BLE-USB Quick Start

Apr. 2017 Version 1.2

BLE-USB - USB to Bluetooth Low Energy Converter

Package Contents:

1. BLE-USB
2. Quick Start
3. CD

Note:

If any of these items are missed or damaged, contact the local distributors for more information. Save the shipping materials and cartons in case you want to ship in the future.

1. Installing Driver and Utility

i. **Installing BLE_USB_driver at first.**
CD: Bluetooth \Windows Driver\
Web:ftp://ftp.icpdas.com.tw/pub/cd/ble_cd/ble-usb/software/windows%20driver/

ii. **Installing Utility**
CD: Bluetooth\Utility
Web: **ftp://ftp.icpdas.com.tw/pub/cd/ble_cd/ble-usb/software/utility**

iii. **Insert the BLE-USB into your computer, and you can find out COM Port Number in the "Device Manager." Refer to the user manual for more details.**
CD: Bluetooth\Document
Web: **ftp://ftp.icpdas.com.tw/pub/cd/ble_cd/ble-usb/document**

2. Basic Concept Introduction

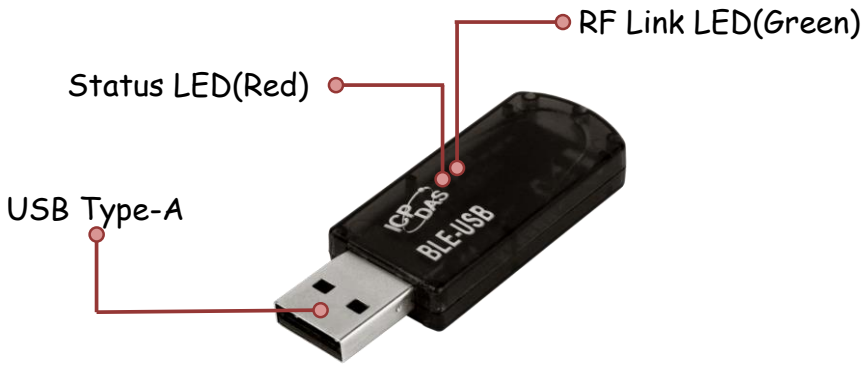
- Broadcast mode

Broadcast mode is the new feature in the Bluetooth LE. The Broadcaster device broadcasts packets to every device around it. The Bluetooth LE Observer device can receive the information without connection. **Broadcast mode is one-way data communication.**

- Connection mode

In the connection mode, the Slave only can connect to a Master, but the Master can connect to three Slaves. The Slave will not send broadcast packet after link has been established. The Master and Slave could send data after a link has been established.

3. LED Indication



LED Indicator	LED Color	Description
RF Link	Green	The connection status of Bluetooth LE
Status	Red	The module status of BLE-USB

The LED had different pattern in the connection and broadcast mode. Refer to user manual for more detail (chapter 2.2.1).

4. Testing Communications

The utility supports two types for the module test. The “connection Mode” is used to test module in the connection mode. The “Broadcast Mode” is used to test the module in the broadcast mode. Refer to user manual for more detail (chapter 4.3).

Connect both the BLE-USB and tBLE-720 to the Host PC via the USB and RS-232. You may need to use two serial port tools to simulate the data transmission.

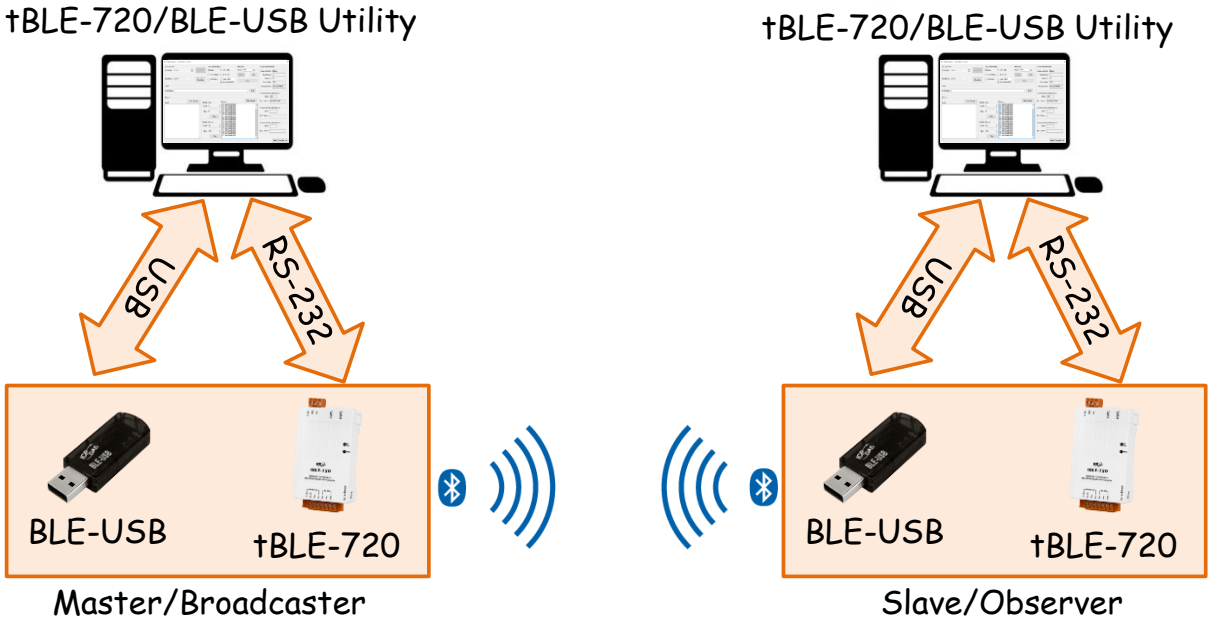


Figure 4-1 the architecture of test

i. Connection Mode

It needs two devices in the connection test. One is the Master; the others are slaves. Make sure the Group ID is same.

The BLE-USB needs setting before the test. Please follow the procedure below:

***Step1*:** Open the tBLE-720/BLE-USB utility, open the "Basic Parameter Setting" page.

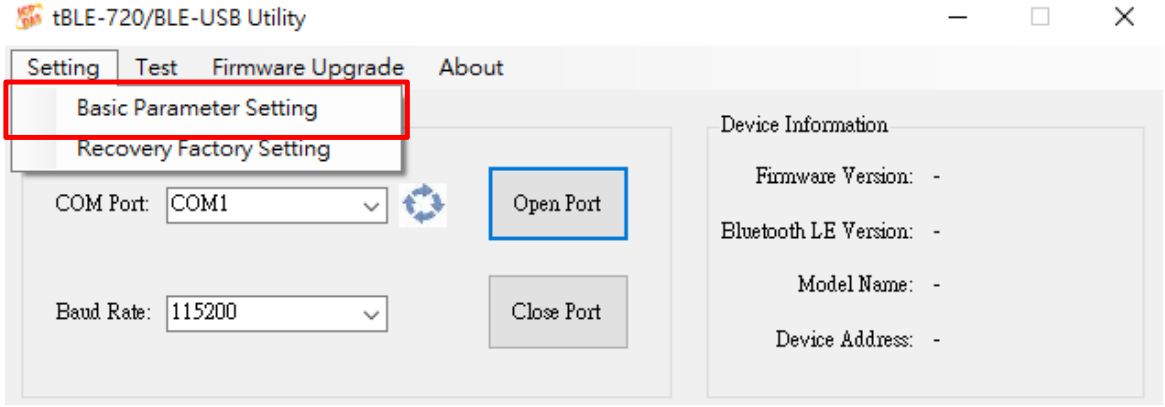


Figure 4-2 open the basic parameter setting page

***Step2*:** Open the COM Port (the default baud rate is 115200), and click the "Next" button.

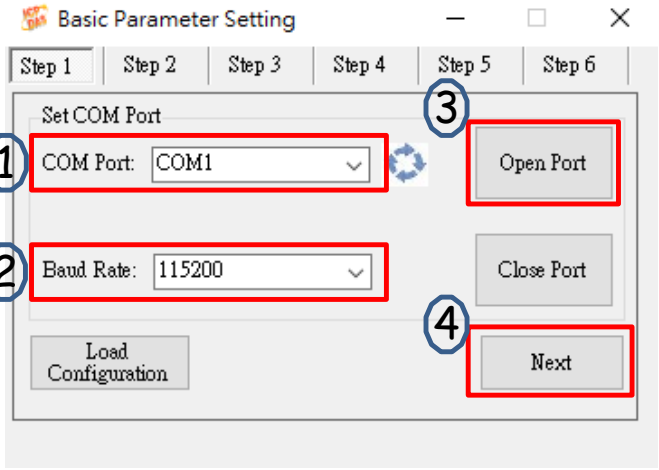


Figure 4-3 open the COM port

Step3*:** Skip the broadcast parameter setting. ***You need one Master and one Slave in the test. You also can change the "Group ID".

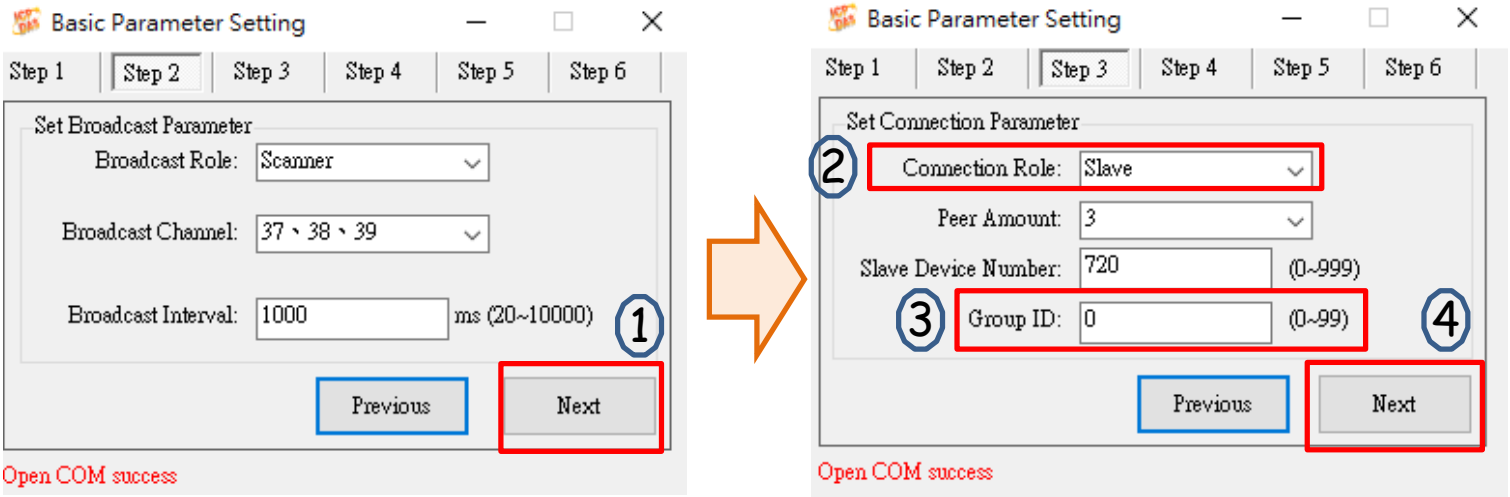


Figure 4-4 change the connection parameter

***Step4*:** Enable or disable the Mater identify mechanism. The identify key must be same in the Master and slave. The concept of Mater identify mechanism can refer to the user manual (Chapter 1.6).

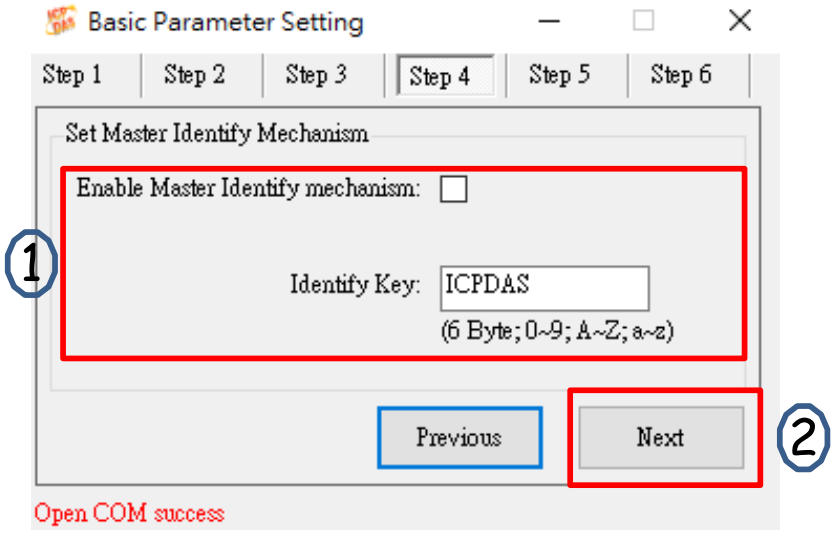


Figure 4-5 Master identify mechanism setting

Step5*:** Change the "Send Mode" to the ***connection mode, and click "Upload Setting" button.

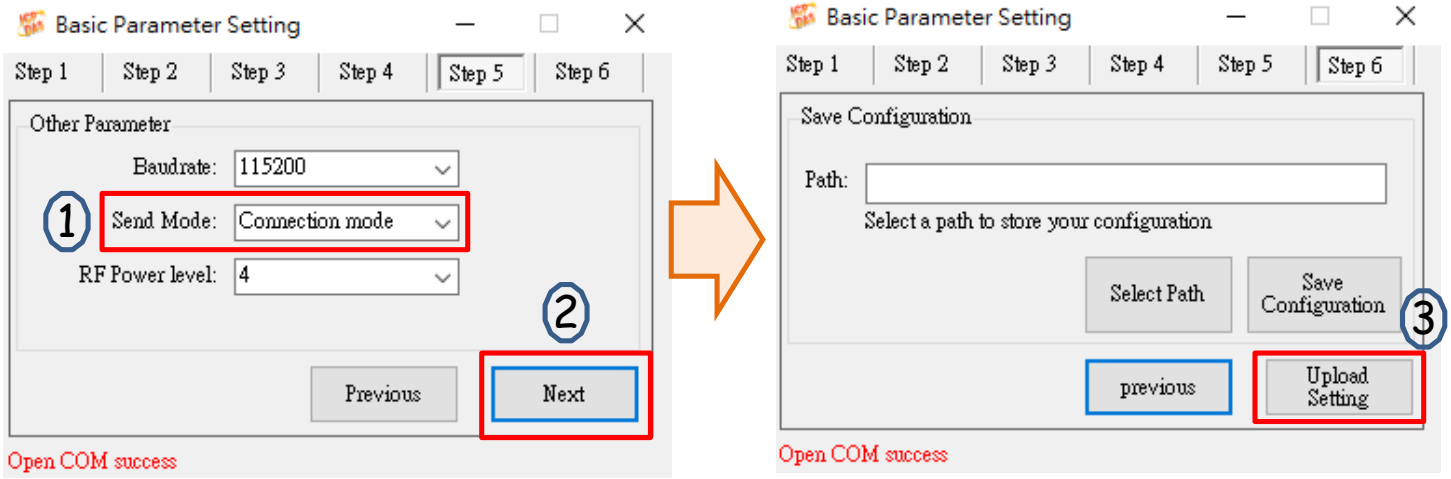


Figure 4-6 change to connection mode

***Step6*:** open "Connection Mode" page.

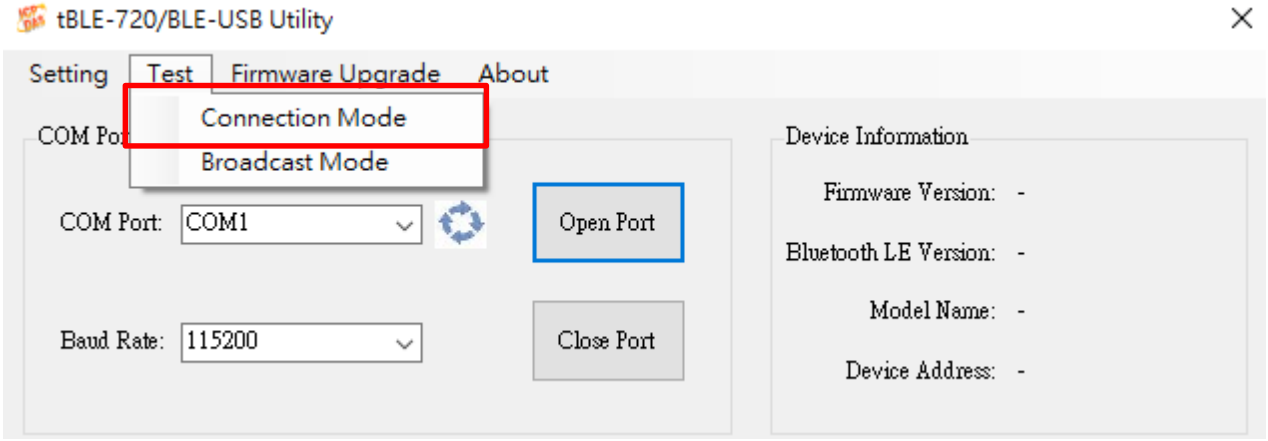


Figure 4-7 Testing connection mode on utility

***Step7*:** open the COM port, and send the data to the peer device.

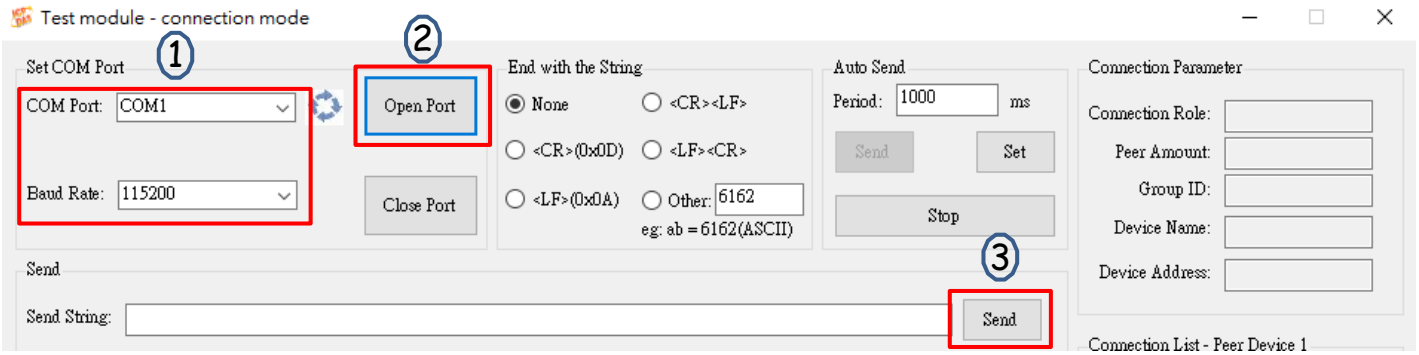


Figure 4-8 open COM port and send data

➢**Send data to peer device and receive Data**

You can type data in the textbox and click the "Send" button. The data of textbox will send to the peer device. This data will also show print to the textbox.

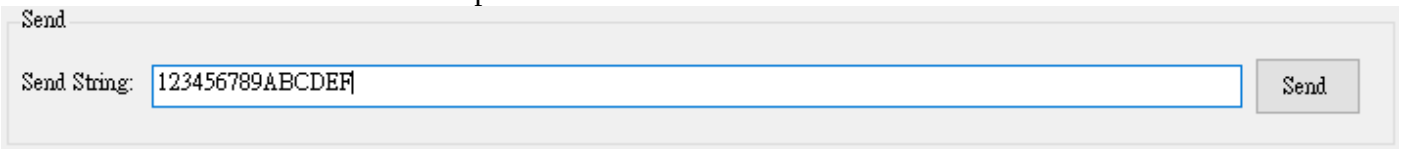


Figure 4-9 send data to the peer device

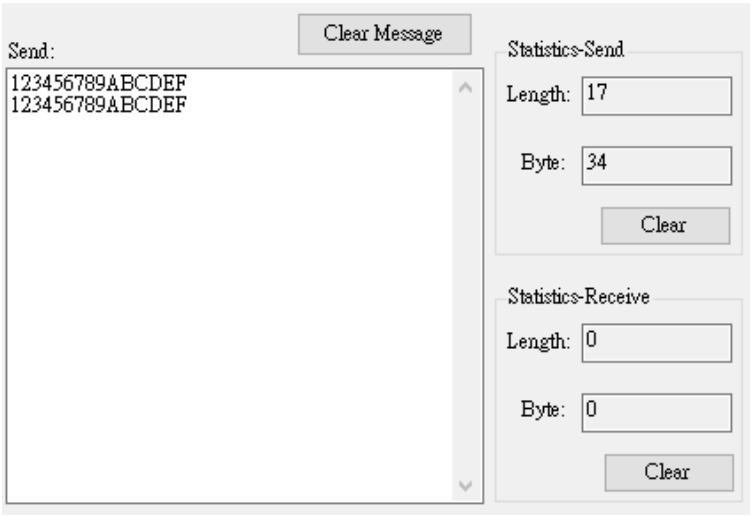


Figure 4-10 print data in the textbox

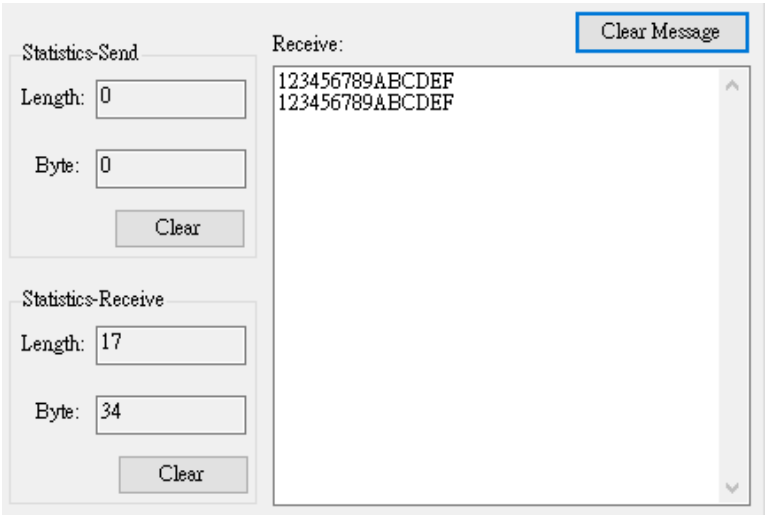


Figure 4-11 Receive data from peer device

ii. Broadcast Mode

It needs two devices in the broadcast test. One is the Broadcaster; the others are Observers. Make sure the Group ID is same.

The BLE-USB needs setting before the test. Please follow the procedure below:

***Step1*:** Open the tBLE-720/BLE-USB utility, open the "Basic Parameter Setting" page as shown in the Figure 4-2.

***Step2*:** Open the COM Port (the default baud rate is 115200), and click the "Next" button.

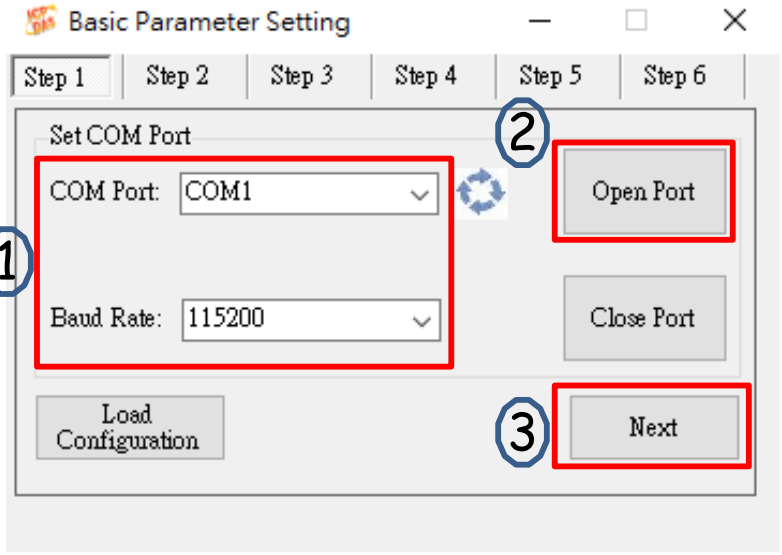


Figure 4-12 open the COM port

Step3*: *You need one Broadcaster(Advertiser) and one Scanner (Observer) in the test. Skip the connection parameter setting. The broadcast channel and group ID must be same in the Advertiser and Observer.

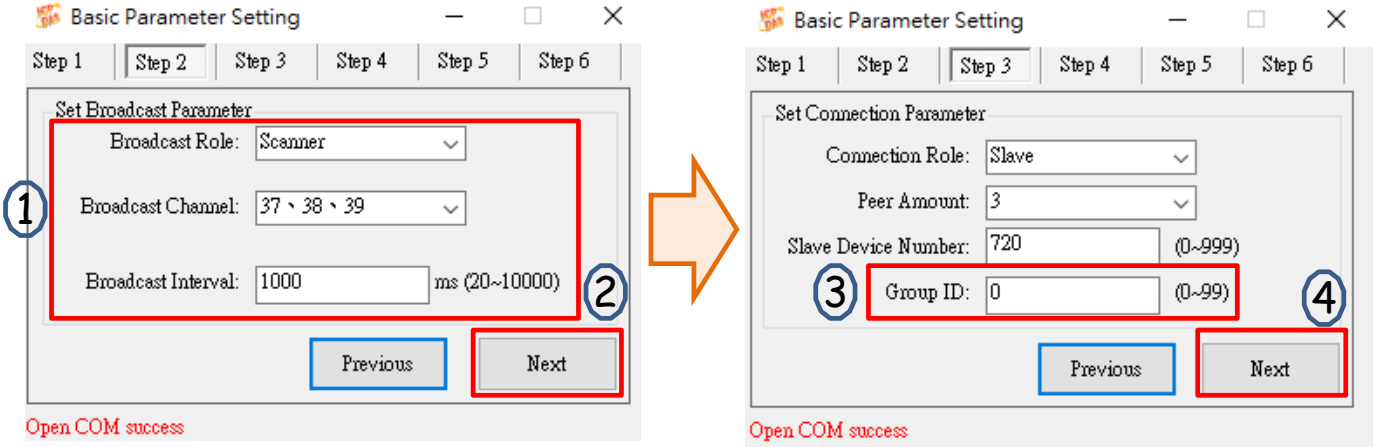


Figure 4-13 change the connection parameter

***Step4*:** Enable or disable the Mater identify mechanism (refer to **Figure 4-5**). The identify key must be same in the Master and slave. The concept of Mater identify mechanism can refer to the user manual (Chapter 1.6).

Step5*:** Change the "Send Mode" to the ***Broadcast mode, and click "Upload Setting" button. The utility will upload the setting to the BLE-USB.

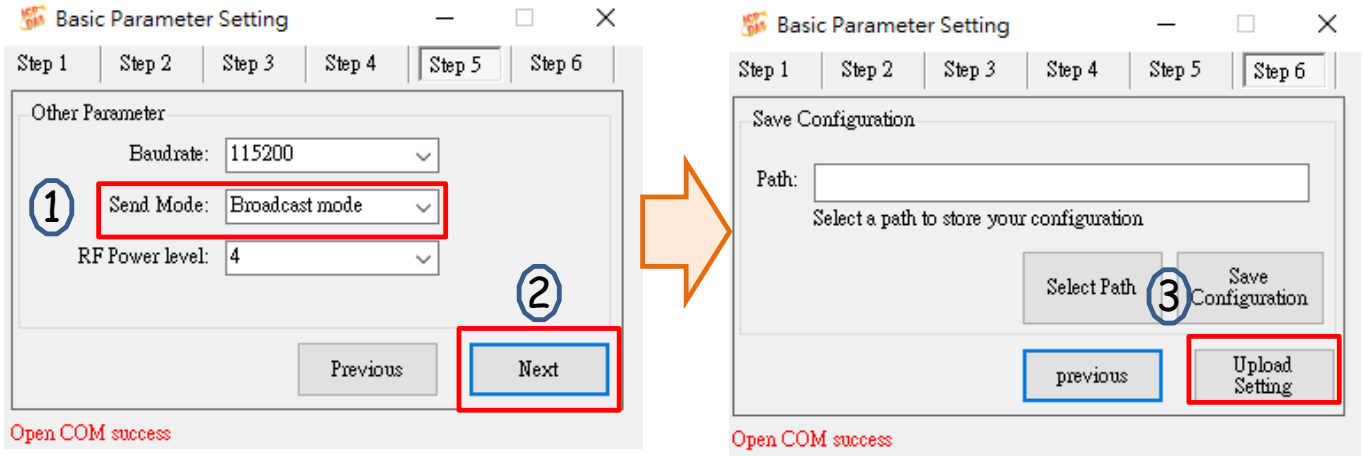


Figure 4-14 change to broadcast mode and Upload the setting

***Step6*:** open ”Broadcast Mode” page.

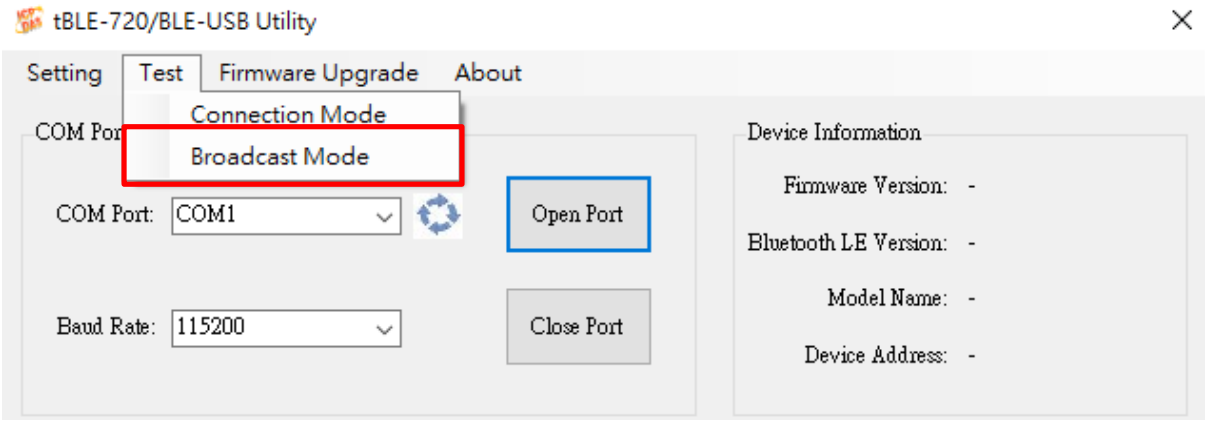


Figure 4-15 Testing broadcast mode on utility

***Step7*:** open the COM port. Only the Broadcaster can send the packet to the Observer. The Observer only can receive the broadcast packet without connection.

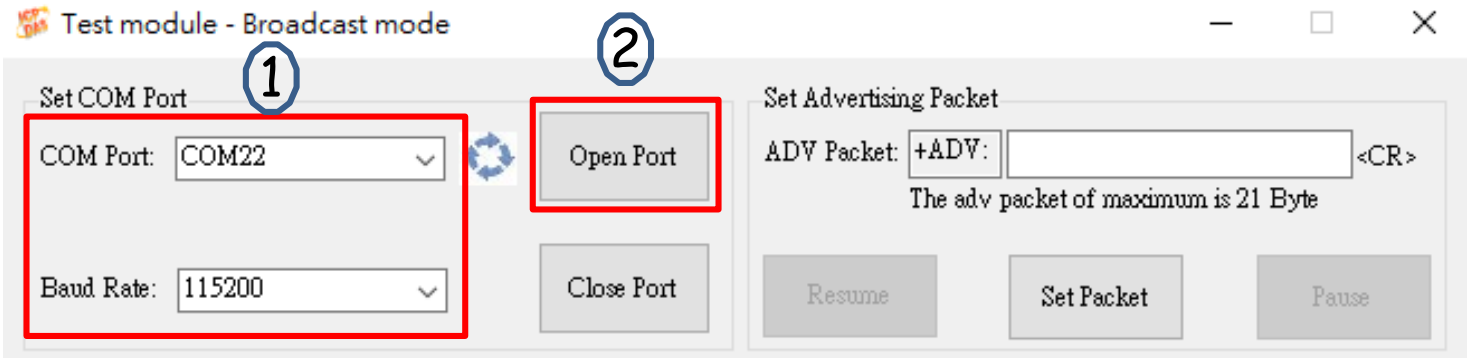


Figure 4-16 Open the COM port

➢Broadcaster (Advertiser): set the broadcast packet, and click “Set Packet” button. The Advertiser will start to send the broadcast packet.

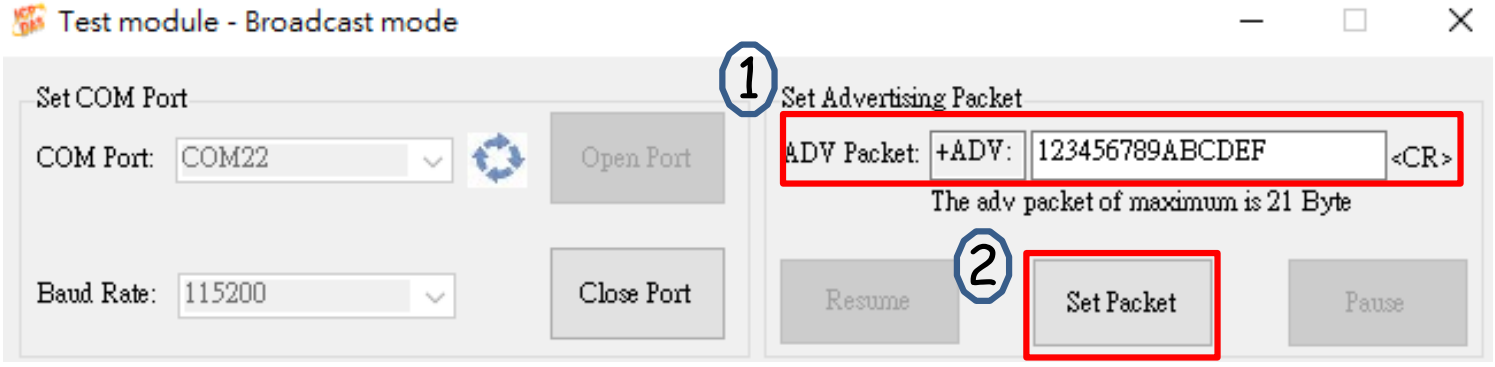


Figure 4-17 Set the broadcast packet

➢ Observer (Scanner): When the Observer receives the data from the Advertiser, and it will show in the textbox.

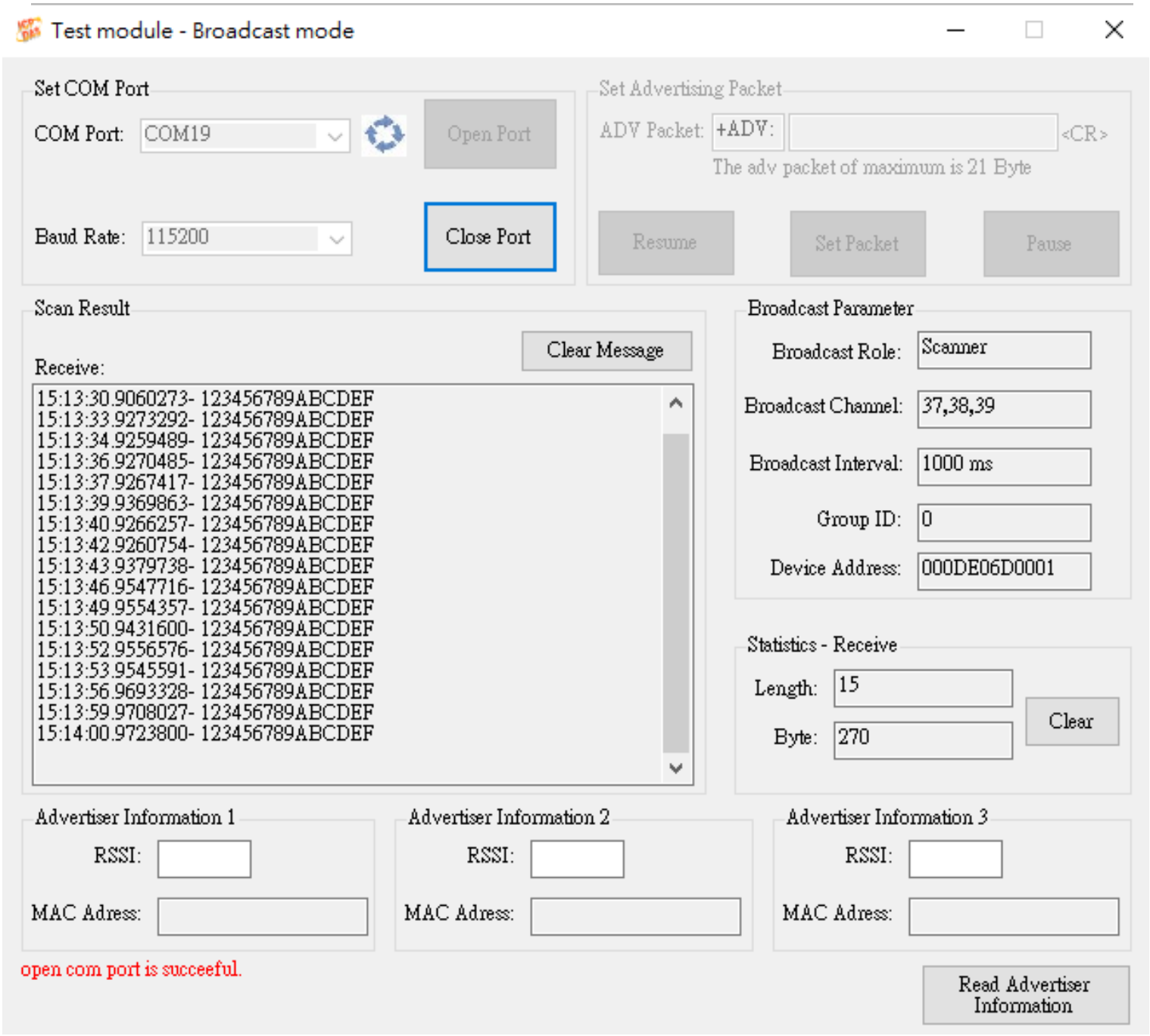


Figure 4-18 Receive data and show in the textbox

5. Support

Please contact us if you have any questions about products.

ICP DAS website: http://www.icpdas.com
Email: service@icpdas.com