

# Arduino SIM900A GSMGPRS Shield



## 1. Overview

The SIM900A GSM/GPRS shield uses the SIM900A 2-band (EGSM900 and DCS1800) GSM/GPRS module, which provides GSM/GPRS function for Arduino main board. With the shield, Arduino enables to send and receive short messages and connect GPRS data for communication.

The switch on the shield can be used to select the SIM900A serial port or the SIM900A debug port for connection. If the

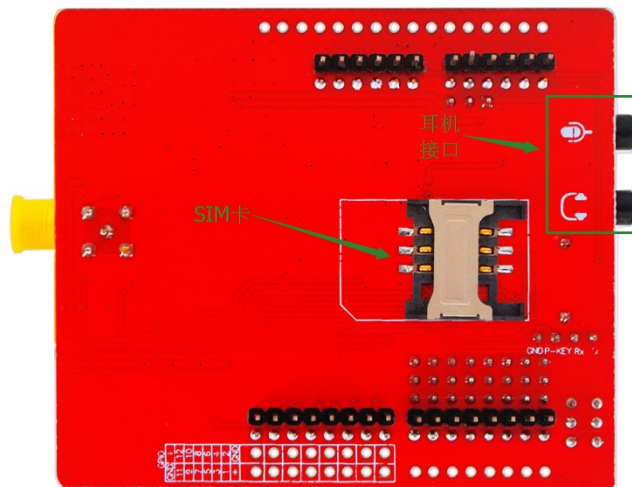
debug port is selected, it must be controlled by the Arduino hardware serial port. The analog serial port is invalid. What' s more, a farad capacitor is provided on the shield to power the RTC of the module.

## **2. Features**

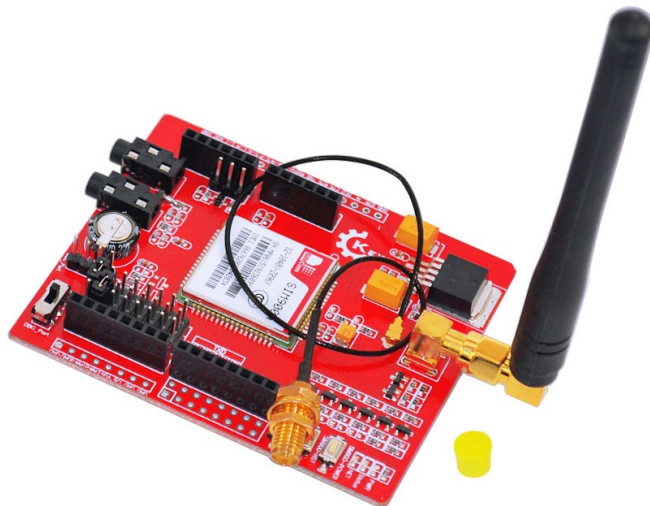
1. Debug toggle switch: you can set the DEBUG port of SIM900A to connect to Arduino or PC via ATMEGA8U2/FT232 on Arduino for debugging.
2. It is compatible with 3.3V and 5V automatic levels, and it can adapt to 3.3V or 5V main boards.
3. It supports other 3.3V platform development boards such as leaf maple and Chipkit.
4. After the SIM900A shield is plugged into the Arduino main board, it must provide a 9V/2A DC power supply, otherwise it may not work properly.
5. 2-band EGSM900 and DCS1800 support Unicom and Mobile 2G cards, except Telecom cards.

### 3. Using Method

1. Connect the SIM card and earphone to the shield.

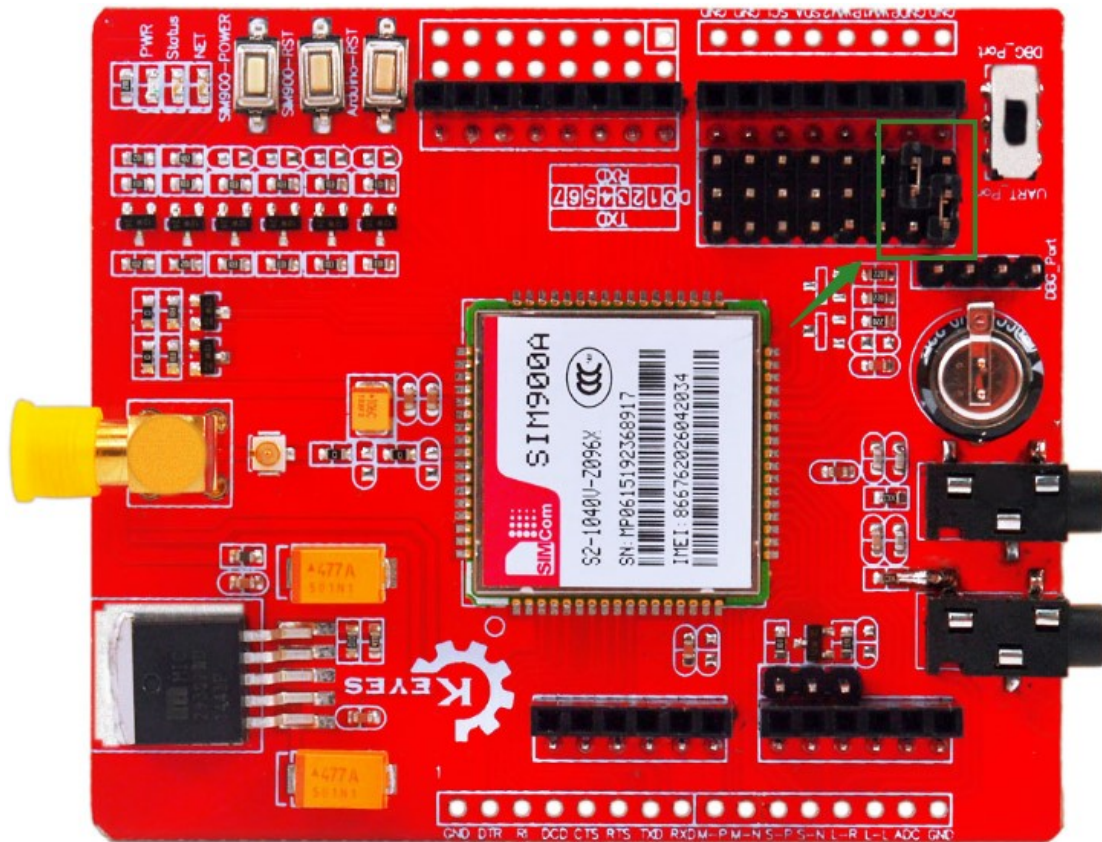


2. Connect the antenna to the shield, as shown below.



3. The shield and the Arduino board use serial ports for communication, and the communication interface can be set through jumper wires, as shown below. The picture below shows that D0(RX) of the arduino board is connected to the TX of the shield, and D1(TX) of the arduino board is connected to the RX of the shield. We can also set the serial

ports to other digital ports and use virtual serial ports for communication.



4. Upload the program to the arduino board, then stack the shield on it. In the code, the shield is used as a mobile phone to make a call to the specified mobile phone number. After the mobile phone is connected, you can use the earphone to talk to the mobile phone.

#### 4. Test Code

**A Use the default serial ports for communication: RXD (D0) and TXD (D1).**

```
void setup()
{
  pinMode(13, OUTPUT);
  pinMode(9, OUTPUT); //D9 is SIM900 turn on pin
  digitalWrite(9,HIGH);
  delay(1000);
  digitalWrite(9,LOW);
  delay(15000);
  Serial.begin(9600);
}

void loop()
{
  Serial.print("ATD15812345678;\r");//15812345678 your
dialing phone number
  delay(100000);
  // Serial.println("ATH");
  delay(200000);
}
```

**B Use the virtual serial ports for communication: RXD (D6)  
and TXD (D7) .**

```
#include <SoftwareSerial.h>
```

```
SoftwareSerial SIM900(6, 7); // define serial port PIN

void SIM900_Start()

{
    digitalWrite(9, HIGH);
    delay(2000);
    digitalWrite(9, LOW);
    delay(5000);
}

void Call_Phone()

{
    SIM900.println("ATD15812345678;"); // the numbers
behind ATD is your phone number to dial.
    delay(100);
    SIM900.println("ATD15812345678;");
    delay(30000);           // wait for 30 seconds...
    SIM900.println("ATH"); // hang up
}

void setup()

{
    pinMode(9, OUTPUT);
    SIM900.begin(19200); //set baud rate
    SIM900_Start();
}
```

```
    delay(20000); // wait for SIM900 to work
}
void loop()
{
    Call_Phone();
    do
    {
    }
    while(1);
}
```