

Introduction

For module information: **“Document\JDY-16-V1.2(English manual).pdf”**

The physical diagram of module is shown in Fig.1.1.

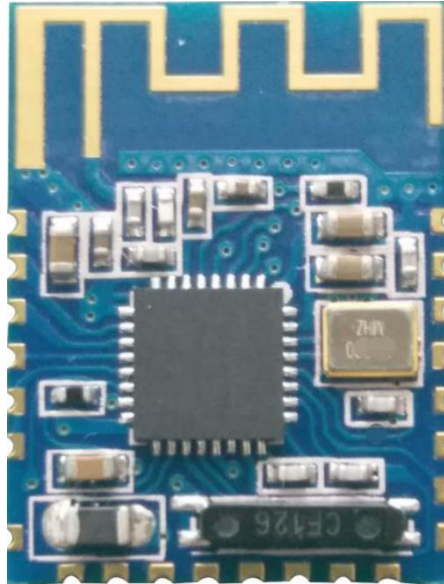


Fig.1.1 Bluetooth module

JDY-16 function introduction:

- ◆ BLE high speed transparent transmission supports 8K Bytes rate communication.
- ◆ Send and receive data without byte limit, support 115200 baud rate continuously send and receive data.
- ◆ Support 3 work modes (The description of AT+STARTEN instruction function).
- ◆ Support (serial port, IO, APP) sleep wake up.
- ◆ Support WeChat Airsync, WeChat applet and APP communication.
- ◆ Support 4 channel IO port control.
- ◆ Support high precision RTC clock.
- ◆ Support PWM function (can be controlled by UART, IIC, APP, etc.).
- ◆ Support UART and IIC communication mode, default to UART communication.
- ◆ iBeacon mode (support WeChat shake protocol and Apple iBeacon protocol).
- ◆ Host transparent transmission mode.

Steps of Bluetooth module test

1、We need to open the relative data, find and install the test software on the mobile phone (currently only Android is supported, and the IOS version will be released later). Software path:

“JDY-16\BLETestToos.apk”

2、 We need to download the test program to the Arduino-UNO r3 motherboard and open the serial monitor of the Arduino IDE. Program path: **“JDY-16\BleTest\BleTest.ino”**

3、 The LED of the Bluetooth module is flashing after power-on.

4、 We need to open the Bluetooth of Mobile phone, and open the test application interface as shown in Fig.1.2. Find the corresponding Bluetooth name (JDY-16) and click to connect. After the connection, the interface shown in Fig.1.3 will appear. At the bottom of the interface, the **“device connection successful”** prompt will appear. At this time, the Bluetooth module indicator is on.

There will be three options for testing different functions, because here we only test whether Bluetooth can be normal send and receive data, so we choose **“SK Service”**, click to enter the interface shown in Fig.1.4. There are also three options, we select **"SK-KEYPRESSED"**. We need to click to enter the interface as shown in Figure 1.5.

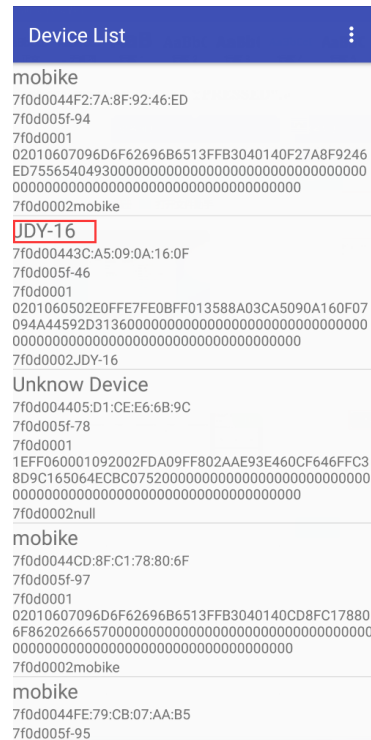


Fig.1.2 Device List Interface

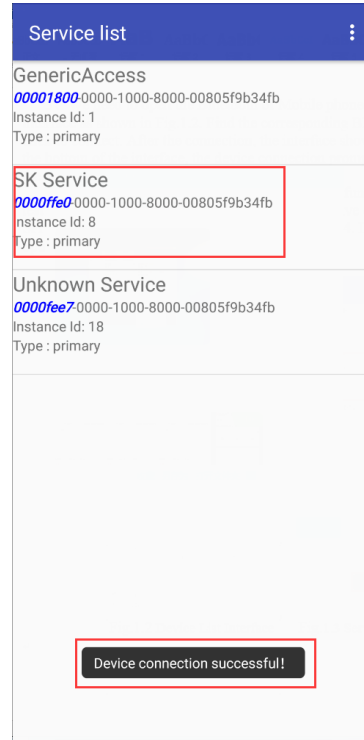


Fig.1.3 Service List Interface

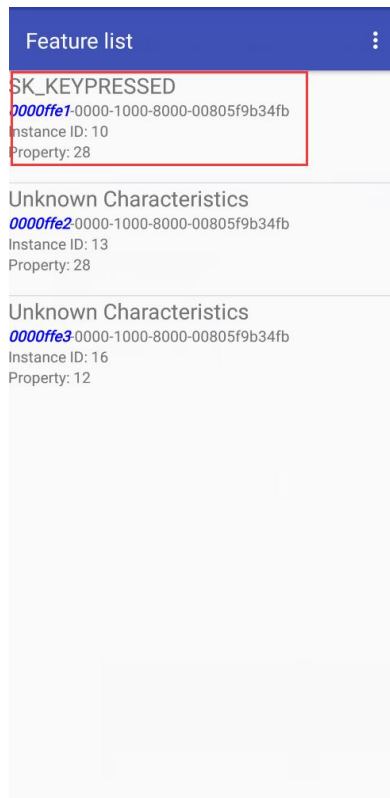


Fig.1.4 Feature List Interface

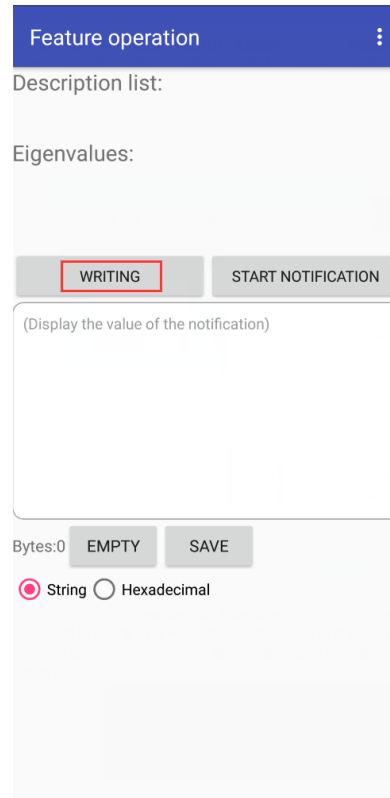


Fig.1.5 Feature Operation Interface

5、 We can see that there is a "**WRITING**" button, click it to enter the interface shown in Fig.1.6. We click on the "red box" to enter the data you want to send, click on the input "**SEND**" , the data will be sent. As shown in Fig.1.7.

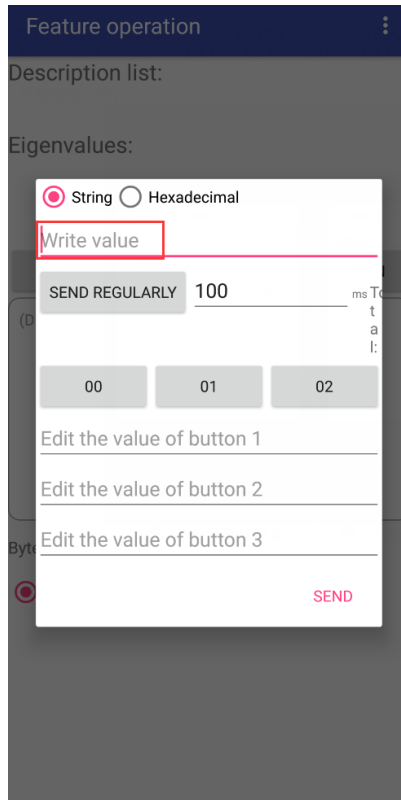


Fig.1.6 Write Operation Interface

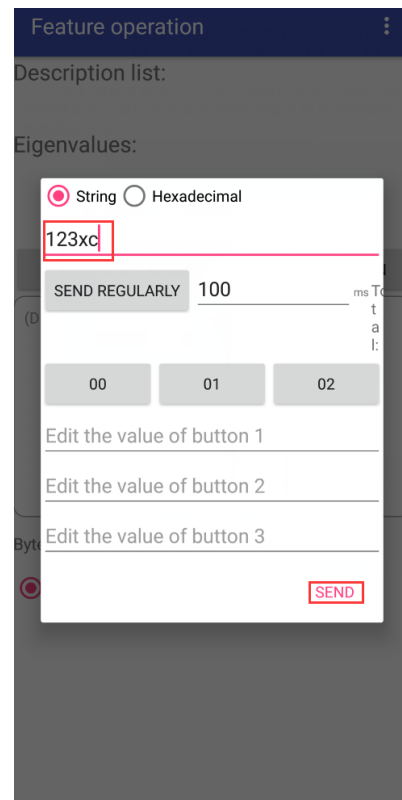


Fig.1.7 Send operation interface

6、 After clicking “**SEND**”, we can see that the content sent by the mobile phone is printed on the serial monitor, as shown in Fig.1.8, indicating that the Bluetooth module can send data normally.

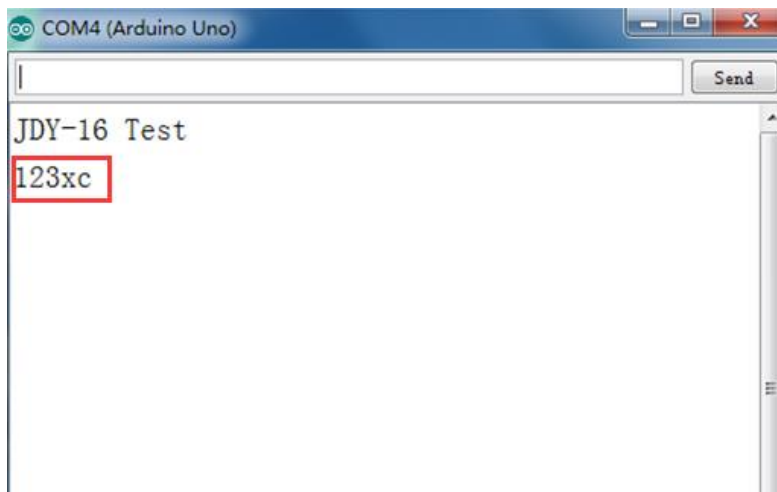


Fig.1.8 Serial Interface

7、 As shown in Fig.1.9, we can input the content you want to send on the serial monitor. After clicking “**Send**”, you can send the data to the mobile APP by Bluetooth module, as shown in Figure 1.10.

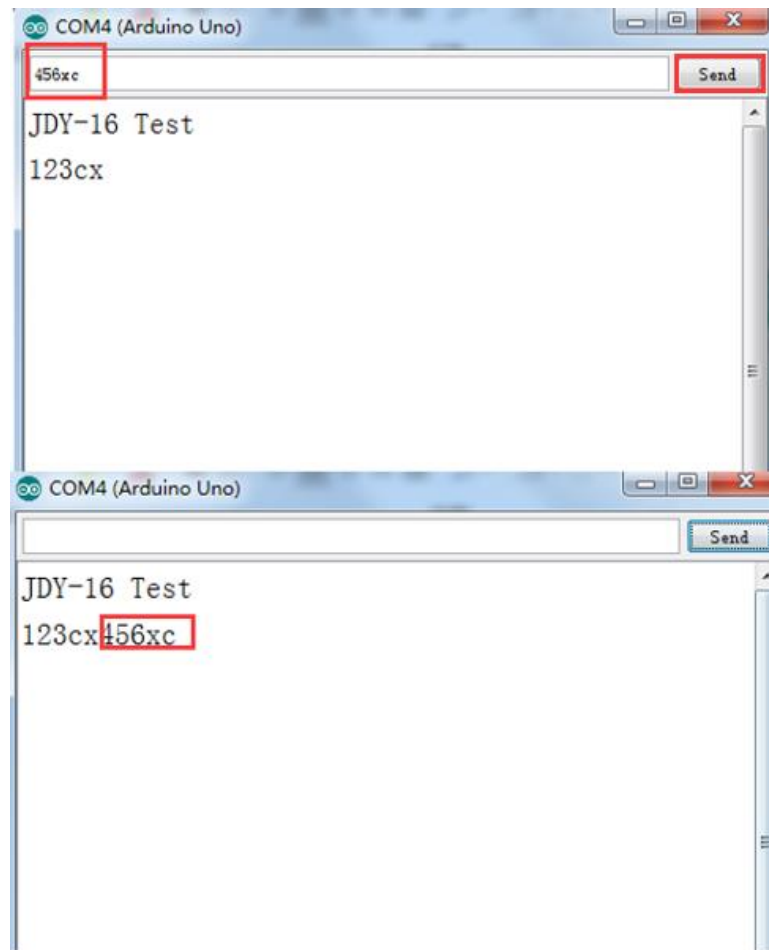


Fig.1.9 Serial Port Transmission

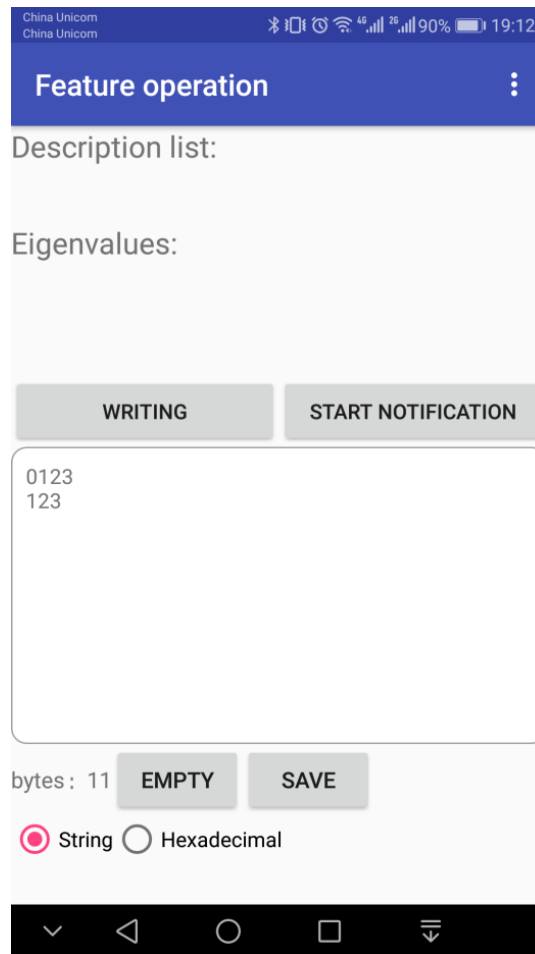


Fig.1.10 App reception schematic

If the above test can be successfully completed, it proves that both the PC end and the Android end can send and receive data normally, indicating that the Bluetooth module communicates normally, we can use it as a bridge between the "Smart Car" and the APP, and control the "Smart Car" to achieve a variety of functions.

3. Program Code

Program path: **“Lesson\Advanced Experiment\Buletooth.ino”**

```
byte comdata;

void setup()
{
  Serial.begin(9600);
  Serial.println("JDY-16 Test");
}

void loop()
{
  while (Serial.available() > 0)
  {
    comdata = Serial.read();
    delay(2);
    Serial.write(comdata);
  }
}
```