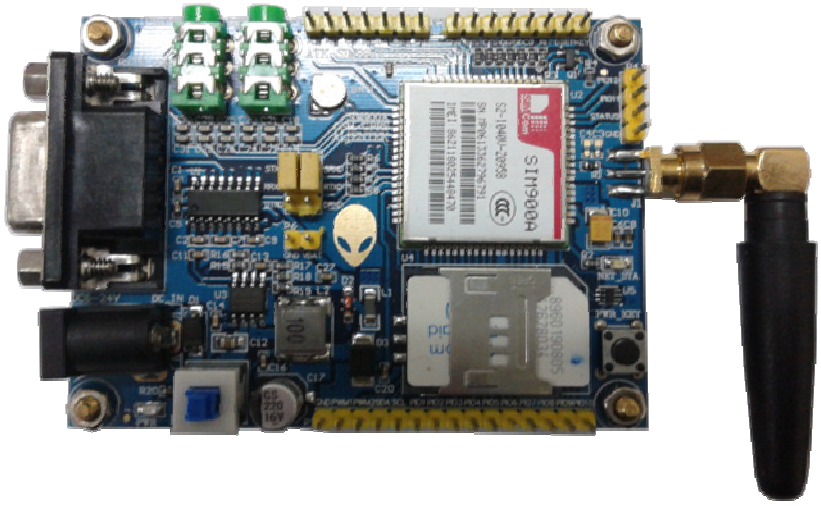
SIM900A GSM/GPRS Module

User Manual



Content

SIM900A GSM/GPRS Module

1. Overview

SIM900A GSM/GPRS Module is a dual-band module that works on frequencies EGSM 900MHZ and DCS1800MHz. It features GPRS multi-slot class 10/8(optional) and supports the GPRS coding schemes CS-1, CS-2, CS-3 and CS-4.

SIM900A is designed with power saving techinique so that current consumption is as low as 1.0mA in sleep mode. It integrates TCP/IP protocol and extended TCP/IP AT Commands which are very useful for data transfer applications.

2. SIM900A Features

Frequency bands	Dual band 900MHz/1800MHz
Transmitting power	Class 4(2W) at EGSM900
	Class 1(1W) at DCS1800
GPRS connectivity	GPRS multi-slot class 10(default)
	GPRS multi-slot class 8(option)
Temperature range	Normal operation: -30°C ~ +80°C
GPRS data	GPRS data downlink transfer: max. 85.6kbps
	GPRS data uplink transfer: max. 42.8kbps
	Coding scheme: CS-1, CS-2, CS-3 and CS-4
	Integrate the TCP/IP protocol
	Support Packet Broadcast Control Channel(PBCCH)
CSD	Support CSD transmission
USSD	Supported
SMS	MT, MO, CB, Text and PDU mode
FAX	Group 3 Class 1

3. Module Feature

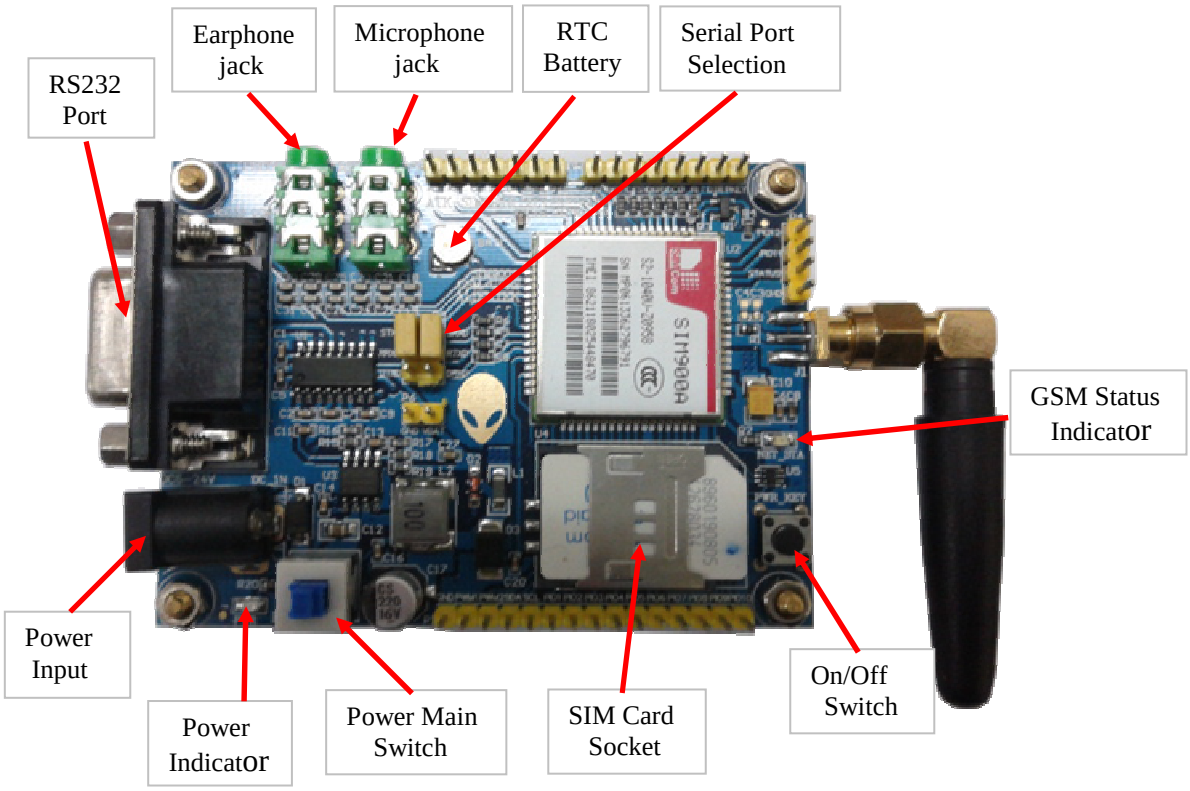
Commnunication Interface	RS232 port and LVTTL port (*1)
	Support AT commands
	Support RTS/CTS hardware flow control
	Support 1200bps ~ 115200bps
	Support debug port
Audio interface	3.5mm phone jack for microphone and earphone
Antenna interface	SMA port
Operating voltage	DC5 ~ 24V
Power consumption	12 ~ 90mA@12V (*2)

*Note 1: For signals STXD/SRXD/DTXD/DRXD/RTS/CTS/DSR/DCD/RI/DTR are compatible to 3.3V/5V.

*Note 2: It shows average current at 12V. During sleep mode, SIM900A consume about 12mA, about 45mA on normal mode and 90mA during GPRS transmission. Take note that the inrush current may reach 740mA@12V for input power.

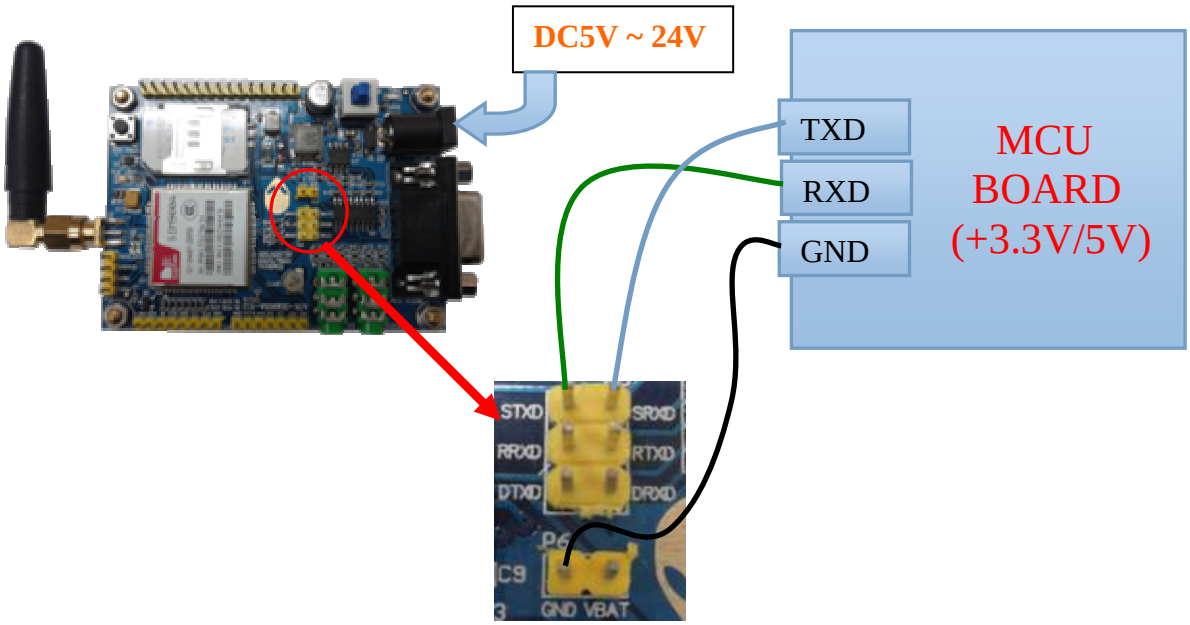
4. How to use

4.1 Hardware



Hardware Items	Description
Power Main Switch	Module's power switch.
Power Input	For power input, support DC5V ~ DC24V
Power Indicator	Indicator for power. LED lit when power main switch is on.
SIM Card Socket	For insert SIM Card
On/Off Switch	Press for 1 second, module will turn-on; press for another 1 second , module will turn-off.
GMS Status Indicator	(i) LED off when module is turn-off. (ii) LED on(64ms)/off(800ms) when GSM not yet register to the network. (iii) LED on(64ms)/off(300ms) when GSM is regiestered to the network.
Serial Port Selection	(i) STXD and SRXD are serial port from SIM900A. LVTTL level (3.3V/5V). (ii) RTXD and RRXD are serial port from RS232 after IC SP3232 level conversion. (iii) DTXD and DRXD are debug port for SIM900A.
Microphone Jack	Connect to microphone during voice call.
Earphone Jack	Connect to earphone during voice call.
RS232 port	Connect to PC through RS232 communication.

4.2 Connect to 3.3V/5V Micro-controller Board



4.3 **Connect to Arduino Uno**

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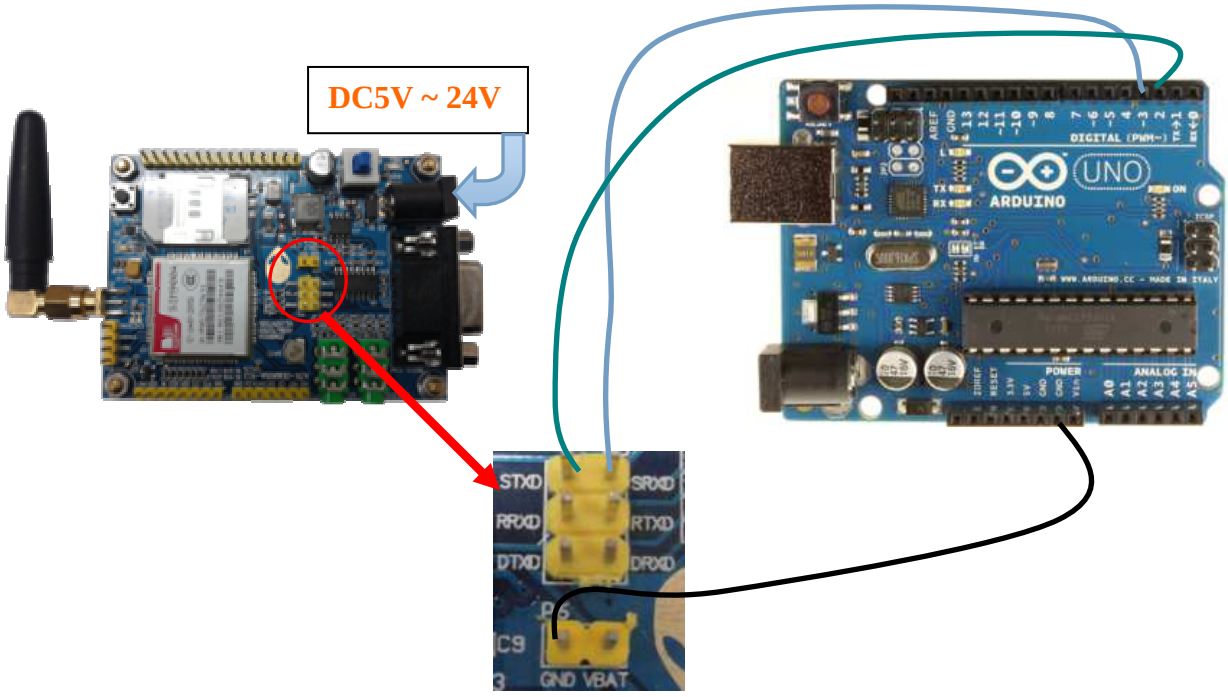


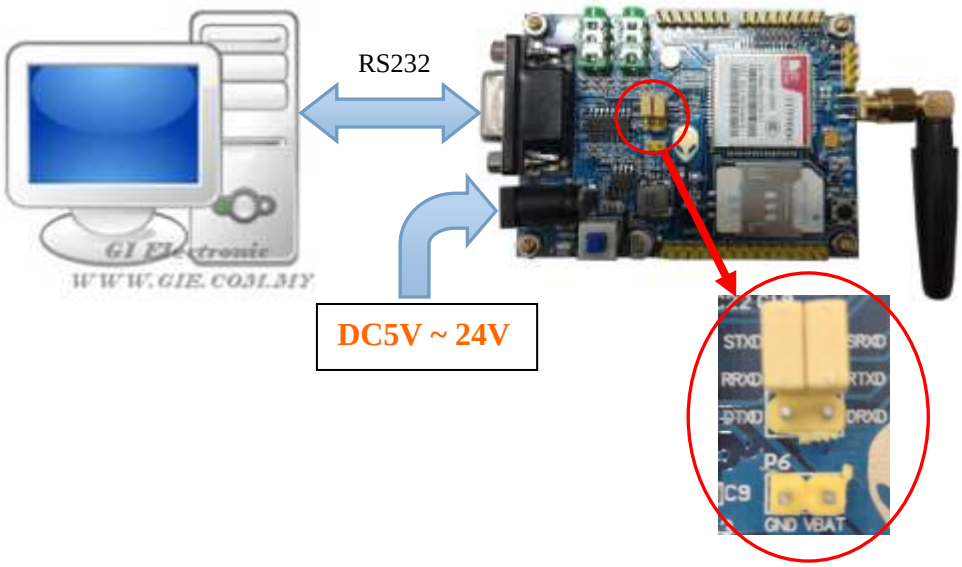
4.3.1 Tutorial

a.) Refer to http://arduino.cc/en/Guide/ArduinoGSMShield

b.) By using Arduino GSM library, communication between the SIM900A module and Arduino Uno is handled by the software serial library on pins 2 and 3.

c.) Connect Uno pin2 to STXD; pin3 to SRXD and GND to GND.

4.4 **Connect to PC**



5. **Start-up Test**
   a.) Insert SIM Card.
   b.) Make sure two jumpers are installed. (Refer to 4.4)
   c.) Connect the module to the PC through RS232 port.
   d.) Connect power. (DC5V ~ 24V)
   e.) Switch on “Power Main Switch” and then press “On/Off Switch” for 1s.
   f.) GSM status indicator will fast blinking(before register to GSM network) then change to slow blinking when registered to the GMS network.
   g.) Run Hyper Terminal then type “AT”, should get “OK”.

6. **Take Note**
   a.) Only the strings “AT” or “At” (not “aT” or “at”) can be detected when auto-bauding is enable.

7. **Kit Contents**
   a.) SIM900A GSM/GPRS Module x 1

8. **Warranty**
   a.) Product warranty is valid for 3 months.
   b.) Warranty is only applies to manufacturing defect.
   c.) Damage caused by improper use is not cover under warranty.
   d.) Warranty does not cover freight cost for both ways.