A7 GPRS+GSM+GPS Shield

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Introduction

This is a A7 GPRS/GSM/GPS Shield, which is use the newest A7 GSM/GPRS/GPS module, A7 module is a GSM/GPRS/GPS function module. It supports GSM/GPRS Quad-Band（850/900/1800/1900）network. Also, it supports voice calls, SMS messages, GPRS data service and GPS function. We can use it make a simple phone.

The module is controlled by AT command via UART and supports 3.3V and 4.2V logical level.

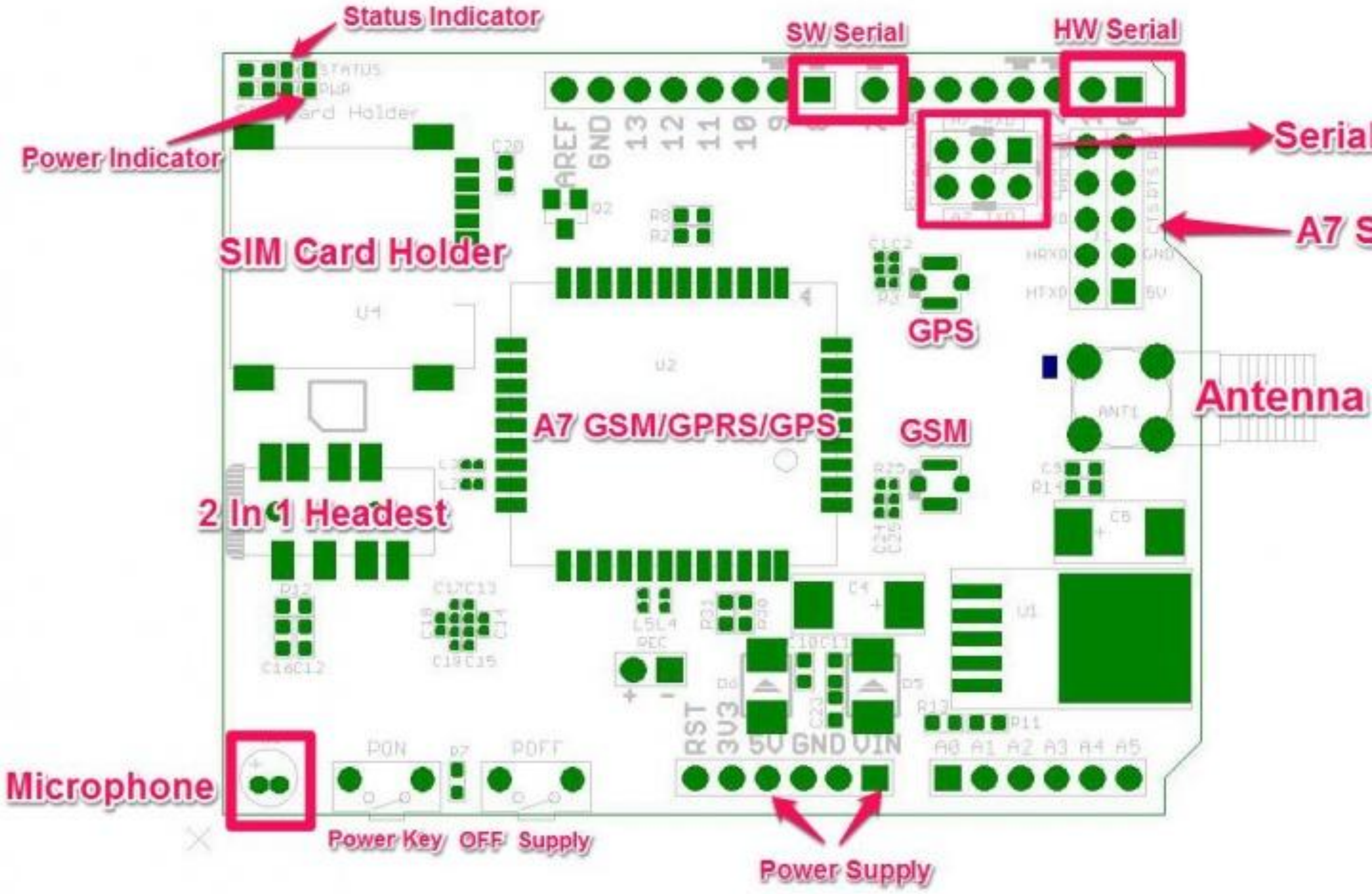
Model: ACS33042S

Features

- Operating temperature -30 ℃ to + 80 ℃;
- 1KG peak suction
- Low standby current
- Operating Voltage 3.3V-4.2V;
- Power voltage> 3.4V;
- Standby average current 3ma less;
- Support the GSM / GPRS four bands, including 850,900,1800,1900MHZ;
- Support China Mobile and China Unicom's 2G GSM network worldwide;
- GPRS Class 10;
- Sensitivity <-105;
- Support voice calls;
- Support SMS text messaging;
- Support GPRS data traffic, the maximum data rate, download 85.6Kbps, upload 42.8Kbps;
- Supports standard GSM07.07,07.05 AT commands and extended commands Ai-Thinker;
- Supports two serial ports, a serial port to download an AT command port;
- AT command supports the standard AT and TCP / IP command interface;
- Support digital audio and analog audio support for HR, FR, EFR, AMR speech coding;
- Support ROHS, FCC, CE, CTA certification;
- SMT 42PIN

Cautions

- Make sure your SIM card is unlocked.
- The product is provided as is without an insulating enclosure. Please observe ESD precautions specially in dry (low humidity) weather.
- It just supports baud rate 115200bps.



Power supply - Vin connected to external 5~9VDC power supply

Antenna interface - connected to external antenna

Serial port select - select either software serial port or hareware serial port to be connected to GSM/GPRS Shield

Hardware Serial - D0/D1 of Arduino/Crowduino

Software serial - D7/D8 of Arduino/Crowduino

UART of A6 - UART pins breakout of A6

Microphone - to answer the phone call

Speaker - to answer the phone call

GPIO,PWM and ADC of A^ - GPIO,PWM and ADC pins breakout of SIM808

Power key - power up for A6 **OFF key** - power down for A6

Pins usage on Arduino

D0 - Unused if you select hardware serial port to communicate with GPRS+GSM+GPS Shield

D1 - Unused if you select hardware serial port to communicate with GPRS+GSM+GPS Shield

D2 - Unused

D3 - Unused

D4 - Unused

D5 - Unused

D6 - Unused

D7 - Used if you select software serial port to communicate with GPRS+GSM+GPS Shield

D8 - Used if you select software serial port to communicate with GPRS+GSM+GPS Shield

D9 - Used for software control the power up or down of the SIM808

D10 - Unused

D11 - Unused

D12 - Unused

D13 - Unused

D14(A0) - Unused

D15(A1) - Unused

D16(A2) - Unused

D17(A3) - Unused

D18(A4) - Unused

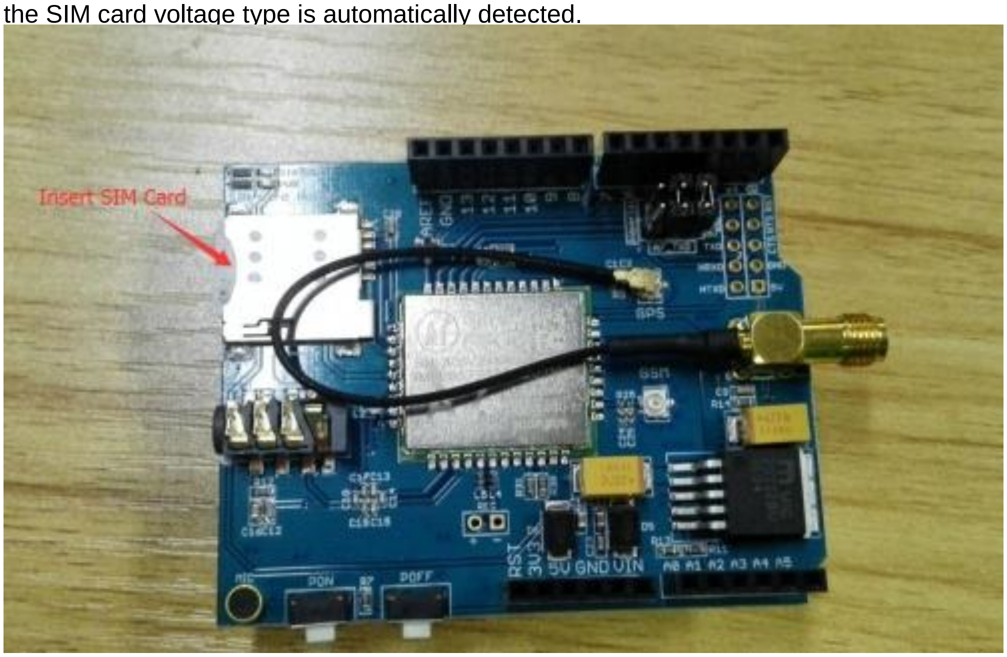
D19(A5) - Unused

Usage

Hardware installation

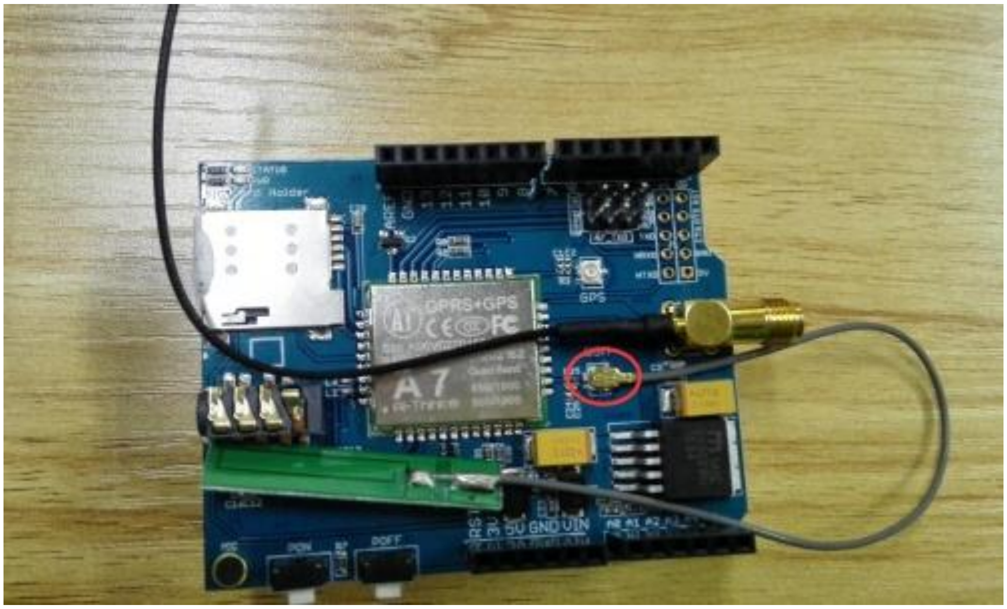
1.Insert an Micro SIM card to SIM Card Holder

6 Pin Holder for SIM Cards. Both 1.8 volts and 3.0 volts SIM Cards are supported by A6 GPRS/GSM Shield, the SIM card voltage type is automatically detected.



2.Connect the Antenna

A miniature coaxial RF connector is present on the A6 GPRS/GSM Shield board to connect with a GSM Antenna. The connector present on the A6 GPRS/GSM Shield is called a U.FL connecto.The GSM Antenna supplied with the GPRS Shield has an SMA connector (and not an RP-SMA connector) on it.The connection topology is shown in the diagram below:

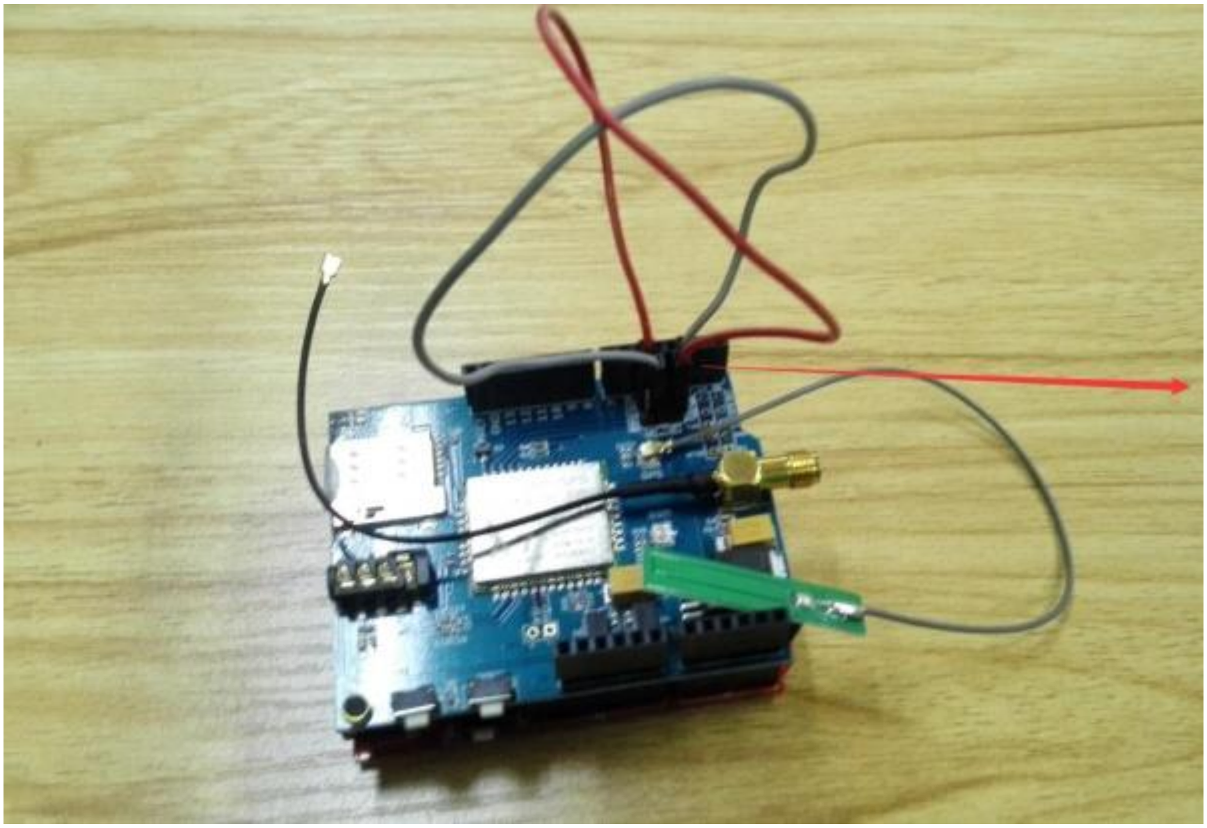


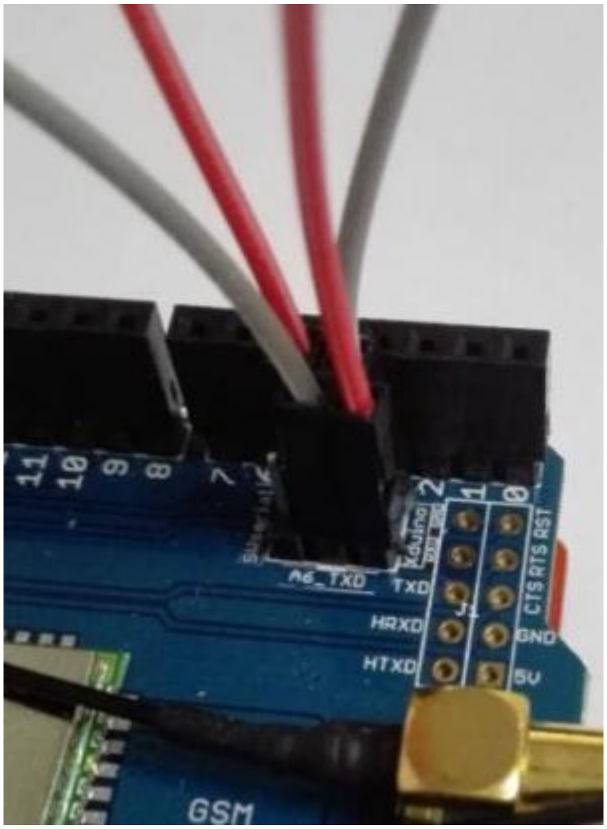
3.Plug to Arduino/Crowduino

The A6 GPRS/GSM Shield, like any other well designed shield, is stackable as shown in the photo below.And connect Arduino to PC by using a USB cable.

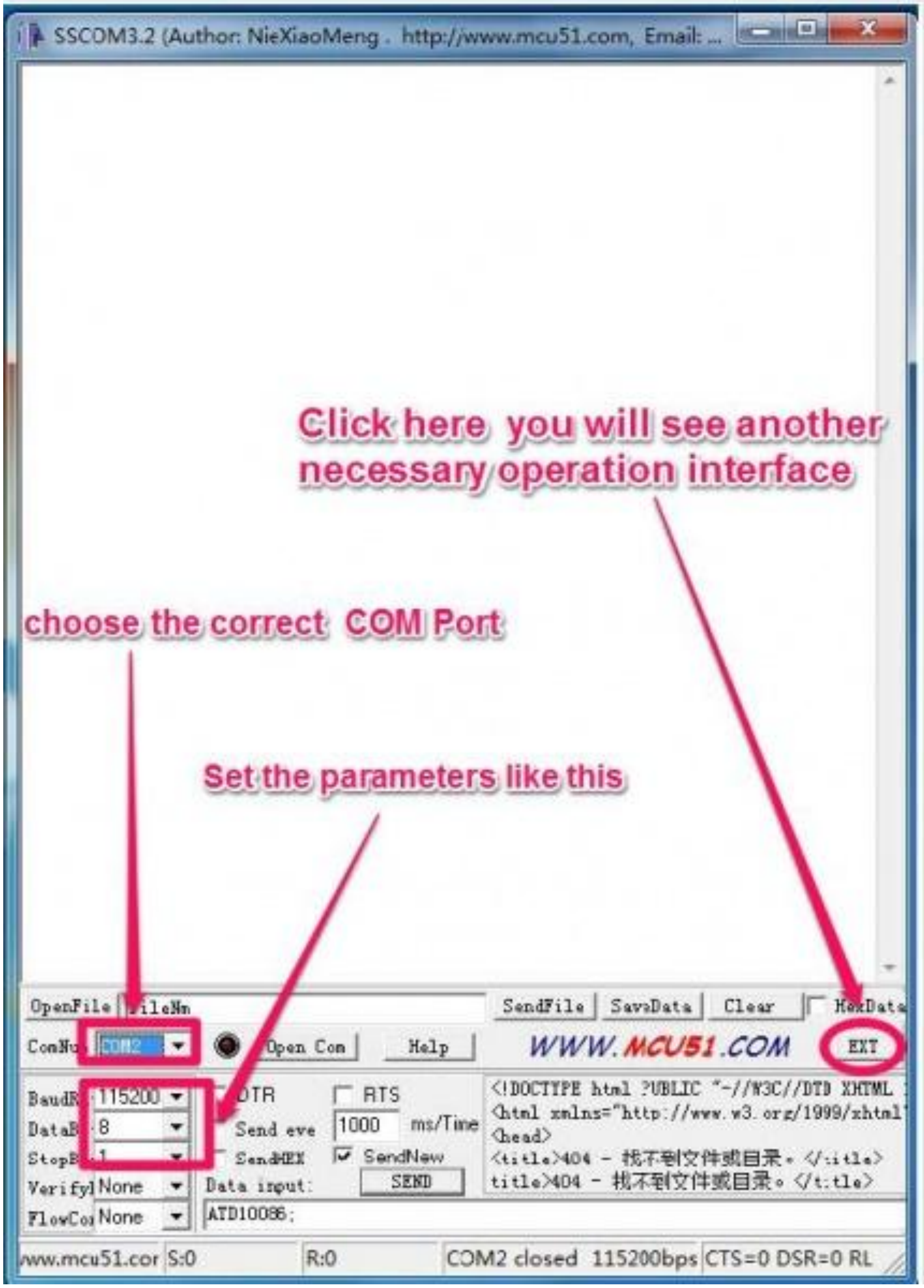
With serial debugging tools

1.Before use the serial debugging tool, we need select the hareware serial port.
Male - Female Splittable Jumper Wire Connect the A6_RXD to MTXD and A6_TXD to MRXD with female-feamale splittable jumper wire.





2.Download the serial debugging tool,unzip it and open the sscom32E.exe file.



Click here you will see another necessary operation interface

choose the correct COM Port

Set the parameters like this

ComNu COM2

BaudR 115200

DataB 8

StopB 1

Verify None

FlowCo None

Send eve 1000 ms/Time

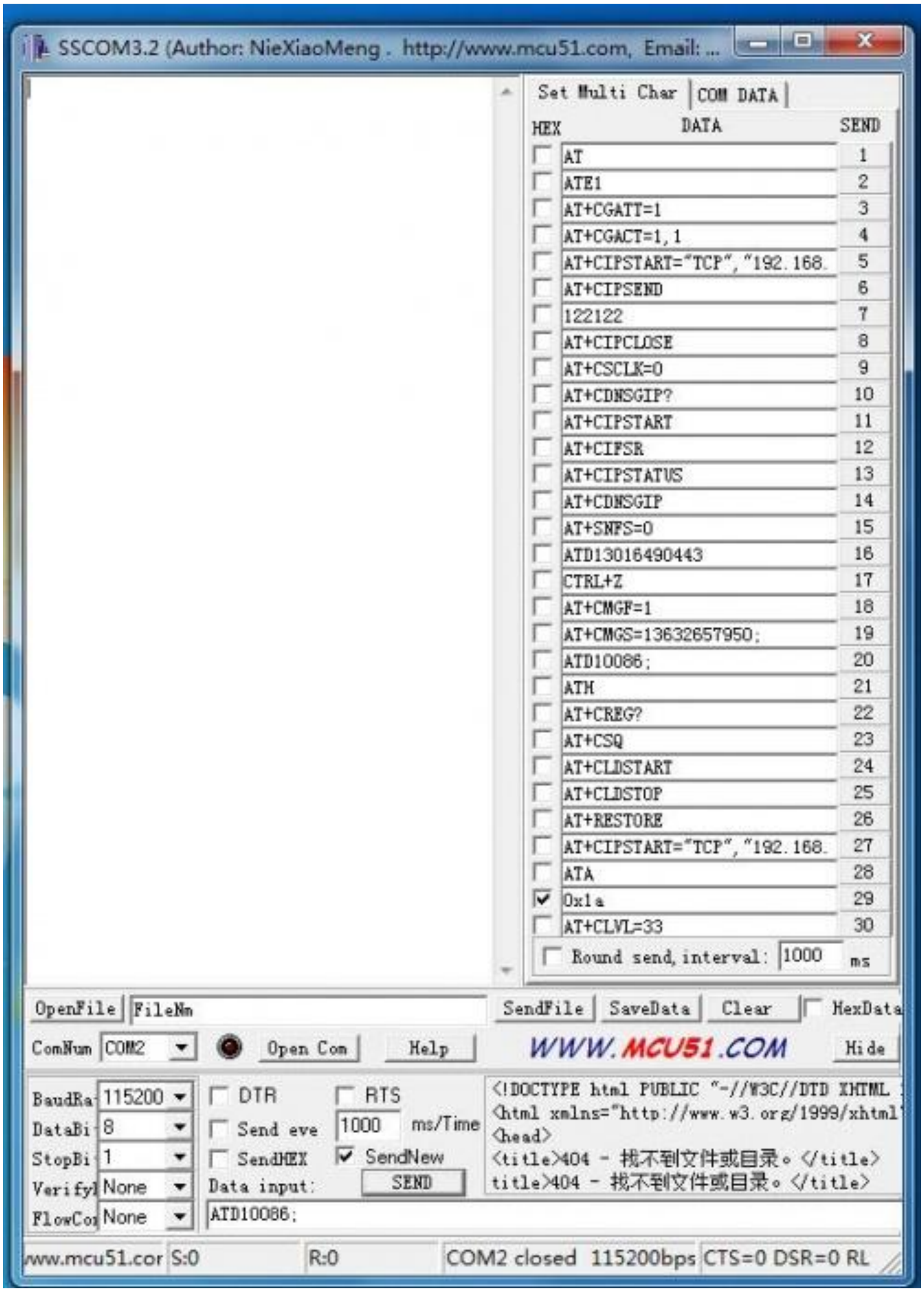
☑ SendNew

Data input: ATD10086;

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 
<html xmlns="http://www.w3.org/1999/xhtml"
<head>
<title>404 - 找不到文件或目录。</title>
title>404 - 找不到文件或目录。</title>
```

```
www.mcu51.cor S:0   R:0   COM2 closed  115200bps CTS=0 DSR=0 RL
```

click the "EXT":



SSCOM3.2 (Author: NieXiaoMeng . http://www.mcu51.com, Email: ...

Set Multi Char | COM DATA

HEX	DATA	SEND
□	AT	1
□	ATE1	2
□	AT+CGATT=1	3
□	AT+CGACT=1,1	4
□	AT+CIPSTART=“TCP”,“192.168.	5
□	AT+CIPSEND	6
□	122122	7
□	AT+CIPCLOSE	8
□	AT+CSCLK=0	9
□	AT+CDNSGIP?	10
□	AT+CIPSTART	11
□	AT+CIFSR	12
□	AT+CIPSTATUS	13
□	AT+CDNSGIP	14
□	AT+SNFS=0	15
□	ATD13016490443	16
□	CTRL+Z	17
□	AT+CMGF=1	18
□	AT+CMGS=13632657950;	19
□	ATD10086;	20
□	ATH	21
□	AT+CREG?	22
□	AT+CSQ	23
□	AT+CLDSTART	24
□	AT+CLDSTOP	25
□	AT+RESTORE	26
□	AT+CIPSTART=“TCP”,“192.168.	27
□	ATA	28
☑	0x1a	29
□	AT+CLVL=33	30

□ Round send, interval: 1000 ms

OpenFile FileNm SendFile SaveData Clear □ HexData

ComNum COM2 ● Open Com Help WWW.MCU51.COM Hide

BaudRa 115200
DataBi 8
StopBi 1
Verify None
FlowCo None

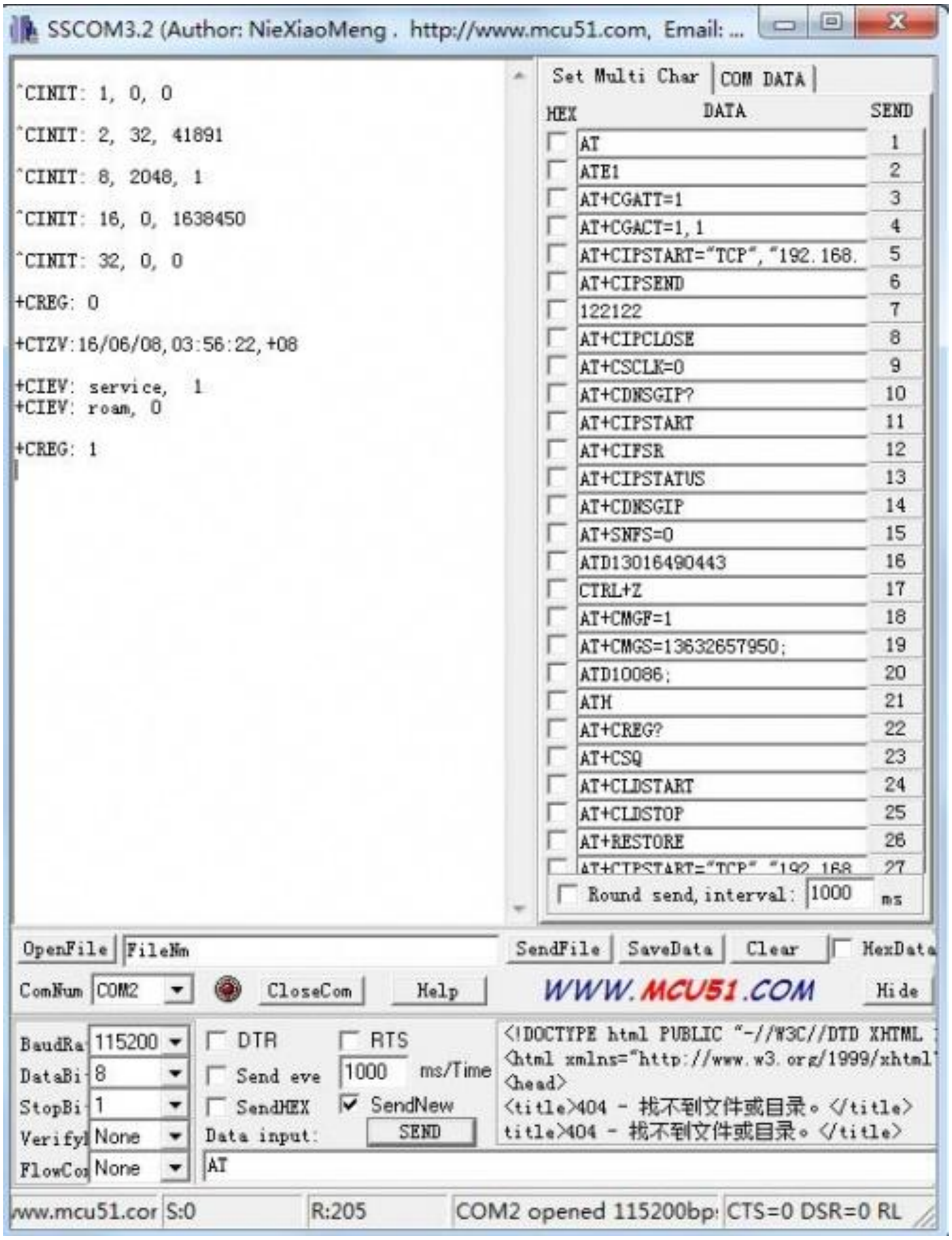
□ DTR □ RTS
□ Send eve 1000 ms/Time
□ SendHEX ☑ SendNew
Data input: SEND

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML
<html xmlns="http://www.w3.org/1999/xhtml
<head>
<title>404 - 找不到文件或目录。</title>
title>404 - 找不到文件或目录。</title>
```

ATD10086;

ww.mcu51.cor S:0 R:0 COM2 closed 115200bps CTS=0 DSR=0 RL

3.Let's start the mudule,Long press the power key for more than 2 seconds,if you will see some information in the serial debug window as bellow,it mens This module is started successfully.



```
^CINIT: 1, 0, 0

^CINIT: 2, 32, 41891

^CINIT: 8, 2048, 1

^CINIT: 16, 0, 1638450

^CINIT: 32, 0, 0

+CREG: 0

+CTZV:16/06/08,03:56:22,+08

+CIEV: service,  1
+CIEV: roam, 0

+CREG: 1
```

HEX	DATA	SEND
□	AT	1
□	ATE1	2
□	AT+CGATT=1	3
□	AT+CGACT=1,1	4
□	AT+CIPSTART="TCP","192.168.	5
□	AT+CIPSEND	6
□	122122	7
□	AT+CIPCLOSE	8
□	AT+CSCLK=0	9
□	AT+CDNSGIP?	10
□	AT+CIPSTART	11
□	AT+CIFSR	12
□	AT+CIPSTATUS	13
□	AT+CDNSGIP	14
□	AT+SNFS=0	15
□	ATD13016490443	16
□	CTRL+Z	17
□	AT+CMGF=1	18
□	AT+CMGS=13632657950;	19
□	ATD10086;	20
□	ATH	21
□	AT+CREG?	22
□	AT+CSQ	23
□	AT+CLDSTART	24
□	AT+CLDSTOP	25
□	AT+RESTORE	26
□	AT+CIPSTART="TCP","192.168	27

□ Round send, interval: 1000 ms

FileNm

ComNum COM2

BaudRa 115200
DataBi 8
StopBi 1
Verifyl None
FlowCo None

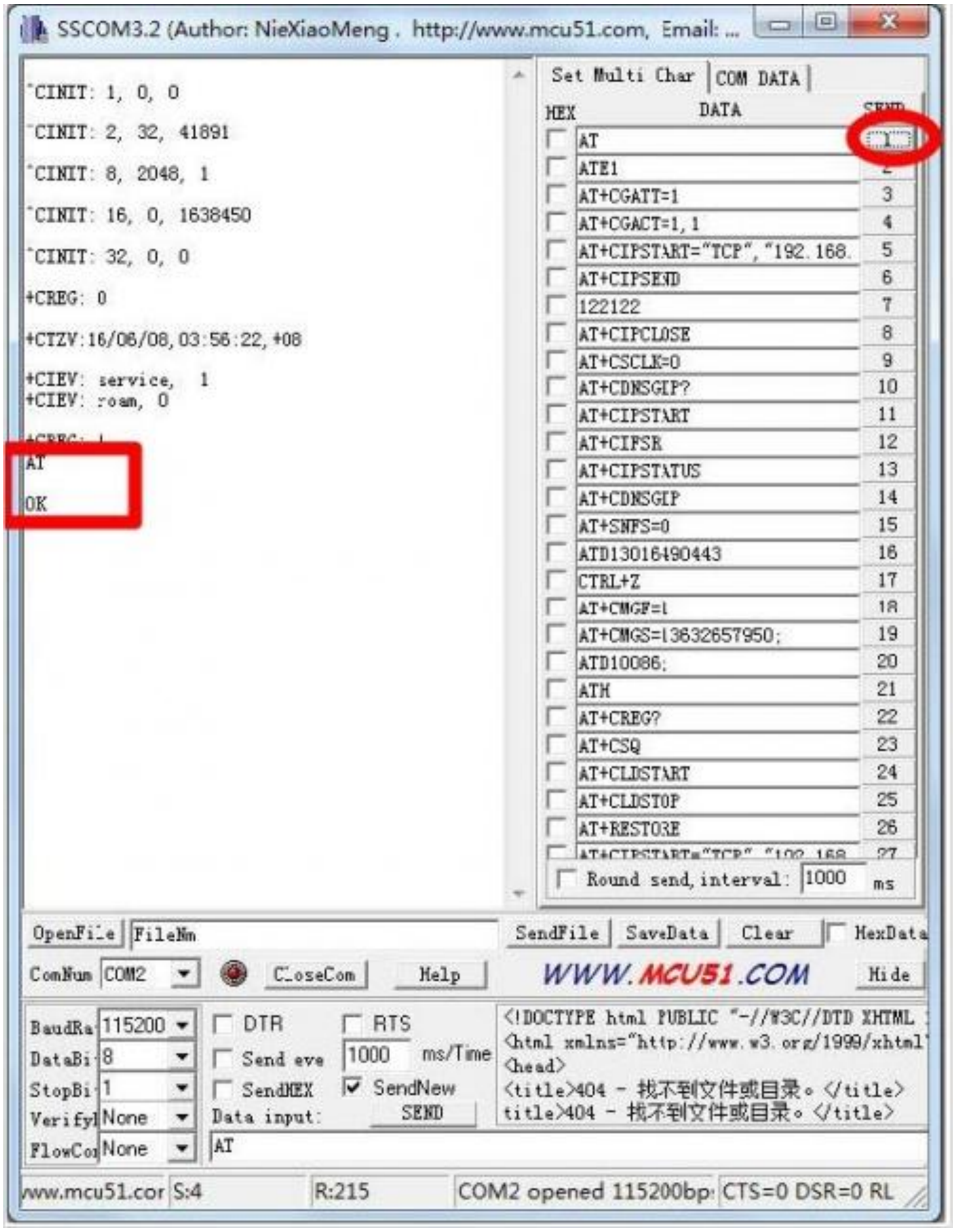
□ DTR □ RTS
□ Send eve 1000 ms/Time
□ SendHEX ☑ SendNew
Data input: AT

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML
<html xmlns="http://www.w3.org/1999/xhtml"
<head>
<title>404 - 找不到文件或目录。</title>
title>404 - 找不到文件或目录。</title>
```

www.mcu51.cor S:0 R:205 COM2 opened 115200bp: CTS=0 DSR=0 RL

4.Now we can make a telephone calls,

Click on the the number "1" to send the AT command, and you will see "OK" in the receive window,it means the serial port communication no problem.



```
^CINIT: 1, 0, 0

^CINIT: 2, 32, 41891

^CINIT: 8, 2048, 1

^CINIT: 16, 0, 1638450

^CINIT: 32, 0, 0

+CREG: 0

+CTZV:16/06/08,03:56:22,+08

+CIEV: service,  1
+CIEV: roam, 0

+CREG: 1
AT

OK
```

HEX	DATA	SEND
□	AT	1
□	ATE1	2
□	AT+CGATT=1	3
□	AT+CGACT=1,1	4
□	AT+CIPSTART="TCP","192.168.	5
□	AT+CIPSEND	6
□	122122	7
□	AT+CIPCLOSE	8
□	AT+CSCLK=0	9
□	AT+CDNSGIP?	10
□	AT+CIPSTART	11
□	AT+CIFSR	12
□	AT+CIPSTATUS	13
□	AT+CDNSGIP	14
□	AT+SNFS=0	15
□	ATD13016490443	16
□	CTRL+Z	17
□	AT+CMGF=1	18
□	AT+CMGS=13632657950;	19
□	ATD10086;	20
□	ATH	21
□	AT+CREG?	22
□	AT+CSQ	23
□	AT+CLDSTART	24
□	AT+CLDSTOP	25
□	AT+RESTORE	26
□	AT+CIPSTART="TCP","192.168.	27

□ Round send, interval: 1000 ms

FileNm

ComNum COM2

BaudRa 115200
DataBi 8
StopBi 1
Verify None
FlowCo None

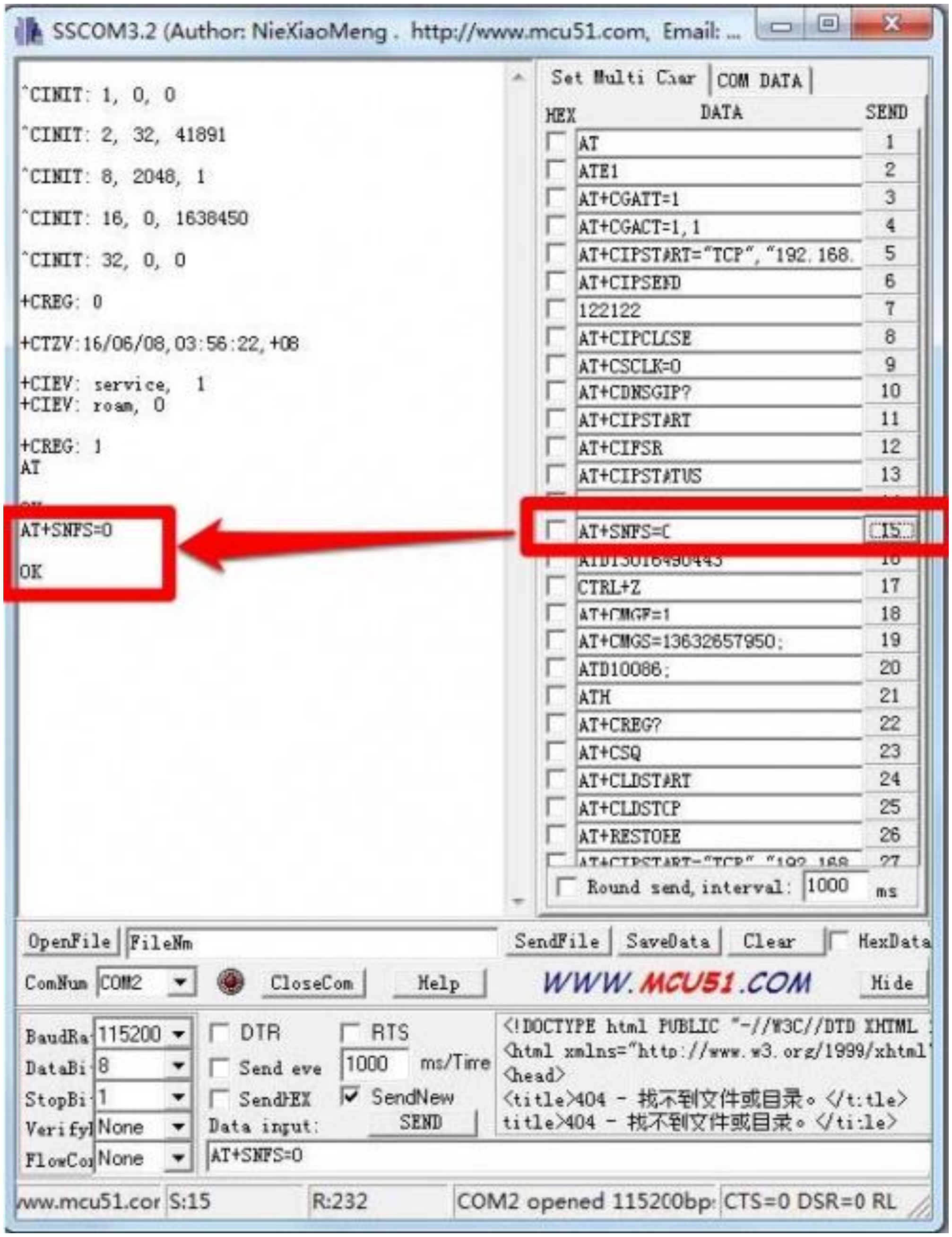
□ DTR □ RTS
□ Send eve 1000 ms/Time
□ SendHEX ☑ SendNew

Data input: AT

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML
<html xmlns="http://www.w3.org/1999/xhtml"
<head>
<title>404 - 找不到文件或目录。</title>
title>404 - 找不到文件或目录。</title>
```

www.mcu51.cor S:4 R:215 COM2 opened 115200bp CTS=0 DSR=0 RL

Insert the headset into the headset port click on the number"15" to send the AT+SNFS=0 command,if display "0k" means success into headphones mode.



```
^CINIT: 1, 0, 0

^CINIT: 2, 32, 41891

^CINIT: 8, 2048, 1

^CINIT: 16, 0, 1638450

^CINIT: 32, 0, 0

+CREG: 0

+CTZV:16/06/08,03:56:22,+08

+CIEV: service,  1
+CIEV: roam, 0

+CREG: 1
AT

OK
AT+SNFS=0

OK
```

HEX	DATA	SEND
□	AT	1
□	ATE1	2
□	AT+CGATT=1	3
□	AT+CGACT=1,1	4
□	AT+CIPSTART="TCP","192.168.	5
□	AT+CIPSEND	6
□	122122	7
□	AT+CIPCLOSE	8
□	AT+CSCLK=0	9
□	AT+CDNSGIP?	10
□	AT+CIPSTART	11
□	AT+CIFSR	12
□	AT+CIPSTATUS	13
□	[illegible]	14
□	AT+SNFS=0	15
□	ATD13016490443	16
□	CTRL+Z	17
□	AT+CMGF=1	18
□	AT+CMGS=13632657950;	19
□	ATD10086;	20
□	ATH	21
□	AT+CREG?	22
□	AT+CSQ	23
□	AT+CLDSTART	24
□	AT+CLDSTOP	25
□	AT+RESTORE	26
□	AT+CIPSTART="TCP","192.168	27

□ Round send,interval: 1000 ms

FileNm

ComNum COM2

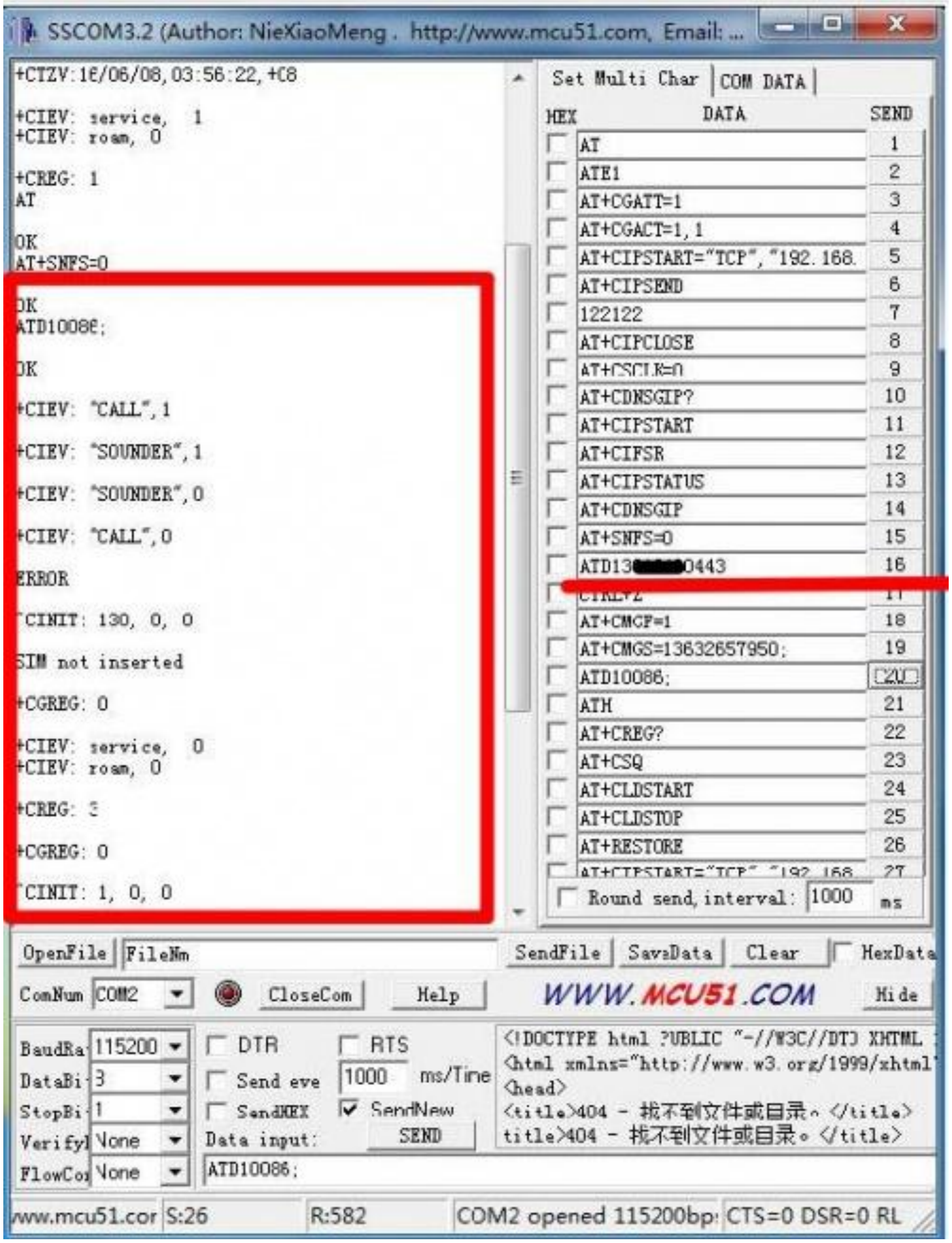
BaudRa 115200
DataBi 8
StopBi 1
Verify None
FlowCo None

□ DTR □ RTS
□ Send eve 1000 ms/Time
□ SendHEX ☑ SendNew
Data input: AT+SNFS=0

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML
<html xmlns="http://www.w3.org/1999/xhtml"
<head>
<title>404 - 找不到文件或目录。</title>
title>404 - 找不到文件或目录。</title>
```

www.mcu51.com S:15 R:232 COM2 opened 115200bps CTS=0 DSR=0 RL

Click on the number"15" to send the ATDXXXXXXXXXX command,"XXXXXXXXX"is the phone number you want to call,if display "OK",then start dialing.you can enjoy the call.



SSCOM3.2 (Author: NieXiaoMeng . http://www.mcu51.com, Email: ...

```
+CTZV:16/06/08,03:56:22,+C8

+CIEV: service,  1
+CIEV: roam, 0

+CREG: 1
AT

OK
AT+SNFS=0

OK
ATD10086;

OK

+CIEV: "CALL",1

+CIEV: "SOUNDER",1

+CIEV: "SOUNDER",0

+CIEV: "CALL",0

ERROR

^CINIT: 130, 0, 0

SIM not inserted

+CGREG: 0

+CIEV: service,  0
+CIEV: roam, 0

+CREG: 3

+CGREG: 0

^CINIT: 1, 0, 0
```

HEX	DATA	SEND
□	AT	1
□	ATE1	2
□	AT+CGATT=1	3
□	AT+CGACT=1,1	4
□	AT+CIPSTART="TCP","192.168.	5
□	AT+CIPSEND	6
□	122122	7
□	AT+CIPCLOSE	8
□	AT+CSCLK=0	9
□	AT+CDNSGIP?	10
□	AT+CIPSTART	11
□	AT+CIFSR	12
□	AT+CIPSTATUS	13
□	AT+CDNSGIP	14
□	AT+SNFS=0	15
□	ATD13[redacted]0443	16
□	CTRL+Z	17
□	AT+CMGF=1	18
□	AT+CMGS=13632657950;	19
□	ATD10086;	20
□	ATH	21
□	AT+CREG?	22
□	AT+CSQ	23
□	AT+CLDSTART	24
□	AT+CLDSTOP	25
□	AT+RESTORE	26
□	AT+CIPSTART="TCP","192.168.	27

□ Round send, interval: 1000 ms

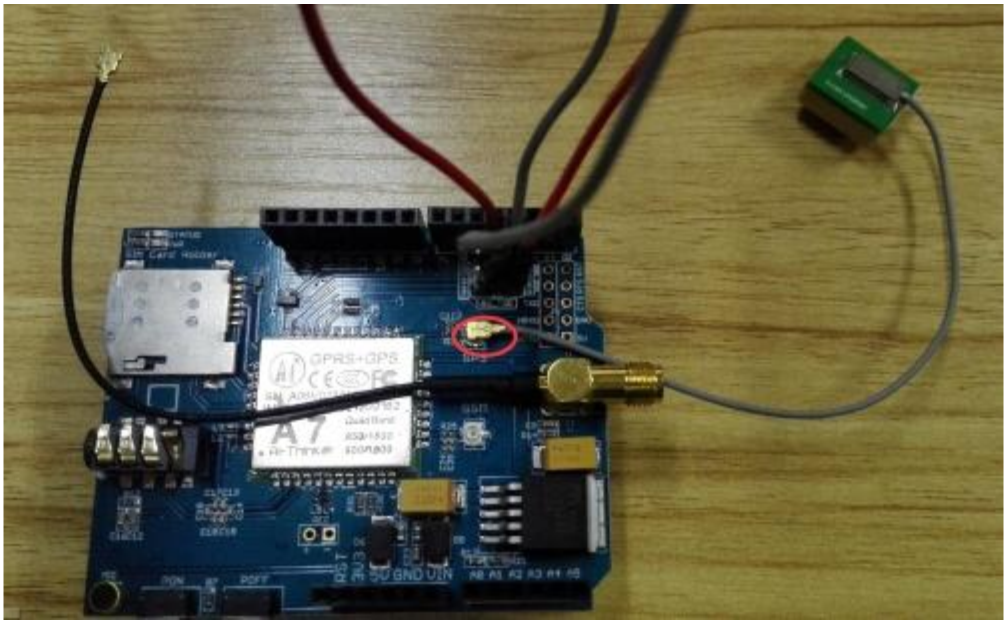
BaudRate 115200
DataBits 8
StopBits 1
Verify None
FlowCon None
□ DTR □ RTS
□ Send every 1000 ms/Time
□ SendHEX ☑ SendNew
Data input: ATD10086;

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML
<html xmlns="http://www.w3.org/1999/xhtml"
<head>
<title>404 - 找不到文件或目录。</title>
title>404 - 找不到文件或目录。</title>
```

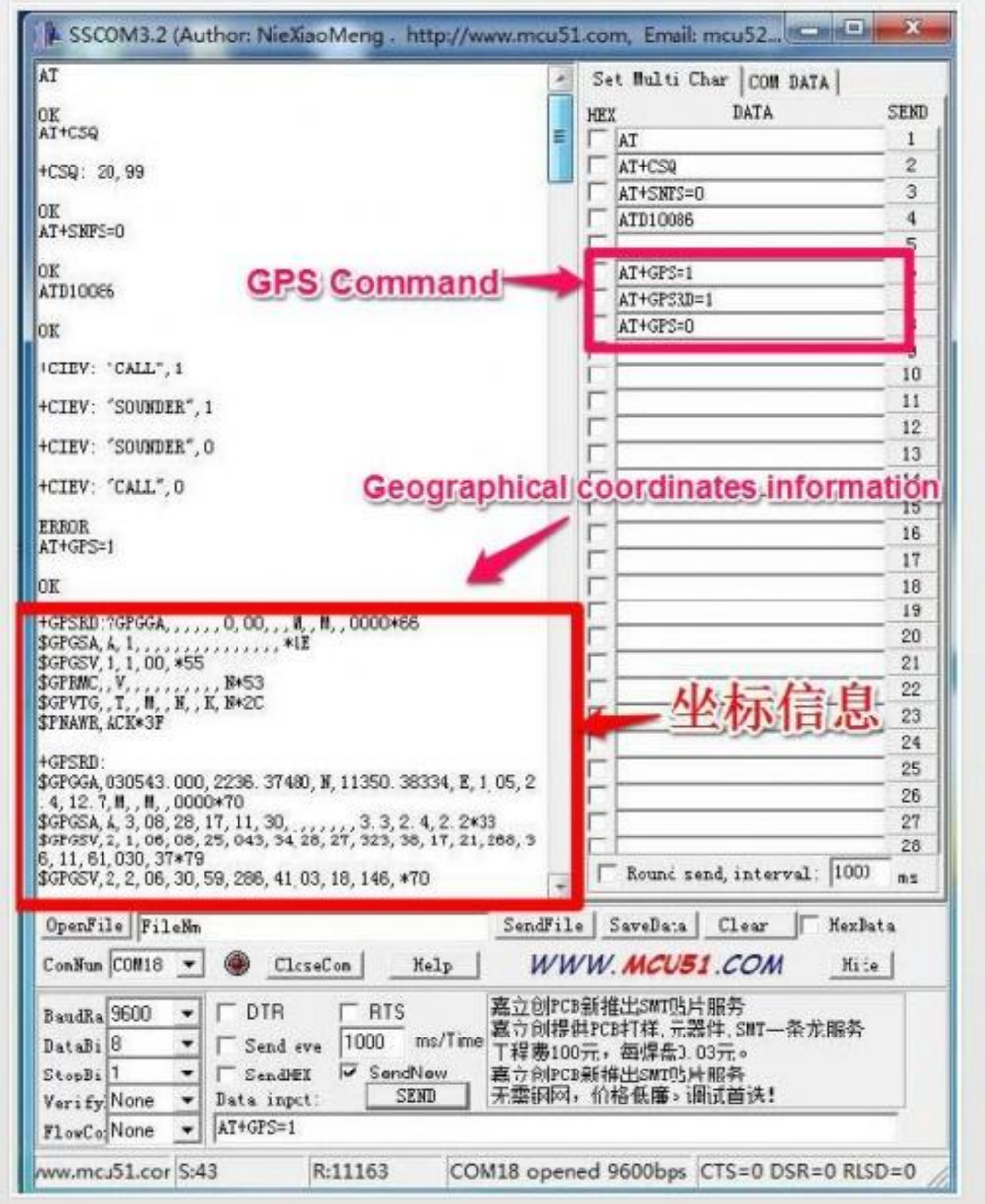
www.mcu51.com S:26 R:582 COM2 opened 115200bps CTS=0 DSR=0 RL

5. Get the GPS information

Connect the GPS Antanna



AT Command


SSCOM3.2 (Author: NieXiaoMeng . http://www.mcu51.com, Email: mcu52...
GPS Command
Geographical coordinates information
坐标信息
Set Multi Char
COM DATA
HEX
DATA
SEND
OpenFile
FileNm
SendFile
SaveData
Clear
HexData
CloseCom
Help
WWW.MCU51.COM
Hide
SEND
嘉立创PCB新推出SMT贴片服务
嘉立创提供PCB打样, 元器件, SMT一条龙服务
工程费100元, 每焊点0.03元。
嘉立创PCB新推出SMT贴片服务
无需钢网, 价格低廉, 调试首选!

```
AT

OK
AT+CSQ

+CSQ: 20,99

OK
AT+SNFS=0

OK
ATD10086

OK

+CIEV: "CALL",1

+CIEV: "SOUNDER",1

+CIEV: "SOUNDER",0

+CIEV: "CALL",0

ERROR
AT+GPS=1

OK

+GPSRD:?GPGGA,,,,,,0,00,,,M,,M,,0000*66
$GPGSA,A,1,,,,,,,,,,,,,,,*1E
$GPGSV,1,1,00,*55
$GPRMC,,V,,,,,,,,,,N*53
$GPVTG,,T,,M,,N,,K,N*2C
$PNAWR,ACK*3F

+GPSRD:
$GPGGA,030543.000,2236.37480,N,11350.38334,E,1,05,2
.4,12.7,M,,M,,0000*70
$GPGSA,A,3,08,28,17,11,30,,,,,,,,3.3,2.4,2.2*33
$GPGSV,2,1,06,08,25,043,34,28,27,323,38,17,21,268,3
6,11,61,030,37*79
$GPGSV,2,2,06,30,59,286,41,03,18,146,*70
```

HEX	DATA	SEND
□	AT	1
□	AT+CSQ	2
□	AT+SNFS=0	3
□	ATD10086	4
□	AT+GPS=1	
□	AT+GPS3D=1	
□	AT+GPS=0	

□ Round send, interval: 1000 ms

ComNum COM18

BaudRate 9600 □ DTR □ RTS

DataBits 8 □ Send every 1000 ms/Time

StopBits 1 □ SendHEX ☑ SendNow

Verify None

FlowControl None

Data input: AT+GPS=1

www.mcu51.com S:43 R:11163 COM18 opened 9600bps CTS=0 DSR=0 RLSD=0

Of course not just these functions, you can send some other command to achieve different functions

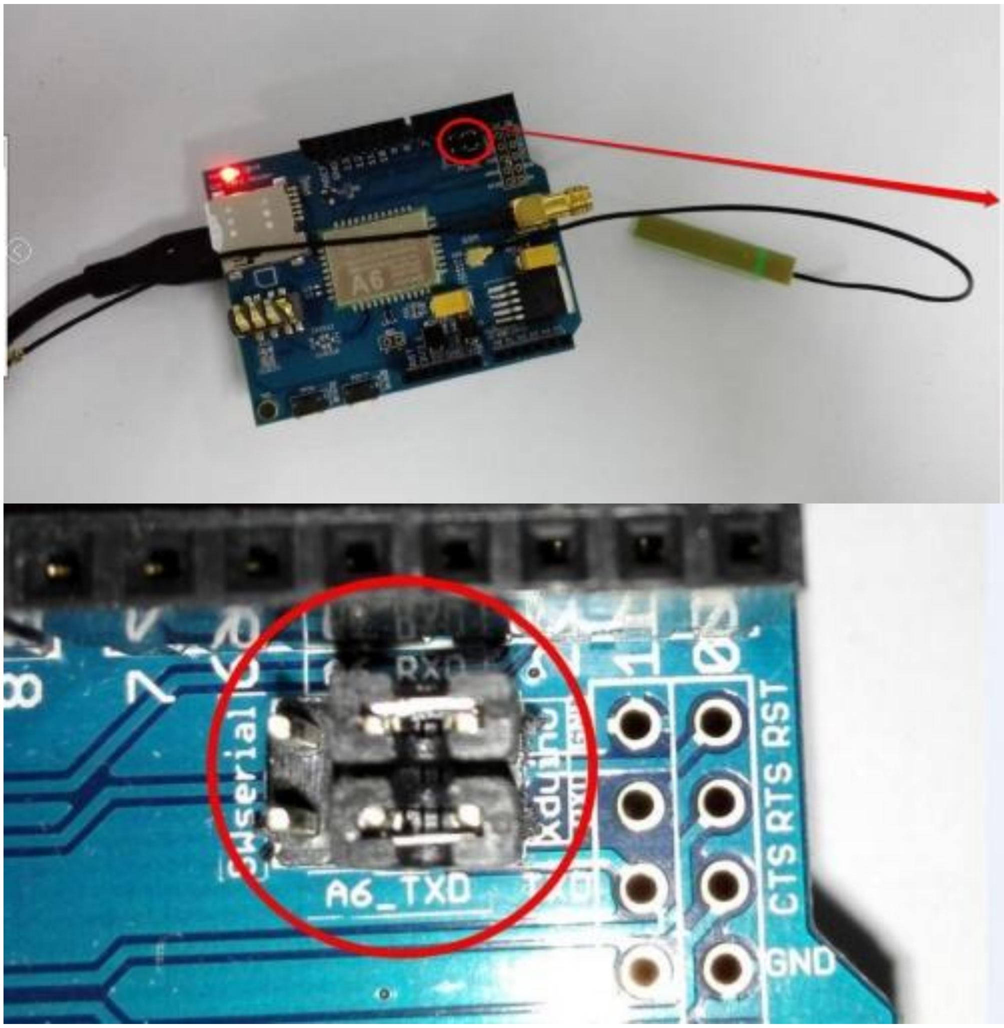
AT Command	Description
AT + CGATT = 1	Return OK, attached to the network
AT + CGACT = 1	Activate the network, then you can use the tcp/ip command

AT + CIPSTART = "TCP" "121.41.97.28", 60000	TCPIP server connection
AT + CIPCLOSE	Close TCP/IP connection
AT+CMGF=1	Send a text message
AT+CIPTCFG	Passthrough mode configuration
AT+CIPTMODE	Enter the passthrough mode
AT+GPS=1	Open GPS
AT+GPS=0	Close GPS
AT+AGPS=1	Open AGPS
AT+AGPS=0	Close AGPS

With Arduino Leonardo

The demo code below is for the Xduino to send SMS message/dial a voice call/submit a http request to a website and upload datas to the pachube. It has been tested on Arduino Duemilanove but will work on any compatible variant, plesse note that this sketch uses the sorfware UART of ATmega328P. please follow the following steps for running this sketch.

1. With the A7 GPRS/GSM/GPS Shield removed, download this sketch into your Arduino.
2. Disconnect the Xduino from USB port to remove power source.
3. Set the Serial Port jumpers on the A7 GPRS/GSM/GPS Shield in SWserial position, to use the Soft Serial port of Arduino.
4. Connect the antenna to the A7 GPRS/GSM/GPRS Shield and insert the SIM Card.
5. Mount the GPRS Shield on Arduino.
6. Connect the Arduino to the computer by USB, and fire up your favorite serial terminal software on computer, choose the COM port for Arduino, set it to operate at 115200.



1. Type command in the terminal to execute different function, threr are 4 functions in the demo:
    1. If you input 't', the demo will send a SMS message to another cellphone which you set(you need set the number in the code);
    2. If you input 'd', the program will dial a call to the other cellphone that you set(it is also need you set in the code);
    3. If you input 'h', it will submit a http request to a web that you want to access(it need you set the web adress in the code), it will return a string from the website if it goes correctly;
    4. If you input 's', it will upload the datas to the pachube(for detail you can refer to the explanation in the code). I strongly recommend you input 'h' before input 's', because uploading datas to the pachube need do some setting, after execute the function of submit a http request, the setting will be set.
2. If the program returns error in the terminal after you typed the command, don't worry, just try input the command again.

```
#include <String.h>
unsigned char SigQ[50];
unsigned char SigQ1[5]={'a','a','a','a','a'};
int SIGQ=0;

void setup()
{
  Serial1.begin(115200);               // the GPRS baud rate
  Serial.begin(115200);    // the GPRS baud rate
  delay(500);
//    mySerial.println("AT+CPIN?");  //get the signal Quality
//  delay(100);
//    pinMode(9, OUTPUT);
//  digitalWrite(9,LOW);
//  delay(1000);
//  digitalWrite(9,HIGH);
//  delay(1500);
//  digitalWrite(9,LOW);

//*******************************************************
//GetSignalQuality();
//*******************************************************
  for(int x=0;x<20;x++)
    {

   GetSignalQuality();
    delay(800);
    for(int i=0;i<26;i++)
    {
   if(SigQ[i]==58)
   {
     int j=0;
     int k=0;
     i++;i++;
     while((SigQ[i+j])!=44)
     {
      if((SigQ[i+j]>='0'&&SigQ[i+j]<='9'))  //>=48 <=57
      {
      SigQ1[j]=SigQ[i+j];
       }
       j++;  //j=1
     }
     SIGQ=SigQ1[0]-'0';

     if(j==2)
     {
     SIGQ=SIGQ*10+SigQ1[1]-'0';
     }
   Serial.println("");
   Serial.print("SIGQ:");
   Serial.println(SIGQ);
     }
   }
   if ( Serial1.available())
    Serial.write( Serial1.read());
   if (SIGQ>=10)
   {
     break;
   }
   if(x==20)
   {
    Serial.print("The Signal Quality is poor!");
   }
   }
  delay(2000);
DialVoiceCall();
if ( Serial1.available())
    Serial.write( Serial1.read());
}

void loop()
{
  //after start up the program, you can using terminal to connect the serial
of gprs shield,
  //if you input 't' in the terminal, the program will execute
SendTextMessage(), it will show how to send a sms message,
  //if input 'd' in the terminal, it will execute DialVoiceCall(), etc.
// GetSignalQuality();
 delay(500);
  if (Serial.available())
```

```
    switch(Serial.read())
   {
     case 't':
       SendTextMessage();
       break;
     case 'd':
       DialVoiceCall();
       break;
     case 'h':
       SubmitHttpRequest();
       break;
     case 's':
       Send2Pachube();
       break;
     case 'q':
       GetSignalQuality();
       break;
   }
  if ( Serial1.available())
    Serial.write( Serial1.read());
}

///SendTextMessage()
///this function is to send a sms message
void SendTextMessage()
{
   Serial1.print("AT+CMGF=1\r");    //Because we want to send the SMS in text
mode
  delay(100);
   Serial1.println("AT + CMGS = \"+8613016490443\"");//send sms message, be
careful need to add a country code before the cellphone number
  delay(100);
   Serial1.println("GSM test message!");//the content of the message
  delay(100);
   Serial1.println((char)26);//the ASCII code of the ctrl+z is 26
  delay(100);
   Serial1.println();
}

///DialVoiceCall
```

```
///this function is to dial a voice call
void DialVoiceCall()
{
   Serial1.println("AT+SNFS=0");
 delay(100);
   Serial1.println("ATDxxxxxxxxxx;");//dial the number
//mySerial.println("ATD + +8613826558615;");//dial the number
  delay(100);
   Serial1.println();
}

///SubmitHttpRequest()
///this function is submit a http request
///attention:the time of delay is very important, it must be set enough
void SubmitHttpRequest()
{
   Serial1.println("AT+CSQ");
  delay(100);

  ShowSerialData();// this code is to show the data from gprs shield, in
order to easily see the process of how the gprs shield submit a http request,
and the following is for this purpose too.

   Serial1.println("AT+CGATT?");
  delay(100);

  ShowSerialData();

   Serial1.println("AT+SAPBR=3,1,\"CONTYPE\",\"GPRS\"");//setting the SAPBR,
the connection type is using gprs
  delay(1000);

  ShowSerialData();

   Serial1.println("AT+SAPBR=3,1,\"APN\",\"CMNET\"");//setting the APN, the
second need you fill in your local apn server
  delay(4000);

  ShowSerialData();
```

```
   Serial1.println("AT+SAPBR=1,1");//setting the SAPBR, for detail you can
refer to the AT command mamual
  delay(2000);

  ShowSerialData();

   Serial1.println("AT+HTTPINIT"); //init the HTTP request

  delay(2000);
  ShowSerialData();

   Serial1.println("AT+HTTPPARA=\"URL\",\"www.google.com.hk\"");// setting
the httppara, the second parameter is the website you want to access
  delay(1000);

  ShowSerialData();

   Serial1.println("AT+HTTPACTION=0");//submit the request
  delay(10000);//the delay is very important, the delay time is base on the
return from the website, if the return datas are very large, the time
required longer.
  //while(!mySerial.available());

  ShowSerialData();

   Serial1.println("AT+HTTPREAD");// read the data from the website you
access
  delay(300);

  ShowSerialData();

   Serial1.println("");
  delay(100);
}

///send2Pachube()///
///this function is to send the sensor data to the pachube, you can see the
new value in the pachube after execute this function///
void Send2Pachube()
{
   Serial1.println("AT+CGATT?");
  delay(100);

  ShowSerialData();

   Serial1.println("AT+CSTT=\"CMNET\"");//start task and setting the APN,
  delay(1000);

  ShowSerialData();

   Serial1.println("AT+CIICR");//bring up wireless connection
  delay(300);

  ShowSerialData();

   Serial1.println("AT+CIFSR");//get local IP adress
  delay(2000);

  ShowSerialData();

   Serial1.println("AT+CIPSPRT=0");
  delay(3000);

  ShowSerialData();

   Serial1.println("AT+CIPSTART=\"tcp\",\"api.cosm.com\",\"8081\"");//start
up the connection
  delay(2000);

  ShowSerialData();

   Serial1.println("AT+CIPSEND");//begin send data to remote server
  delay(4000);
  ShowSerialData();
  String humidity = "1031";//these 4 line code are imitate the real sensor
data, because the demo did't add other sensor, so using 4 string variable to
replace.
  String moisture = "1242";//you can replace these four variable to the real
sensor data in your project
  String temperature = "30";//
  String barometer = "60.56";//
   Serial1.print("{\"method\": \"put\",\"resource\":
\"/feeds/42742/\",\"params\"");//here is the feed you apply from pachube
  delay(500);
  ShowSerialData();
  Serial1.print(": {},\"headers\": {\"X-PachubeApiKey\":");//in here, you
should replace your pachubeapikey
  delay(500);
  ShowSerialData();
   Serial1.print(" \"_cXwr5LE8qW4a296O-
cDwOUvfddFer5pGmaRigPsiO0");//pachubeapikey
  delay(500);
  ShowSerialData();
   Serial1.print("jEB9OjK-W6vej56j9ItaSlIac-
hgbQjxExuveD95yc8BttXc");//pachubeapikey
  delay(500);
  ShowSerialData();
  Serial1.print("Z7_seZqLVjeCOmNbEXUva45t6FL8AxOcuNSsQS\"},\"body\":");
  delay(500);
  ShowSerialData();
   Serial1.print(" {\"version\": \"1.0.0\",\"datastreams\": ");
  delay(500);
  ShowSerialData();
   Serial1.println("[{\"id\": \"01\",\"current_value\": \"" + barometer +
"\"},");
  delay(500);
  ShowSerialData();
   Serial1.println("{\"id\": \"02\",\"current_value\": \"" + humidity +
"\"},");
  delay(500);
  ShowSerialData();
   Serial1.println("{\"id\": \"03\",\"current_value\": \"" + moisture +
"\"},");
  delay(500);
  ShowSerialData();
   Serial1.println("{\"id\": \"04\",\"current_value\": \"" + temperature +
"\"}]},\"token\": \"lee\"}");


  delay(500);
  ShowSerialData();

   Serial1.println((char)26);//sending
  delay(5000);//waitting for reply, important! the time is base on the
condition of internet
   Serial1.println();

  ShowSerialData();

   Serial1.println("AT+CIPCLOSE");//close the connection
  delay(100);
  ShowSerialData();
}
//*******************************************************
  //GetSignalQuality();
//*******************************************************

void GetSignalQuality()
{

   Serial1.println("AT+CSQ");  //get the signal Quality
  delay(100);
  int k=0;
  while( Serial1.available()!=0)
  {
    SigQ[k]= Serial1.read();
    Serial.write(SigQ[k]);
    k+=1;
  }
}

void ShowSerialData()
{
  while( Serial1.available()!=0)
    Serial.write( Serial1.read());
}
```