

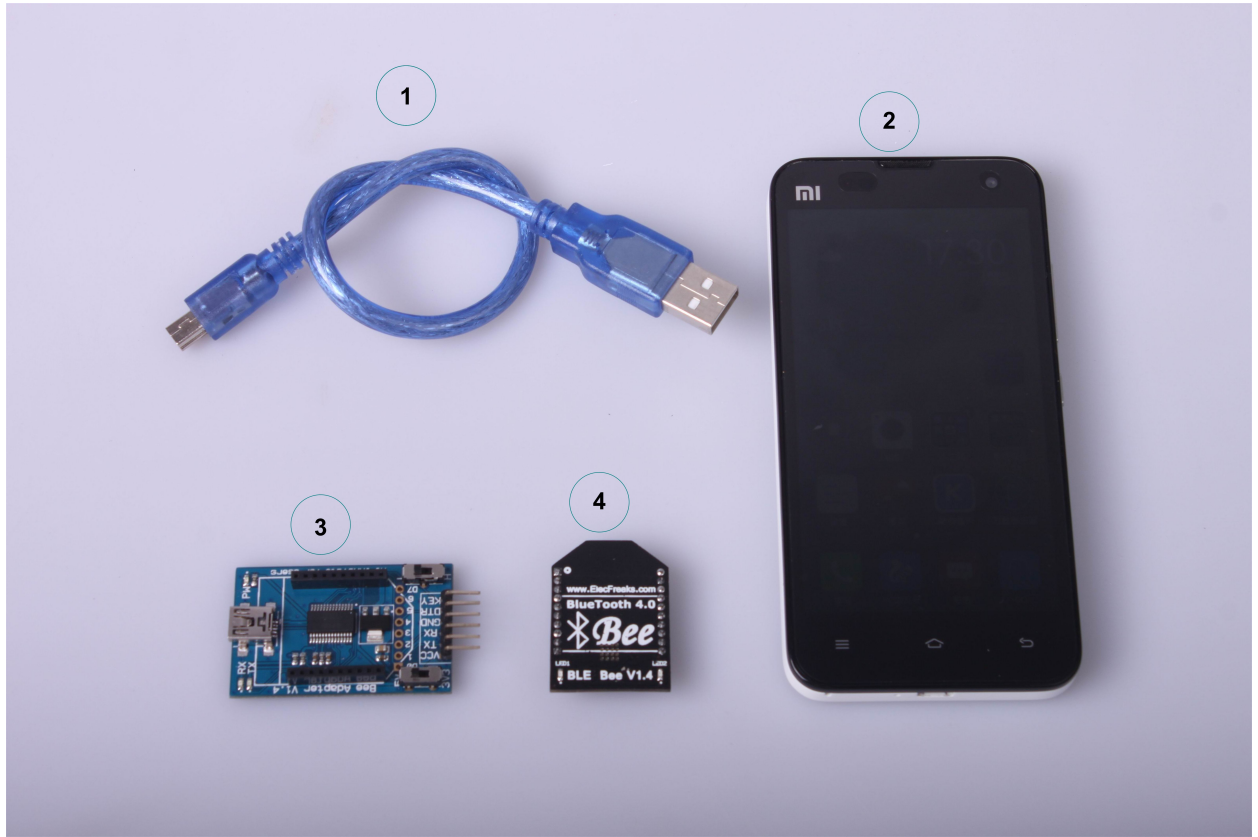
1. General description

The BLE Bee is a Bluetooth 4.0 BLE and compatible with Xbee. You can use it with Arduino and other MCU. Using with our APP, you can easily control robot ,drone and others by BLE.

Adopting TI CC2540 chip with 256 KB space, the BLE Bee module can use BLE technology through the simple IO control, between the module and mobile, also between the module and module. The BLE module has both Master and Slave Mode, with the command control, through the serial port capable of switching module master-slave role, capable of configuring the serial port baud rate, capable of modifying the module radio name, capable of modifying the broadcast interval and the connection interval. Using this module, users can quickly transmit data in the form of Bluetooth packet.



2. Hardware and Software Preparation



Hardware:

1. USB Cable
2. Android 4.3 System, Bluetooth 4.0 Mobile
3. Bee Adapter V1.4 Module
4. BLE Bee Module

Software:

1. Serial port debugging software (sscom32E)
2. EF BLE APP

3. Operating Steps

Part 1 Communication between two BLE Bee modules

Step 1 Connect the two BLE Bee modules to the computer

1. Plug the BLE Bee into the Bee Adapter V1.4 as following shows



2. Connect one BLE Bee like above to the computer, so does another BLE Bee module.

Note:

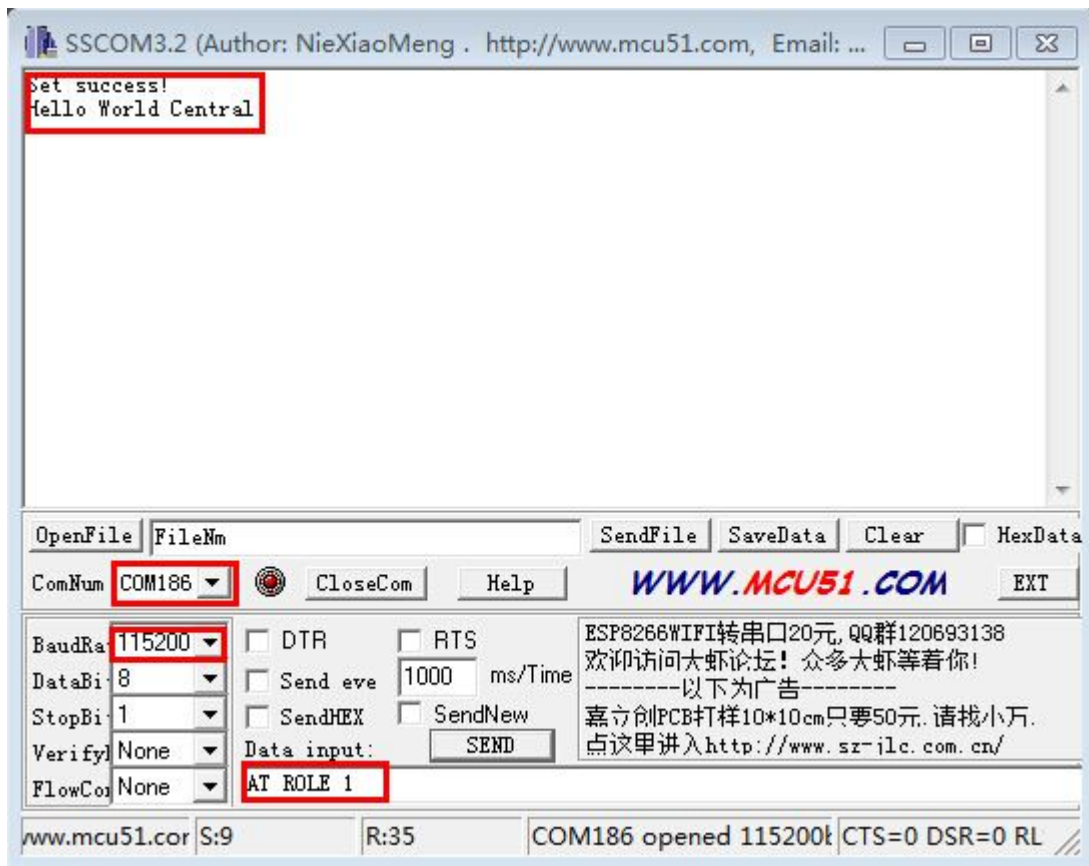
BLE Bee module firmware has been defaulted as slave, so in order to achieve communication between the two modules, one of the module need to be designed to host (through the AT command design)

AT Command description:

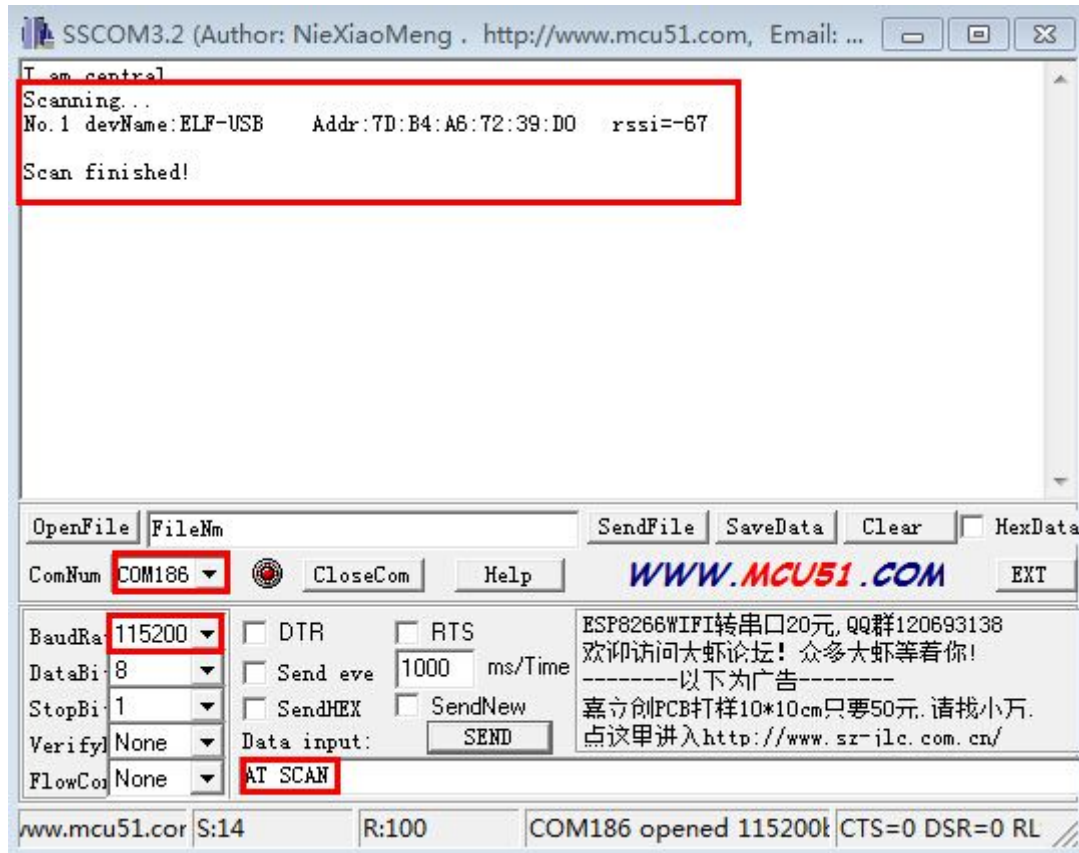
1. AT CON // Connecting to Slave Computer, and the following parameters are the Slave Number from the searching list. AT CON ? can view help information.
2. AT BAUD // View, Set the baud rate, following no parameter means viewing baud rate, following with parameter means setting baud rate(parameters are baud rates). AT BAUD ? can view help information.
3. AT NAME // View, Set the device name, following no parameter means viewing device name, following with parameter means setting device name (parameters are device names). AT NAME ? can view help information.
4. AT RENEW // Restore to factory settings, no parameters, AT RENEW ? Incapable use, factory setting baud rate as 115200.
5. AT ROLE // View, Set the current role, following no parameter means viewing current role , following with parameter means setting current role(parameters are Role Code, 0 represents Slave, 1 represents Host). AT ROLE ? can view help information.
6. AT MYMAC // Obtain MAC Address, no parameters, AT MYMAC ? Incapable use.
7. T TRANSMODE // View, Set the transfer mode, following no parameter means viewing current transfer mode, following with parameter means setting transfer mode, (parameters are transfer odes) AT TRANSMODE ? can view transfer code detail.
8. AT SCAN // Scan Settings, following no parameters, AT SCAN ? Incapable use
9. AT DISCON // Disconnect the current connection, following no parameters, AT DISCON ? incapable use

Step 2 Design one of BLE Bee module into host, and then host search and connect slave.

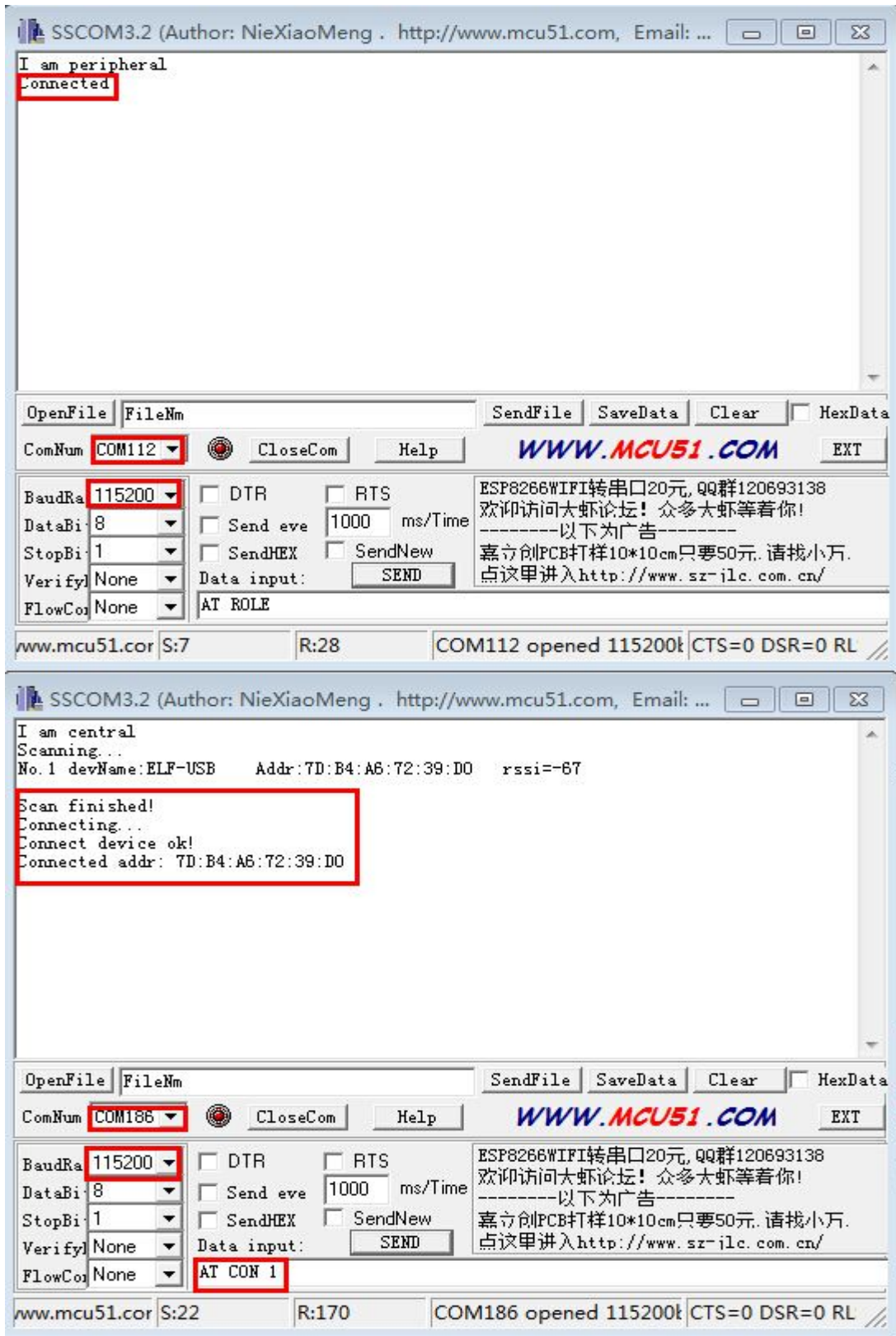
1. Open serial port debugging software and proceed operations.



2. Choose the corresponding com number and set the Baud Rate as 115200.
3. Input AT ROLE 1 + Enter, and one BLE Bee module could be designed into host. (another BLE module could be defaulted as slave)
4. After the selection of com number and Baud Rate of 115200, input AT SCAN + Enter, the host can search slave, just like the above screen shot shows.

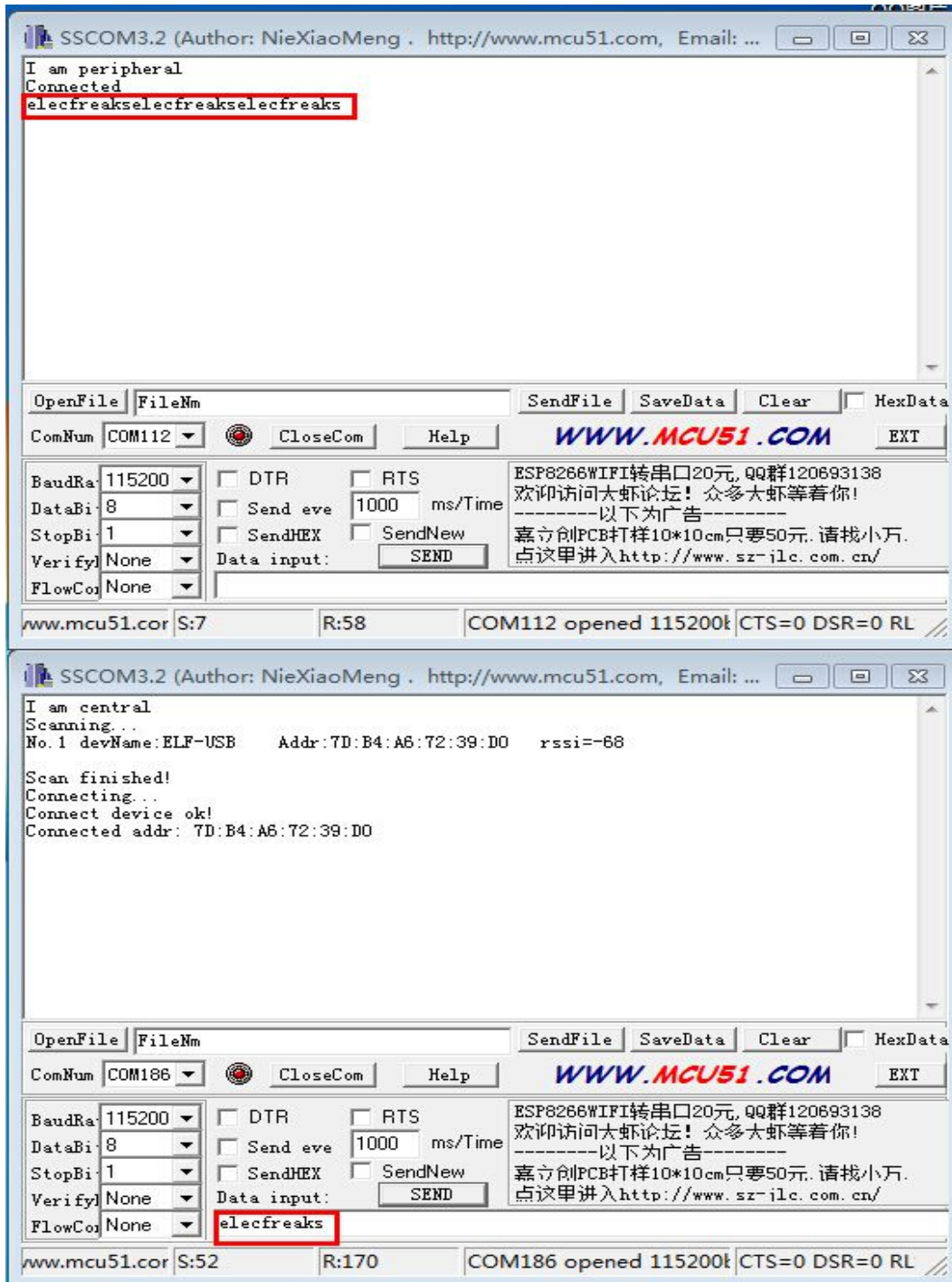


5. After scan finished, open the host and slave serial port respectively, and input AT CON 1 + Enter from the host serial port to connect the slave. If the slave serial port returned connected, the host has connected slave.

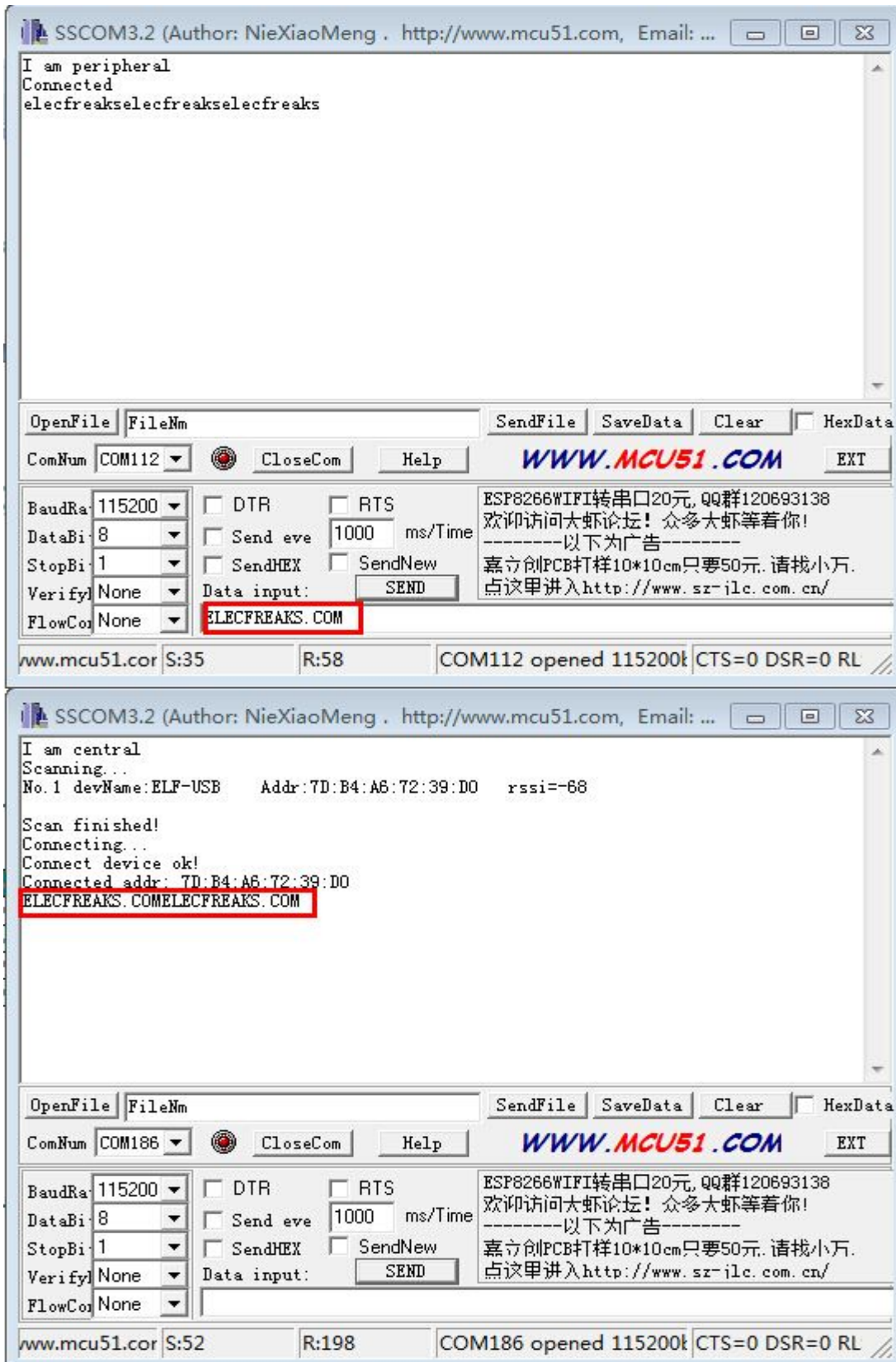


Step 3 Communication between two modules

1. After the connection of host and slave, input data like electfreaks from host, the slave would be returned as electfreaks.



- Input electfreaks.com from slave, the host would be returned as electfreaks.com, which means two modules have achieved successful communication.



Part 2 Communication between BLE Bee and mobile

Step 1 Install EFBLE debugging App

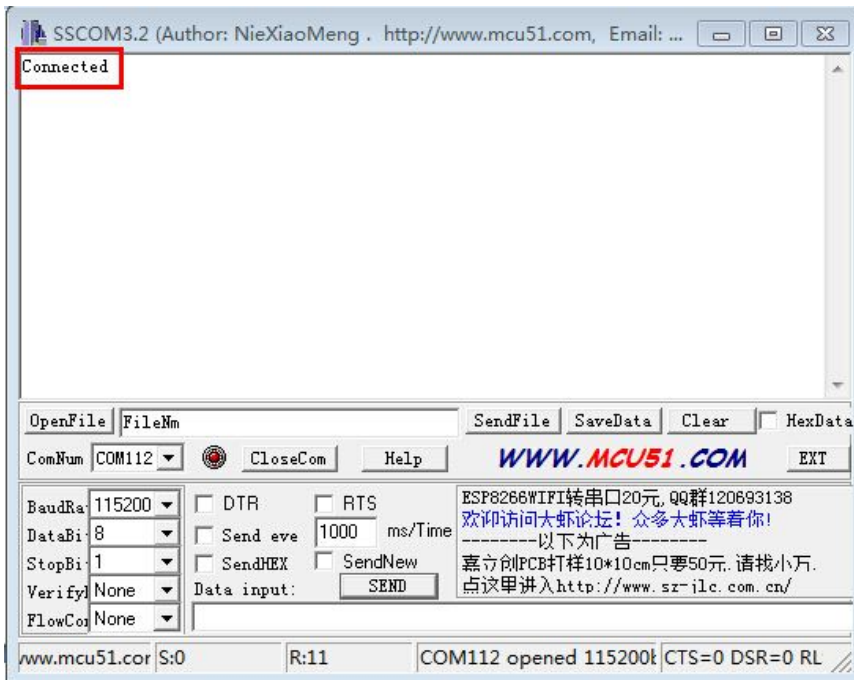
Step 2 Mobile search and connect BLE Bee

1. After install the EFBLE debugging App in the mobile, open the APP, click scan to search Bluetooth.



Note: Mobile Bluetooth is the defaulted host, so BLE bee doesn't need to make a change, defaulted as slave

2. Click the ELF - USB, slave would be returned as connected.

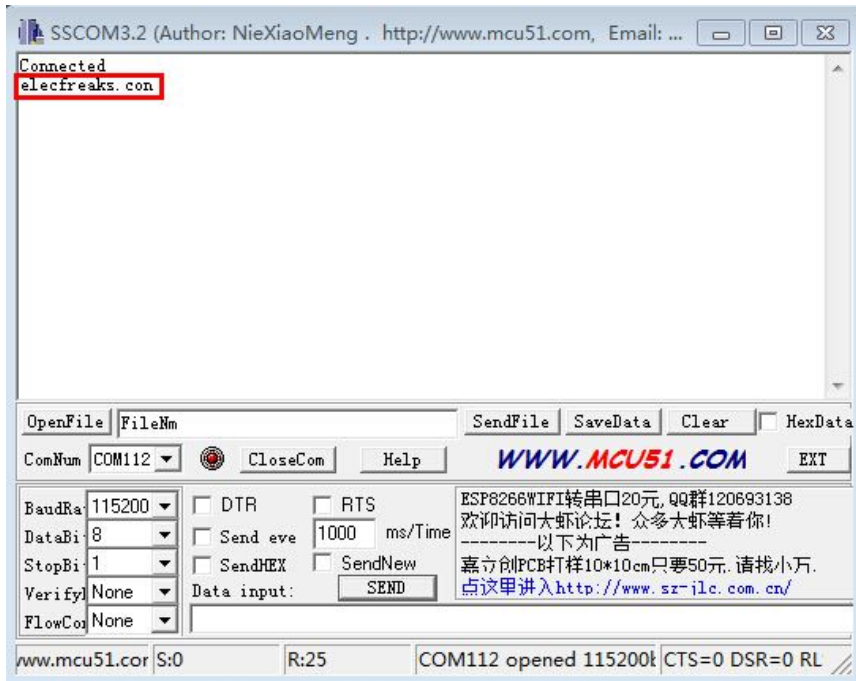


Step 3 Mobile send data to slave

1. From the phone APP interface, enter the content to be sent(no more than 20 bytes at a time), and then click send, just like below

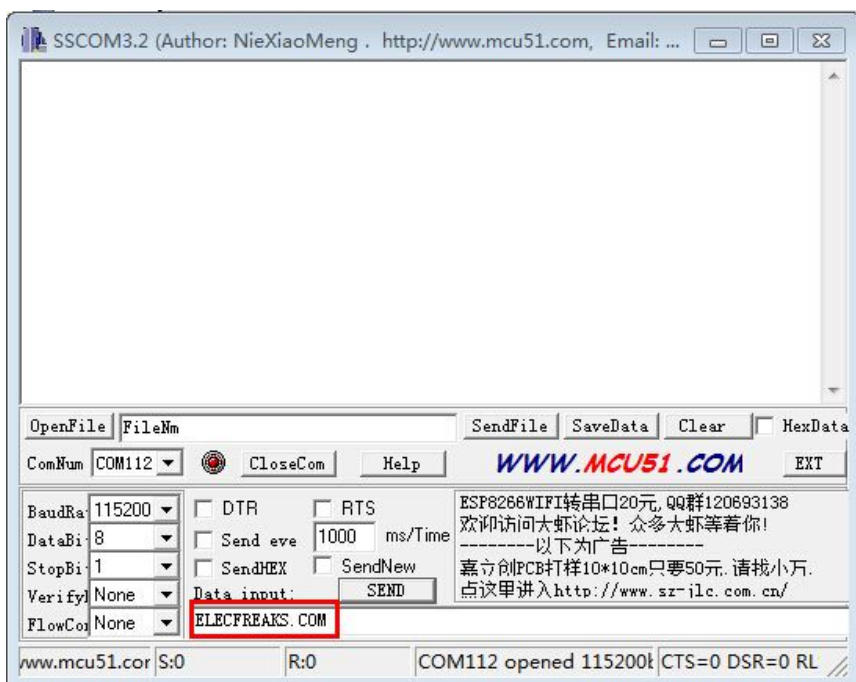


2. Slave would receive and display the data from mobile.



Step 4 Slave send data to mobile

1. From the serial port software interface, enter the content to be sent.



2. Mobile would receive the data from slave



4. Revision history

REVISION	DESCRIPTION	RELEASE DATE
V1.4	Initial version	9/28/2014

5. Contact information

If you need more information, please refer to: <http://www.electfreaks.com>