WLT8266BMG BLE Module

Quick Start Guide

V1.1

Introduction

This BLE module is designed to connect electronic products and smart mobile devices via Bluetooth Low Energy technology. It can be widely used in various application senario, such as industrial control, instrumentation, logistics tracking, health care, smart home, motion measurement, automotive electronics, leisure toys, etc. With WLT8266BMG module's integrated BLE stack, fine-tuned RF performance and power consumption, and module level BQB/FCC/CE certifcations, developpers can use this module to make their product development cycle much shorter.

The following is a table of different modules of our WLT8266BM product family:

Table 1　WLT8266BM Series Modules

Module type	Function	Size(mm)
WLT8266BMG	Wi-linktech Standard software BLE module,does not support software customization.Standard software functions including BLE passthrough data, AT Command control, Smartphone App configuration, OTA firmware upgrade. Provide Android/IOS APP reference source code	15×17
WLT8266BM	BLE modules with customized software per each customer specific needs. In addition to supporting all functions of WLT8266BMG, it also supports slave, host,Mesh networking, master-slave role switching, BLE/Mesh　switching and other working modes.	
WLT8266BME	Same software functions as　WLT8266BM, but with a smaller module mechanical size to adapt to more application scenarios.	11.2×15

Note： 1,Antena locates at the shorter edge of the module. For detailed size parameters, please refer to the details of 'WLT866BMG Data sheet'.

2,WLT8266BM supports mesh function, which can realize users' networking and multi-connection requirements. In addition, in order to solve the problem that the power consumption of Mesh is too high and BLE can not meet the needs of multi-connection , our company specially developed a BLE/Mesh switching technology to reduce the overall system power consumption while meeting the needs of users. For more information, please login at http://www.wi-linktech.com/ to contact our customer service.

3,WLT8266BMG，WLT8266BM，WLT8266BME each have a shielded version as well. If you need it, you can contact us.

4,For module samples and development boards, please login to Alibaba International Station https://www.alibaba.com/ search WLT8266BMG for purchase. Or login at http://www.wi-linktech.com/ to contact our customer service

About This Manual

《WLT8266BMG Quick Start Guide》　provides basic information of WLT8266 BMG module, including default parameters of module, part of AT instruction set and function description. Readers can refer to this document to have a certain understanding of the function of the module, and can simply test the operation of the module according to the document. For detailed functional documents, please login at http://www.wi-linktech.com/ to contact our company or customer service.

Version History

Version Information Management

Vision	Date	Update Record	Editor
V1.0	2018.12.13	Instructions for use, default parameters, operating methods, function description	Shanshan.Xu Enqing.Li
V1.1	2019.02.19	Add introduction	Eric

Content

1. About WLT8266BMG BLE Module

1.1 Use and obtain of Development Board

1) Instructions：

Method 1: (final connection as shown in Figure 2)

As shown in Figure 1: The red circle is the power and serial interface. Use the mini USB cable or micro USB cable to connect one of them.

At the same time, the yellow circled TXD RXD is connected with a jump.

Method 2: (final connection as shown in Figure 3)

Use the USB to serial port tool to connect V (3v3), G (GND), TXD, and RXD (the TXD RXD is close to the module end) in the yellow circle shown in Figure 1. The connection mode of the TXD and RXD interfaces is shown in Figure 4. This method does not require wiring in the red circle.

Note: SWS is the download port and is not used when it is used.
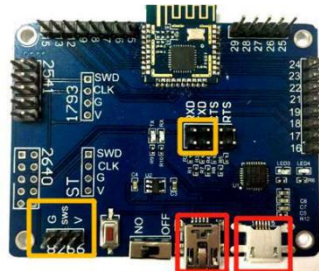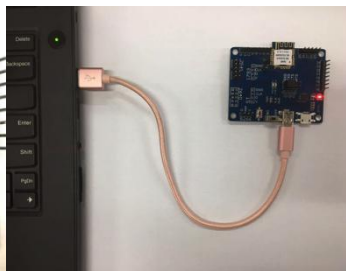

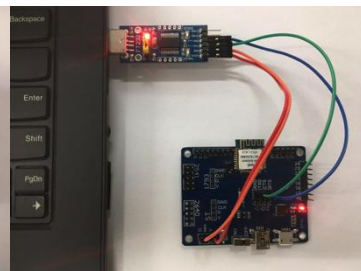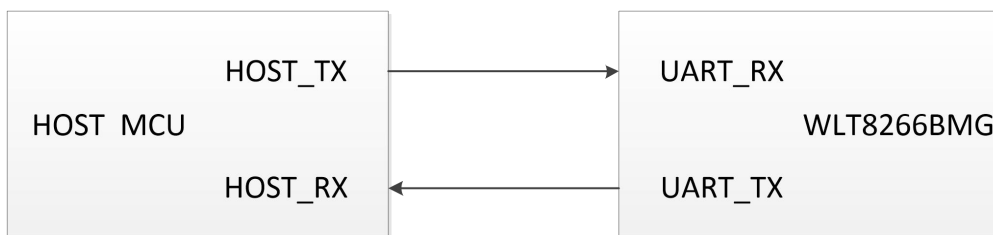Figure 1.   Figure 2.   Figure 3.

Figure 4. UART connection between WLT8266BMG and Host MCU

2) Method of Obtaining：

Development Board can be obtained from our company at http://www.wi-linktech.com/ or customer service.

1.2 Module Factory Default Configuration

- ▸ Baud Rate：115200
- ▸ Equipment Name：WLT8266BMG
- ▸ Broadcast Interval：48（30ms）

      48 is the set program parameter,the broadcast time interval is 30ms.

- ▸ Transmitting Power：10（8dBm）

      10 is the set program parameter,the transmit power is 8dBm.

1.3 Test Tools and Sources

- ▸ Mobile Phone Transmission Test Tool：
  - iOS：light blue
    - App Store can search for light blue;
  - Android：WLT connect
    - Search for "Wei Lintong（维霖通） Test Software" through Baidu Mobile Assitant to download;
- ▸ Computer Serial Assistant Tool：
  - Friendly Serial Assistant
    - Baidu search for"Friendly Serial Debugging Assistant 友善串口调试助手"download or other serial port assistants；
- ▸ OTA Firmware Upgrade Tool：
  - OTA
    - OTA upgrade tool is required for customized software,you can contact our company or customer service to obtain;

Figure 5.

2. Module Function

2.1 Mode Selection

1) Bluetooth Connection Status Indication

GPIO_PE5 indicates the Bluetooth connection status：

Bluetooth connection – high level

Connection disconnected – low level

2) Pass through Transmission and Command Mode Switching Mode

The Bluetooth module has two modes: command mode and Passthrough Transmission mode:

‣When the Bluetooth module is not connected,it is command mode；

‣When the Bluetooth module is connected,the mode of the Bluetooth module is controlled by the level of GPIO_PE4:

GPIO_PE4 high: Pass through Transmission Mode

GPIO_PE4 low: Command Mode

3) Module Prompt Information

► +IND=BLECONNECTED<CR><LF>

 Prompt module is connected

► +IND=BLEDISCONNECTED<CR><LF>

 Prompt module disconnected

► +IND=Enter AT Cmd Mode<CR><LF>

 Prompt module to enter AT command mode

► +IND=Enter Throughput Mode<CR><LF>

 Prompt module to enter pass through Transmission mode

2.2 AT Command Mode

According to 1.1 1) use the module to complete the wiring, open the   serial assistant tool, you can test the instruction; pay attention to the instruction transmission format when the instruction is tested, there should be a line break after each instruction; the instruction and test chart are as follows.Detailed instruction set,please refer to 'WLT8266BMG User manual'
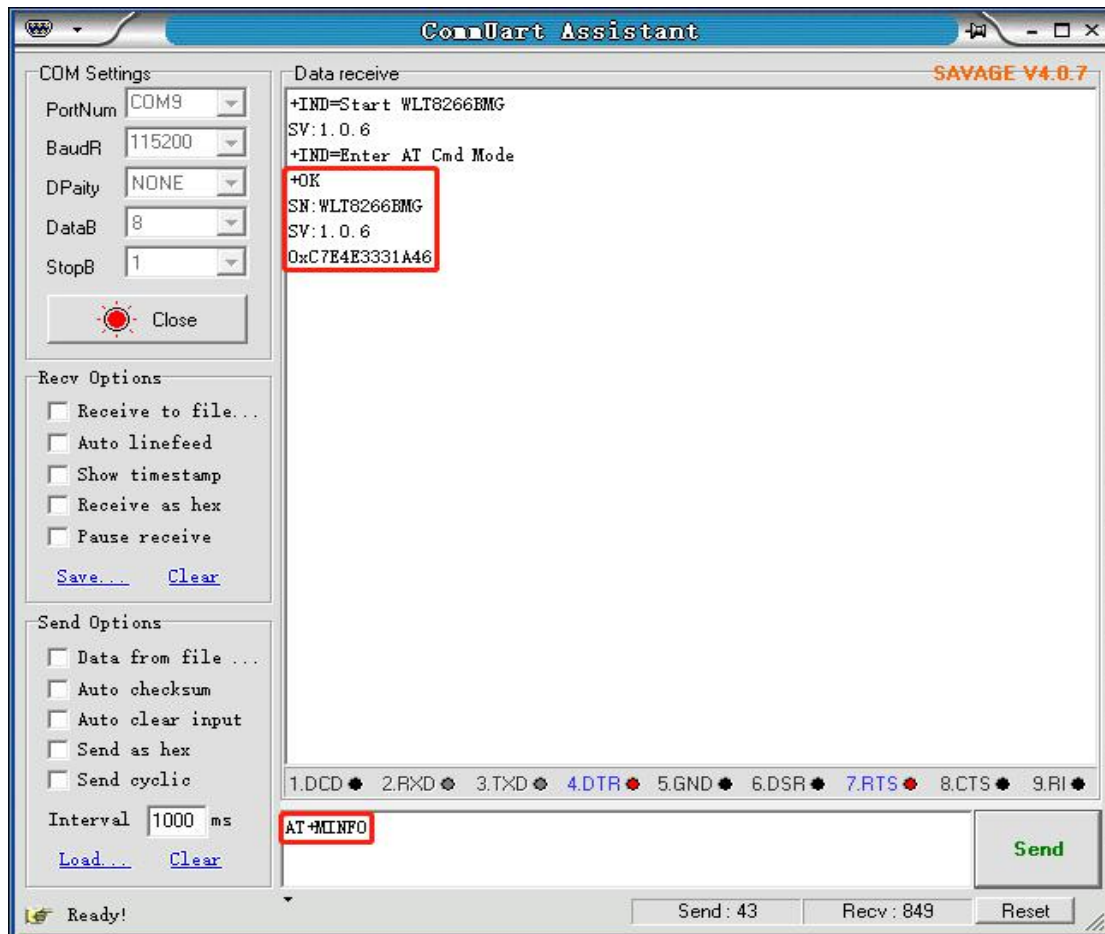
Figure 6.

1) Some of the instructions are as follows：

►AT+MINFO
    Function: Get module information
    Format:
      Send：AT+MINFO（line feed）
      Reply：+OK（line feed）
          SN：WLT8266BMG（line feed）
          SV ：<SV>（line feed）
          < address >（line feed）
      Parameters： <SV>：Software version number
               < address > ：Bluetooth current mac address

►AT+RESET
    Function: Restart the module (ie: reset)
    Format：
      Send：AT+RESET（line feed）

►AT+SETNAME

Function: Set the module name

Format:

Send：AT+SETNAME=WLT（line feed）

Reply：+OK

►AT+GETNAME

Function: Get the module name

Format:

Send: AT+GETNAME (line feed)

Reply: +OK= WLT

►AT+SETBAUD

Function: Set the module baud rate

Format:

Send: AT+SETBAUD= 9600 (line feed)

Reply: +OK

Parameters: baud rate: the baud rate to be set can be:

9600, 19200, 38400, 57600, 115200

Note: If the baud rate is reset and the module is restarted, it needs to be modified on the serial assistant to keep the baud rate consistent with the module.

►AT+GETBAUD

Function: Get module baud rate

Format:

Send: AT+GETBAUD (line feed)

Reply: +OK= 9600

2.3 Pass through Transmission mode

2.3.1   iOS：light blue

Use light blue to search and connect the module, as shown in Figure 7, to view the following features:

 1)   Broadcast Package Content：

The content of the broadcast package includes the Bluetooth name and the Bluetooth MAC address. The app can filter the device according to the content of the broadcast package. After the Bluetooth connection is successful, click "Show" in Figure 8. The content of the broadcast package is as shown in Figure 9 below:

2) Device Information Content：

The device information includes the software version number. You can view the version information directly through the app. You do not need to view the serial port message, as shown in Figure 10 below.

| Figure 7. | Figure 8. | Figure 9 . | Figure 10. |

3) Data transmission channel - UUID: 0xFFF0

Data transparent transmission channel, data interaction between mobile phone and module, There is Notify (0xFFF1): Receive mode & Write (0xFFF2): Send mode, as shown in Figure 11;

Figure 11.

①Notify（0xFFF1）：Receive mode
Click listen for notifications to enter the receiving state, the serial port sends hexadecimal (ASCII) data, and the mobile phone receives, as shown in Figure 12;
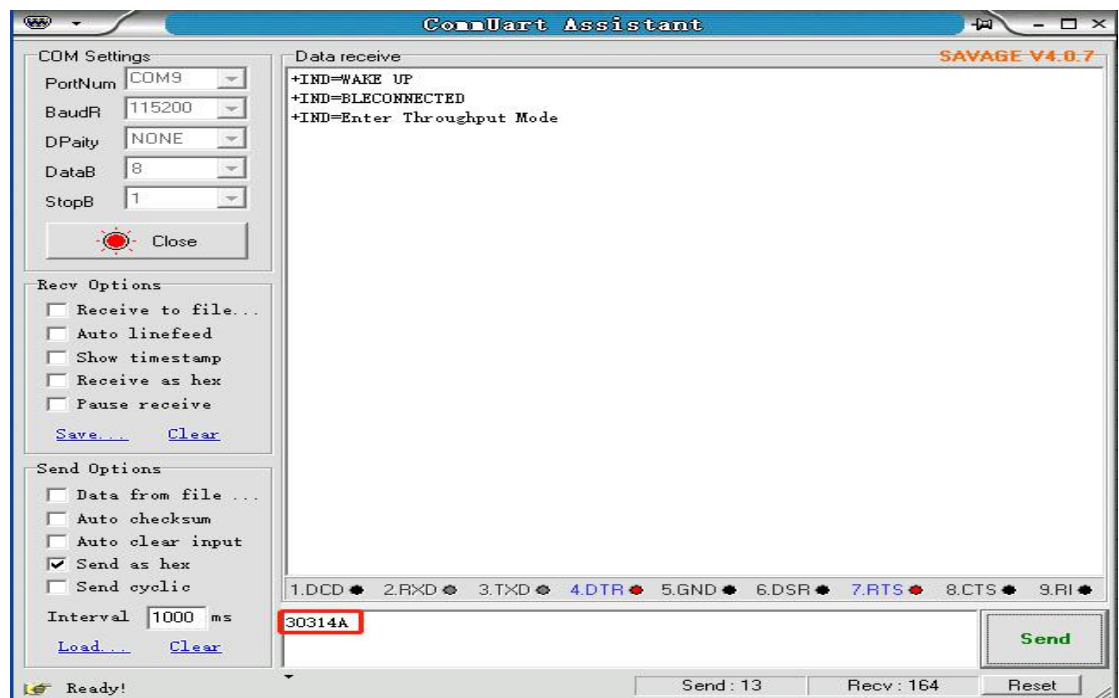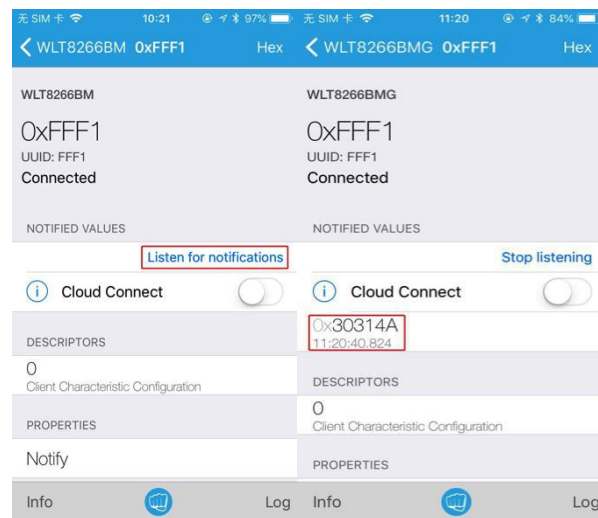
Figure 12.

②Write（0xFFF2）：Send Mode：

Click write new value to enter the sending state, the mobile phone sends hexadecimal (ASCII) data, serial port reception, as shown in Figure 13;
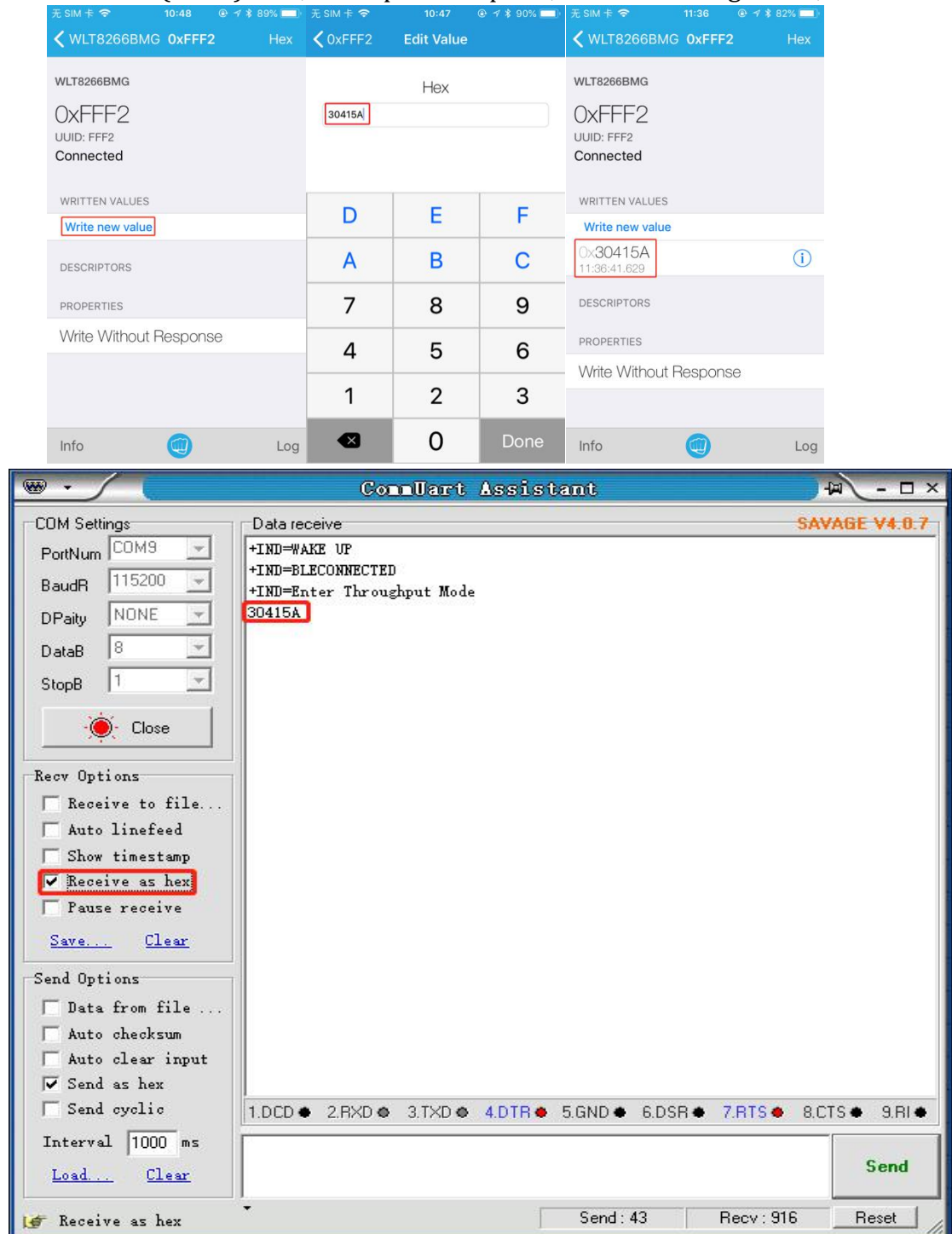

Figure 13.

2.3.2 Android：WLT connect

Use the WLT connect test software to search and connect the module,as shown in Figure 14;
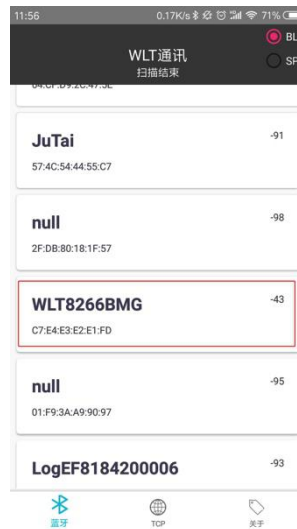

Figure 14.
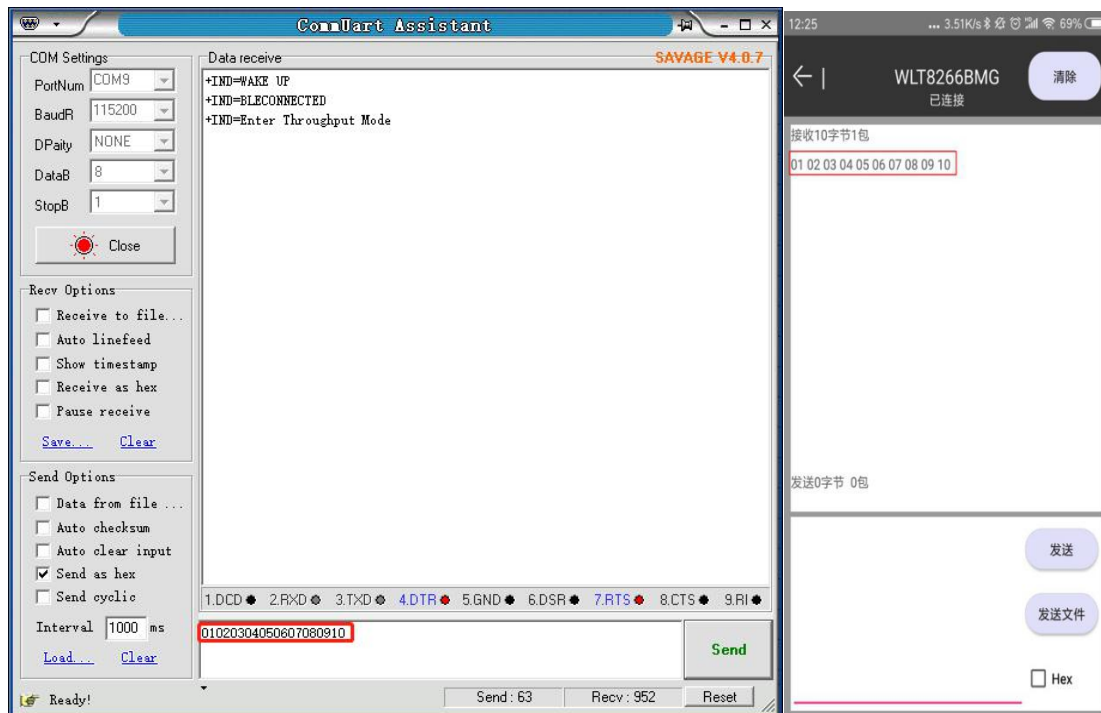
1）Receive Mode, as shown in Figure 15.

Figure 15.

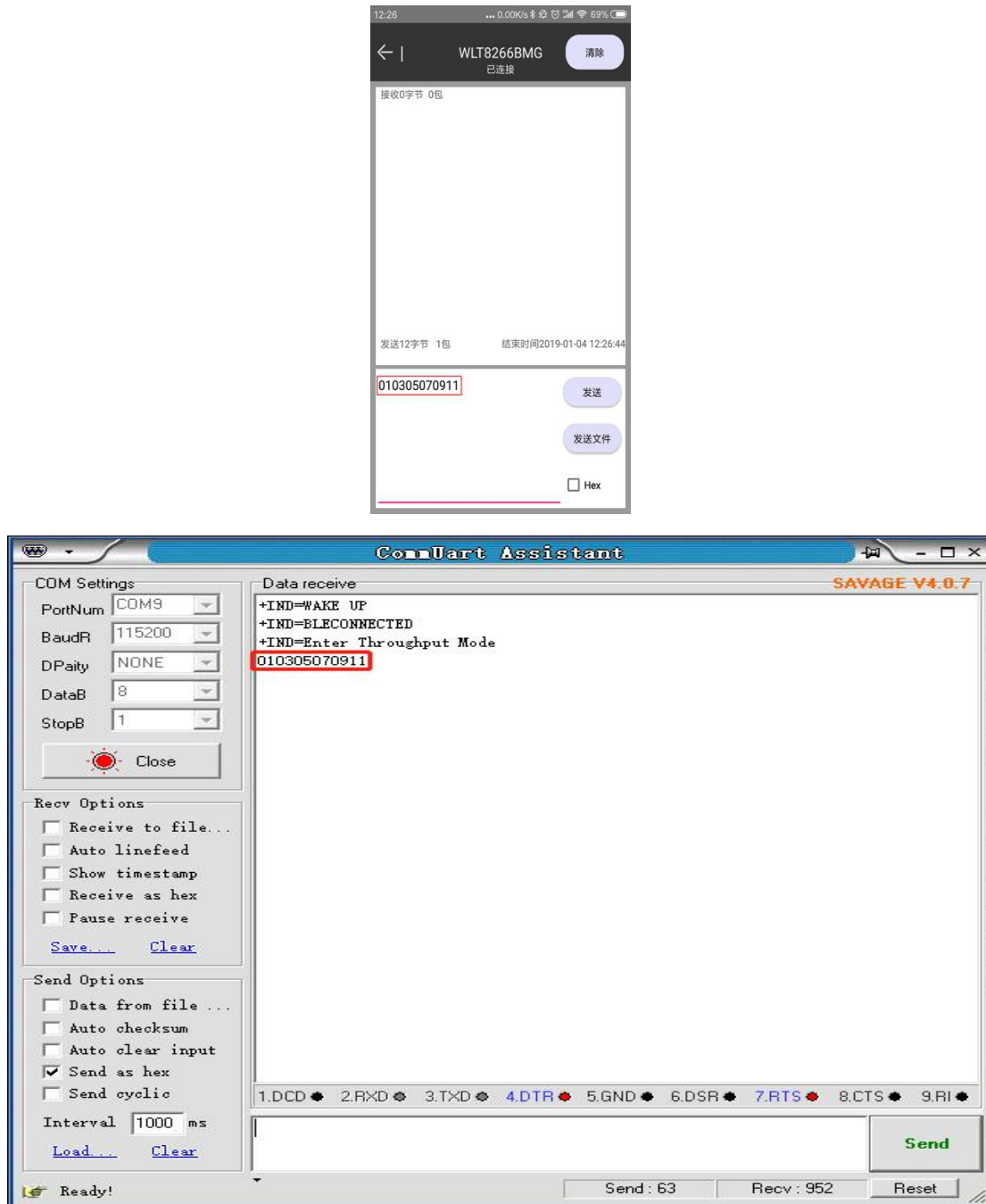**2）Send Mode**, as shown in Figure 16;

Figure 16.

2.4 Configuration Mode

1）APP configuration channel - UUID: 0xFFE0

UUID：0xFFE0 channel is used to directly change some parameters of Bluetooth by using APP, as shown in Figure 17;

Figure 17.

Click write new value, enter the hexadecimal format (ASCII code) of the AT command and send it, as shown in Figure 18, 19 (the legend is the hexadecimal code of AT+MINFO);

Note: 1. Each line instruction needs to add a line break at the end: 0D (<CR>), 0A (<LF>);

2. Abnormal instruction data is not processed and not transmitted;

3. The AT command set of the APP configuration is the same as the AT command set of the AT mode.
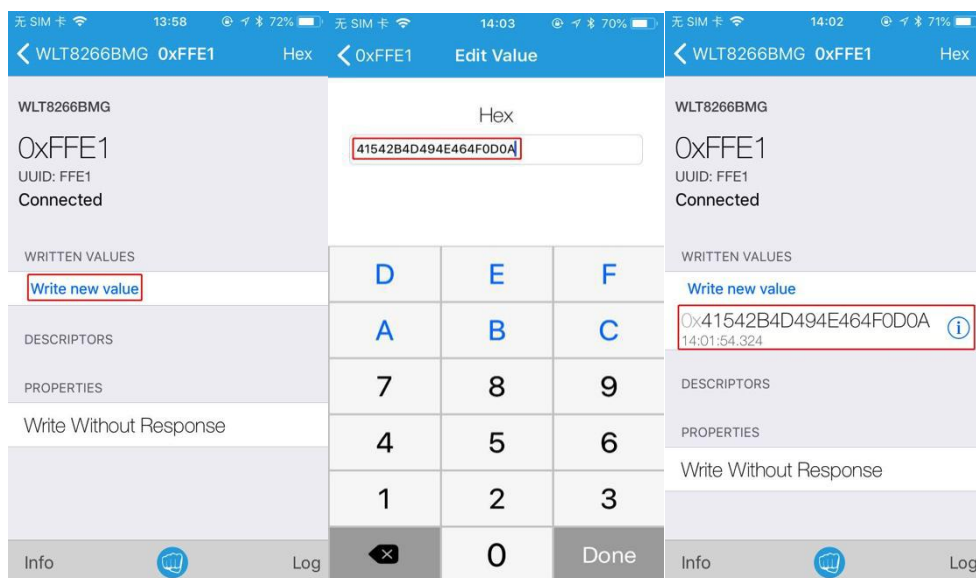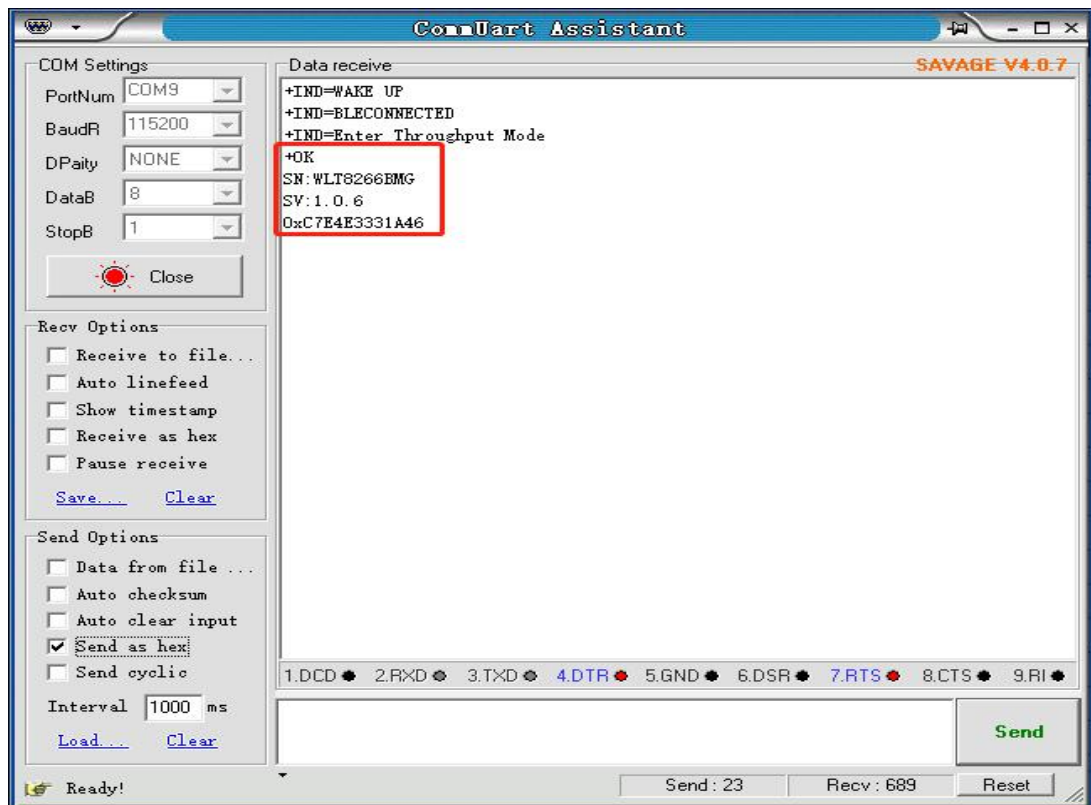

Figure 18.

Figure 19.

2.5 Sleep Low Power

The module contains the sleep mode, and uses the command to send AT+SLEEP=1 to enter the sleep mode. There are two wake-up modes, one is AT+SLEEP=0 and the pin GPIO_PD5 is high-level wake-up; the other is Bluetooth connection wake-up.For details of power consumption, please contact our company or customer service for detailed documents.

2.6 OTA Upgrade

The module contains OTA upgrade function. The firmware of the module can be updated by using mobile APP. For more information, please consult the "WLT8266BMG User manual".