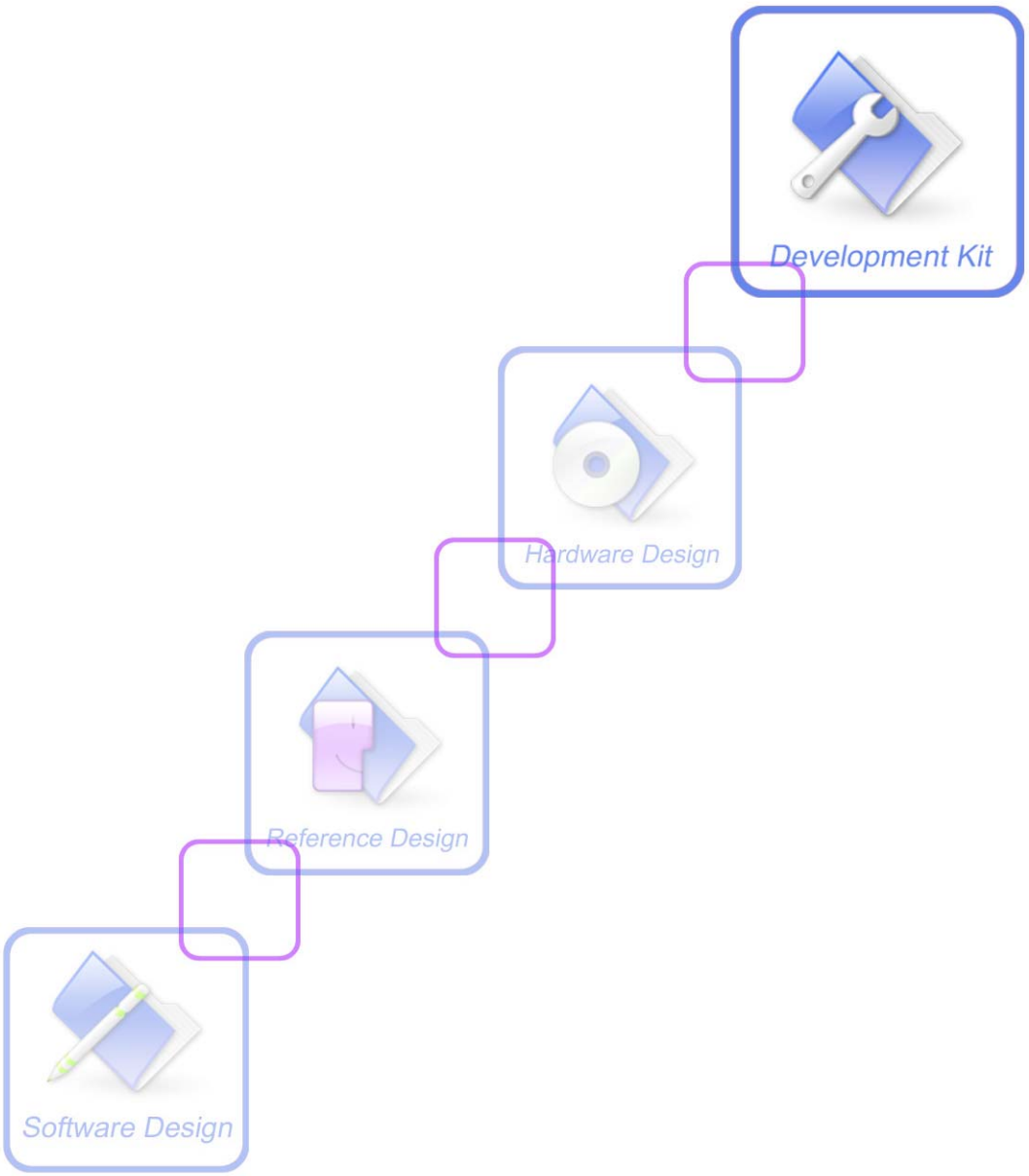
Development Kit Manual

SIM345-EVB_UGD_V1.02



Document Title:	SIM345 EVB User Guide
Version:	1.02
Date:	2008-2-15
Status:	Release
Document Control ID:	SIM345-EVB_UGD_V1.02

General Notes

SIMCom offers this information as a service to its customers, to support application and engineering efforts that use the products designed by SIMCom. The information provided is based upon requirements specifically provided to SIMCom by the customers. SIMCom has not undertaken any independent search for additional relevant information, including any information that may be in the customer's possession. Furthermore, system validation of this product designed by SIMCom within a larger electronic system remains the responsibility of the customer or the customer's system integrator. All specifications supplied herein are subject to change.

Copyright

FCC Caution:

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

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;

(2) This device must accept any interference received, including interference that may cause undesired operation.

Contents

Figure Index

SCOPE

This document give the usage of SIM345 EVB, user can get useful info about the SIM345 EVB quickly through this document.

The SIM345 only supports 850MHz/1900MHz functions.

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

1 SIM345 EVB

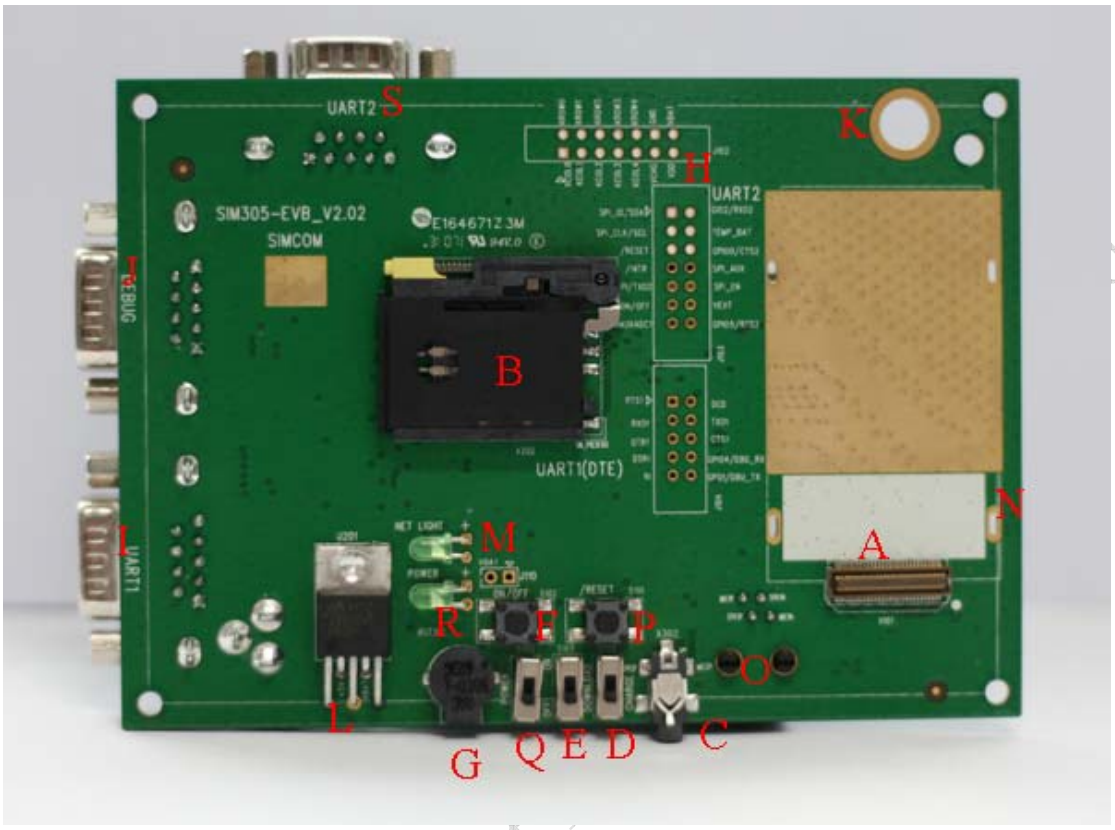


Figure 1: EVB TOP view

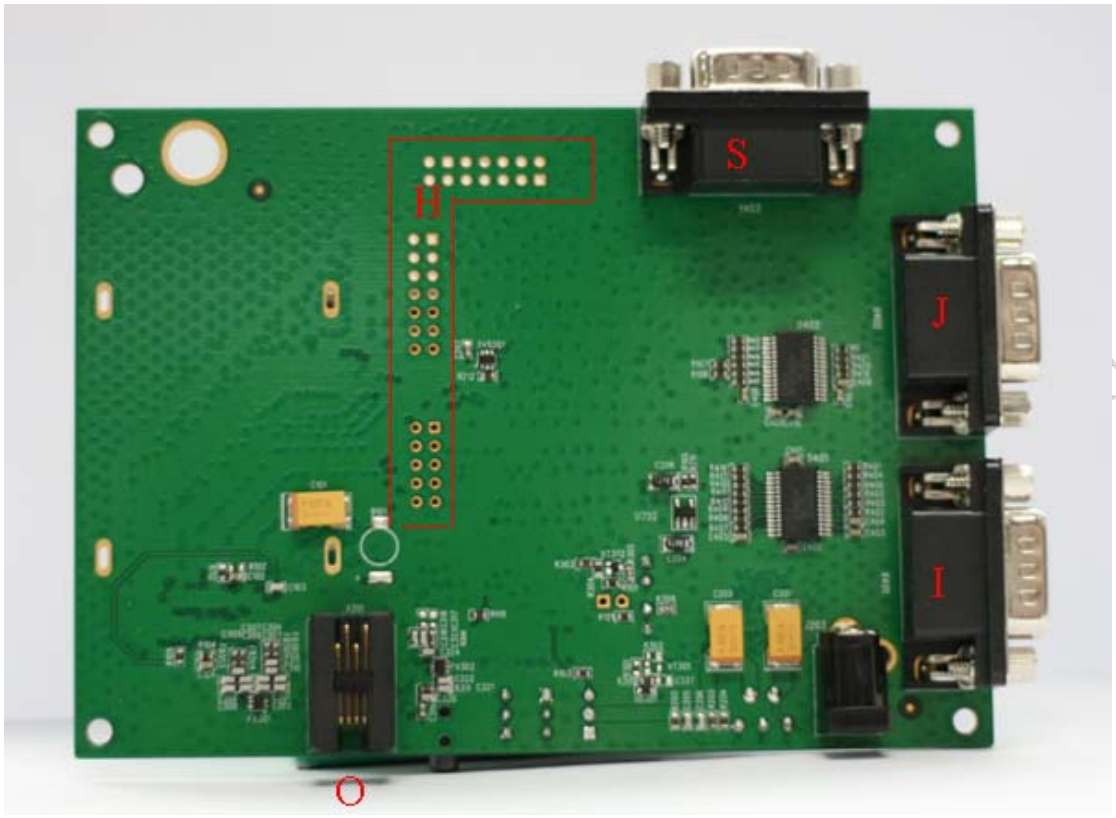


Figure 2: EVB BOTTOM view

A: SIM345 module interface
B: SIM card interface
C: Headset interface
D: Charge switch, switch on or off charging function
E: Download switch, turn on or off download function
F: ON/OFF key, turn on or turn off SIM345
G: Buzzer
H: Expand port, such as keypad port, main serial port, SPI port
I: Main serial port UART1 for downloading, AT command transmitting, data exchanging
J: General Purpose output or input ports for customers' application, but can be multiplexed with another auxiliary serial port for internal ONLY
K: Hole for fixing the antenna
L: Source adapter interface
M: FLASH LED light
N: Hole for fixing the SIM345
O: Headphones interface
P: Reset key, reset module for exigency
Q: VBATT switch, switch the voltage source from the adaptor or external battery
S: Auxiliary serial port UART2

2 EVB accessory

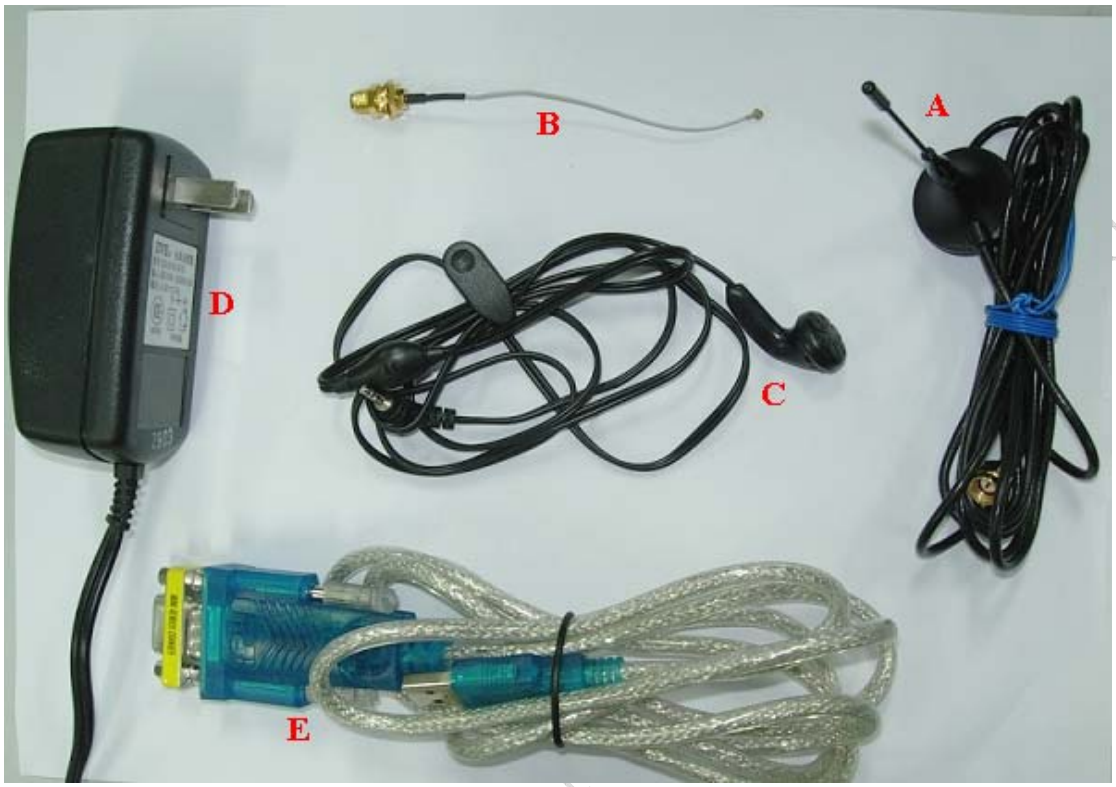


Figure 3: EVB accessory

A: Antenna
B: Antenna transmit line
C: Headset
D: 5V DC source adapter
E: USB to serial port line

3 Accessory Interface

3.1 Power Interface

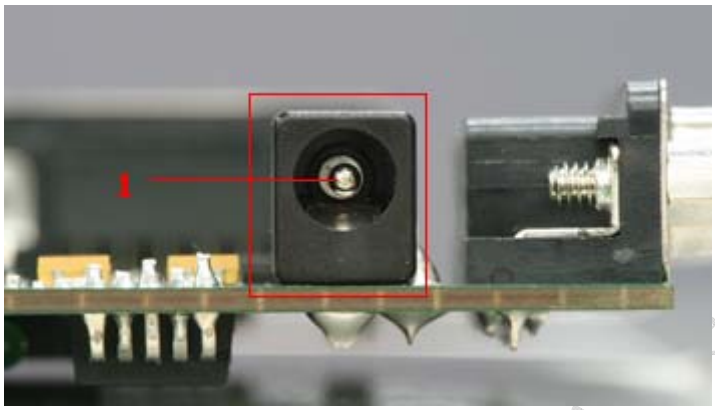


Figure 4: Power Interface

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

3.2 Audio Interface

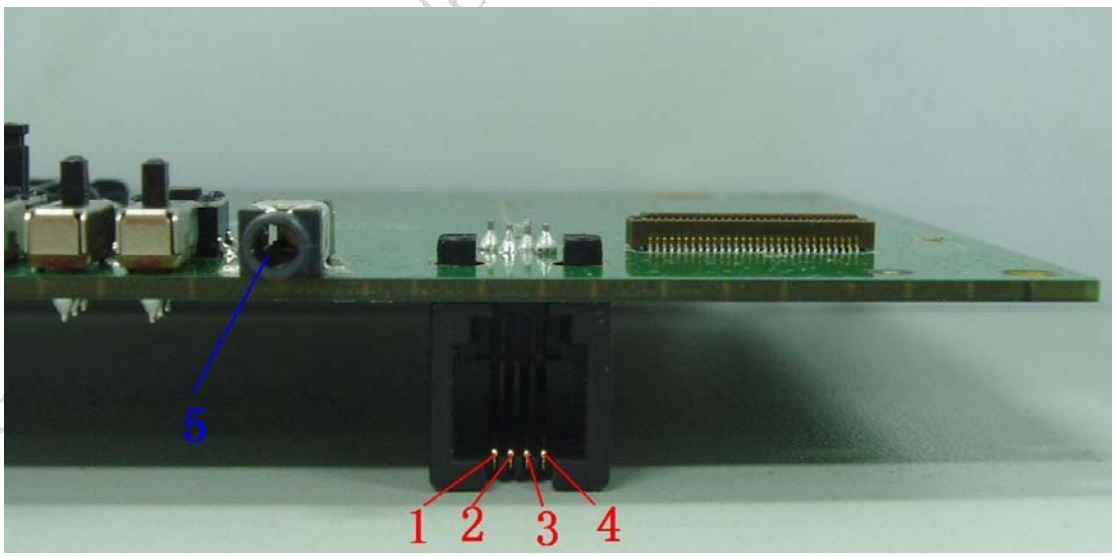


Figure 5: Audio Interface

Headset interface:

Pin	Signal	I/O	Description
1	MIC2P	I	Positive microphone input
2	SPK2P	O	Positive speak output
3	SPK2N	O	Negative speak output
4	MIC2N	I	Negative microphone input

Earphone interface:

Pin	Signal	Input/Output	Description
5	MIC1P&SPK1P	I/O	Auxiliary positive input and output

3.3 SIM card interface

Figure 6: SIM card interface

3.4 Antenna Interface

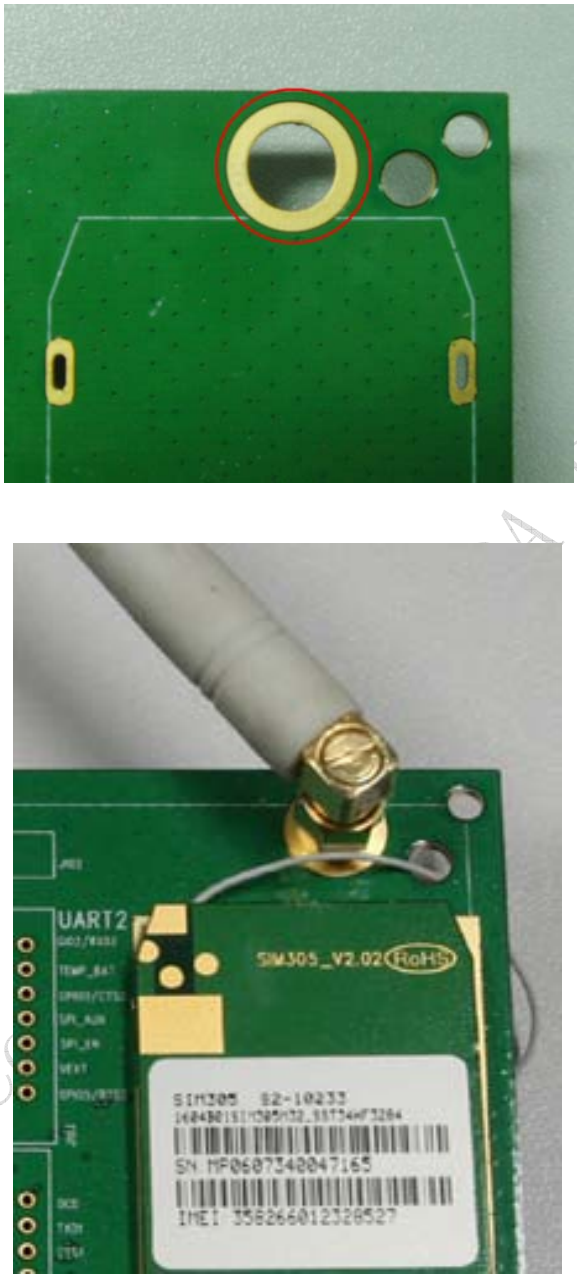


Figure 7: Antenna Interface

3.5 RS232 Interface

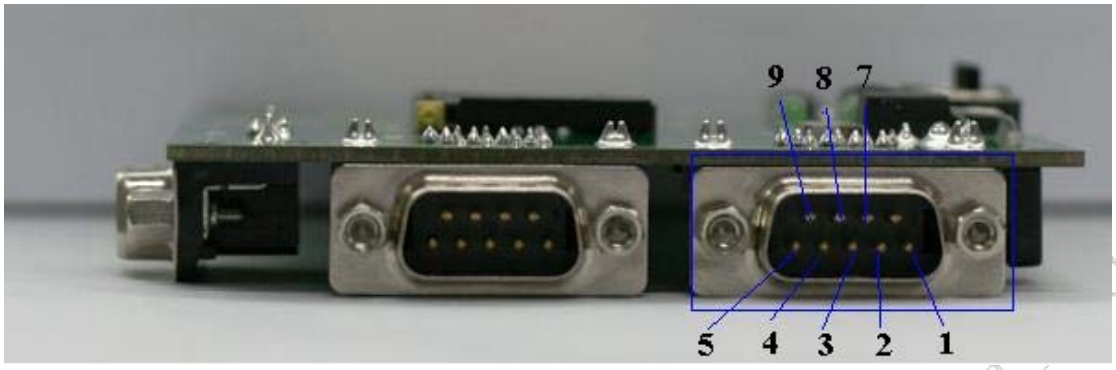


Figure 8: UART1 Serial Port

Main port UART1——A full functional seven-wires serial port
Auxiliary serial port UART2——An auxiliary three-wires serial interface

Main serial port（UART1）:

Pin	Signal	I/O	Description
1	DCD	O	Data carrier detection
2	TXD1	O	Transmit data
3	RXD1	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

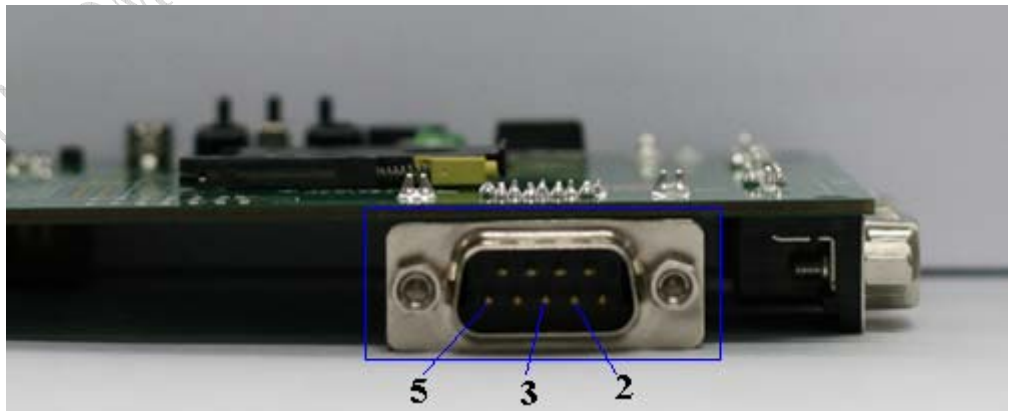


Figure 9: UART2 Serial Port

Auxiliary serial port (UART2):

Pin	Signal	I/O	Description
2	RXD2	O	Receive data
3	TXD2	I	Transmit data
5	GND		GND

3.6 Operating Status LED

Pin	Signal	Description
1	Flash LED	Network status indication LED
2	Power light	VBATT power supply status indication

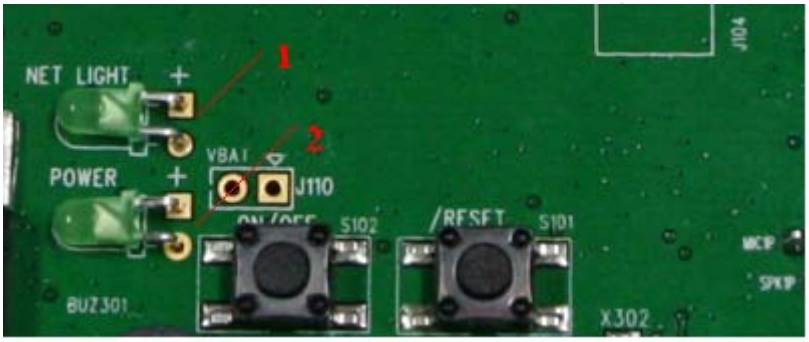


Figure 10: Flash LED

Working state of Flash LED as list:

State	Module function
Off	Module is not running
Permanent on	Module does not find the network
60ms On/ 3000ms +50%Off	Module find the network
60ms On/ 852ms +50% Off	GPRS communication

4 Test Interface

Figure 11: Test interface overview

4.1 Serial Interface

J104—UART1 serial port

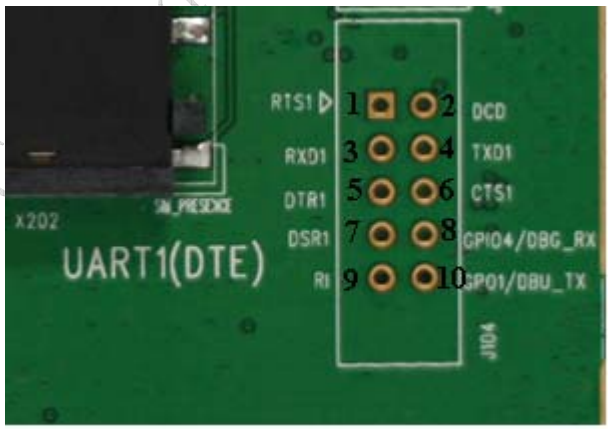


Figure 12: J1 Interface

RS232 Interface Pin List:

Pin	Signal	I/O	Description
1	RTS	I	Request to Send
2	DCD	O	Data carrier detection

3	RXD1	O	Receive data
4	TXD1	I	Transmit data
5	DTR	I	Data Terminal Ready
6	CTS	O	Clear to Send
7	DSR	I	
8	GPIO4	I/O	Transmit or receive data
9	RI	O	Ring Indicator
10	GPO1	O	Transmit data

4.2 J102---KEY & POWER

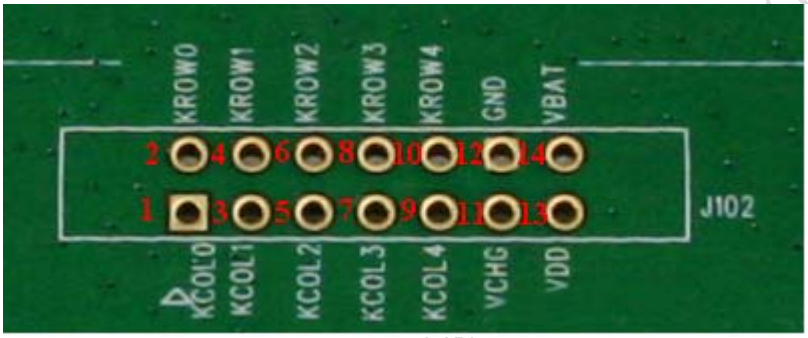


Figure 13: J102 Interface

KEY & POWER Pin List

Pin	Signal	I/O	Description
1	COL0	O	Keypad array interface
2	ROW0	I	
3	COL1	O	
4	ROW1	I	
5	COL 2	O	
6	ROW2	I	
7	COL 3	O	
8	ROW3	I	
9	COL 4	O	
10	ROW4	I	
11	CHG_IN		
12	GND	I	
13	VDD		
14	VBATT	I	

4.3 J103---GPIO

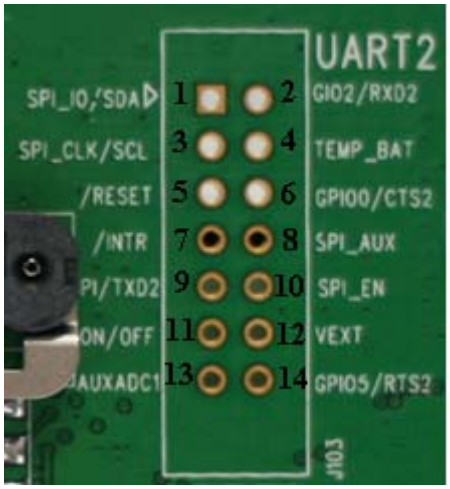


Figure 14: J3 Interface

SPI & I/O Interface Pin List:

Pin	Signal	I/O	Description
1	SPI_IO/ SDA	I/O	IIC interface
2	GPO2	O	General Purpose Output Port
3	SPI_CLK/ SCL	O	IIC interface
4	TEMP_BAT	I	ADC input for battery temperature measurement
5	/RST	I	Reset module for emergency
6	GPIO0	I/O	General Purpose Input/Output Port
7	/INTR	I	External interrupt input
8	GPO0 / SPI_AUX	O	General Purpose Output Port
9	GPI	I	General Purpose Input
10	SPI_EN/ GPO3	O	General Purpose Output Port
11	ON/OFF	I	To switch on or off the module
12	VCC	O	Output digital power supply
13	AUXV0	I	Auxiliary ADC input
14	GPIO5	I/O	General Purpose Input/Output Port

5 EVB and accessory equipment

At normal circumstance, the EVB and its accessory are equipped as the Figure 15

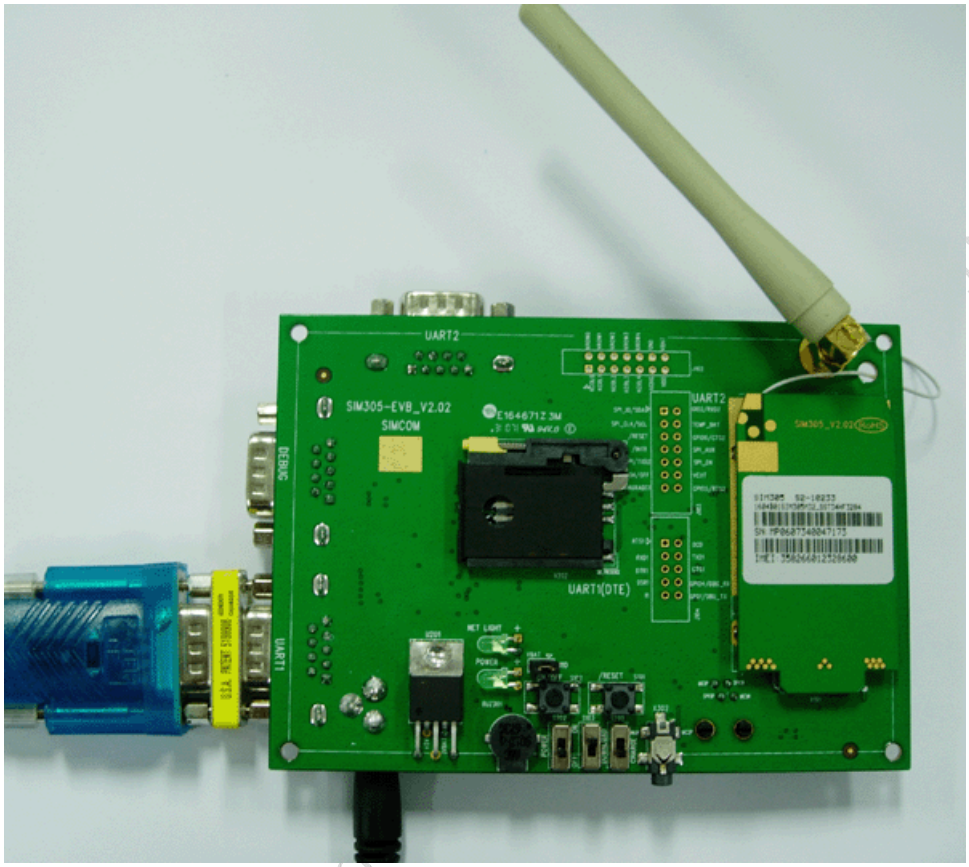


Figure 15: EVB and accessory equipment

6 Illustration

6.1 Running

(1) Connect the SIM345 module to the 60 pins connector on SIM345 EVB, inserting 5V direct current source adapter, switching the S103 switch on off state, S202 switch on ON state;
(2) Press the ON/OFF for about 2 second, and then SIM345 module begins running.

You can see the light on the EVB flashing at a certain frequency. By the state, you can judge whether the EVB and SIM345 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 SIM345 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 SIM345 module using an antenna transmit line, insert SIM card into the SIM card interface, and 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 SIM345 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 POWER switch on ON state, DOWNLOAD switch on ON state, and then EVB provide the function of downloading.

6.4 Turns off

Turn off SIM345 module: press the ON/OFF for about 2 second, SIM345 module will be turned off.

●**RF exposure requirements**

To allow compliance with RF exposure requirements，the SIM345's maximum output power is 33dBm in GSM850/GSM900 band，or 30dBm in DCS1800/PCS1900 band，and the maximum antenna gain is 3dBi，and the minimum cable loss is 0.5db.

●**The Antenna Parameter of SIM345**

	GSM850/GSM900	DCS1800/PCS1900
VSWR(Max.)Operation band	≤2.5	≤2.5
VSWR(Min.)Outside the operation band	≥3	≥3
GAIN(Min)(dBi)	>0dBi	> 1dBi
Output Power (dBm)	>30dBm	>27dBm

●The Module's Conducted Reception Characteristic

	GSM850/GSM900	DCS1800/PCS1900
Conducted RX Level @BER<2%(dBm)	-106	-106

●**IMPORTANT NOTE:**

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of about eight inches (20cm) between the radiator and your body.

Contact us:

Shanghai SIMCom Ltd.

Add: SIM Technology Building, No. 700, Yishan Road, Shanghai,P. R. China 200233

Tel: +86 21 5427 8900

Fax: +86 21 5427 6035

URL: www.sim.com