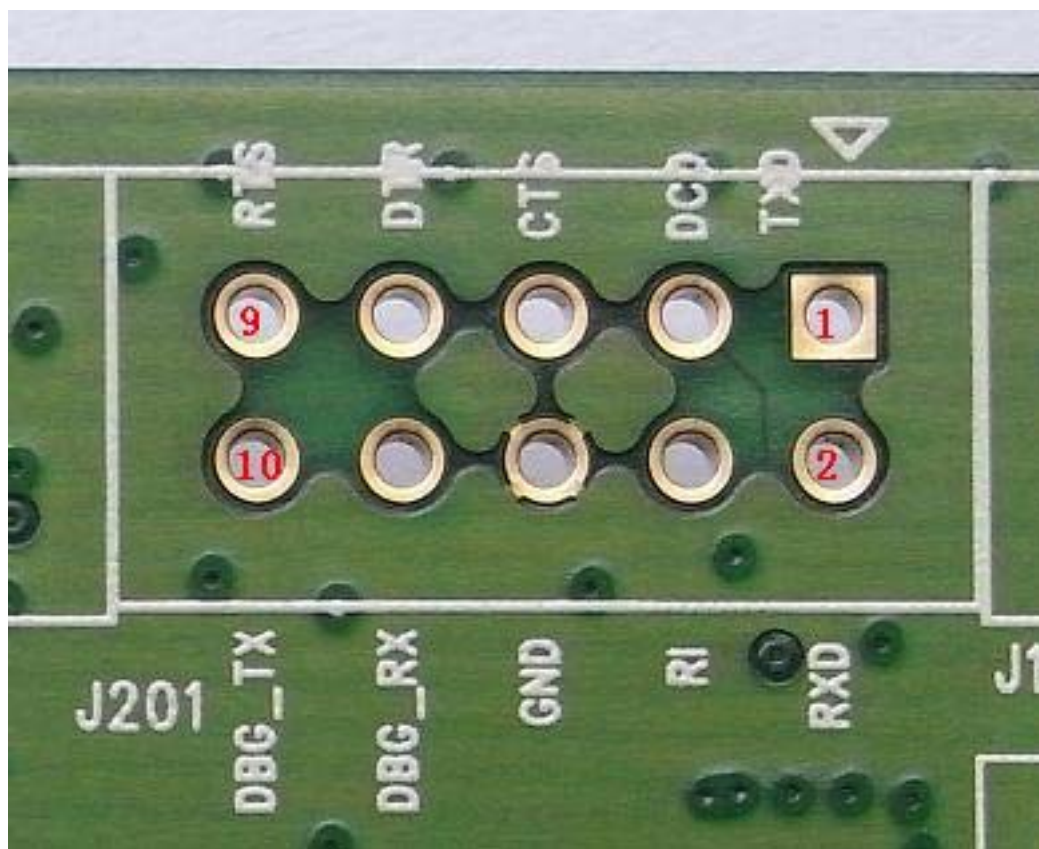
**J103 Interface Pin List:**

| Pin | Signal   | I/O | Description                    |
|-----|----------|-----|--------------------------------|
| 1   | DISP_D/C | O   | Display data or address select |
| 2   | DISP_CS  | O   | Display select output          |
| 3   | DISP_CLK | O   | Display clock output           |
| 4   | DISP_DAT | I/O | Display data line              |
| 5   | GP01     | O   | GPO                            |
| 6   | ADC      | I   | ADC IN                         |

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|    |             |       |                  |
|----|-------------|-------|------------------|
| 7  | GPIO1       | I/O   | GPIO             |
| 8  | TEMP_BAT    | I     | ADC input        |
| 9  | SIMPRESENCE | I     | SIM detect input |
| 10 | PWM1        | O     | PWM output       |
| 11 | SDA         | I/O   | I2C BUS DATA     |
| 12 | SCL         | O     | I2C BUS CLOCK    |
| 13 | GND         | POWER | GND              |
| 14 | PWM2        | O     | PWM output       |

## 4.2 J201



**Figure 12: J201 Interface**

**J201 Interface Pin List:**

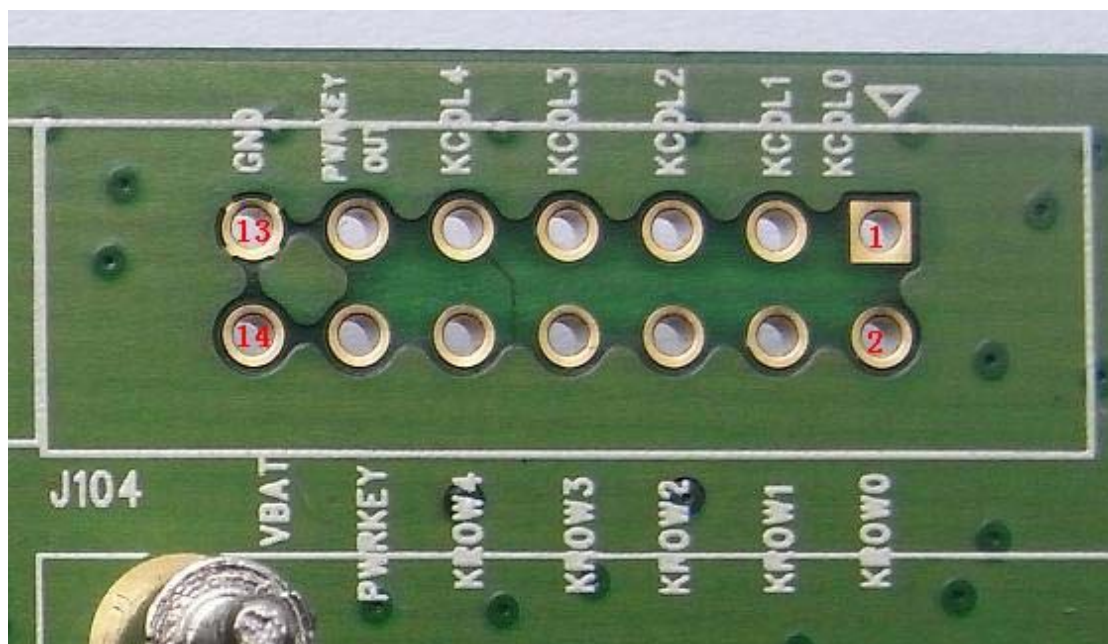
| Pin | Signal | I/O | Description   |
|-----|--------|-----|---------------|
| 1   | TXD    | O   | Transmit data |



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|    |          |   |                        |
|----|----------|---|------------------------|
| 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          |

## 4.3 J104



**Figure 13: J104 Interface**

#### J104 Interface Pin List:

| Pin | Signal | I/O | Description            |
|-----|--------|-----|------------------------|
| 1   | KCOL0  |     | Keypad array interface |
| 2   | KROW0  | I   |                        |
| 3   | KCOL1  |     |                        |
| 4   | KROW1  |     |                        |
| 5   | KCOL2  |     |                        |
| 6   | KROW2  |     |                        |

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|    |            |       |               |
|----|------------|-------|---------------|
| 7  | KCOL3      |       |               |
| 8  | KROW3      |       |               |
| 9  | KCOL4      |       |               |
| 10 | KROW4      |       |               |
| 11 | PWRKEY_OUT | O     | POWER KEY OUT |
| 12 | PWRKEY     | I     | POWER KEY IN  |
| 13 | GND        | POWER | GND           |
| 14 | VBAT       | POWER | POWER         |

## 5. EVB and accessory equipment

At normal circumstance, the EVB and its accessory are equipped as the Figure 14



**Figure 14: EVB and accessory equipment**

## 6. Illustration:

### 6.1 Running:

- (1) Connect the SIM900-TE with SIM900 module to the 60pins connector on SIM900 EVB, inserting 5V direct current source adapter, switching the S101,S102 switch on **off** state, S105 switch on **ON** state;
- (2) Press the PWRKEY for about 1 second, and then SIM900 module begins running.

You can see the light Q3 on the EVB flashing at a certain frequency. By the state, you can judge whether the EVB and SIM900 can run or not. No function and test can be executed when we have not connected necessary accessories.

### 6.2 Connecting Net and calling

- (1) connect the serial port line to the MAIN serial port, open the HyperTerminal(AT command windows) on your Personal computer, the location of the HyperTerminal in windows2000 is START → accessory → communication → HyperTerminal. Set correct Baud Rate and COM number. The Baud Rate of SIM900 is 115200, and the COM number based on which USB port your serial port line insert in, you should select such as COM3 or COM4 etc.
- (2) Connect the antenna to the SIM900-TE with SIM900 module using an antenna transmit line, insert SIM card into the SIM card interface, insert headphones or headset into its interface.
- (3) Act on the step of **running** which mentioned above, power on the system, typing the AT command in the HyperTerminal, and then the SIM900 module will execute its corresponding function.

### 6.3 Downloading

Connect the serial port line to the **MAIN** serial port, connect the direct current source adapter, run the download program and press the **START** key, then switch the S105 switch on **ON** state, S102 switch on **ON** state, then EVB provide the function of downloading.

### 6.4 Turns off

Turn off SIM900 module: press the PWRKEY for about 2 second, SIM900 module will be turned off.

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