



FSC-BT936B User Guide

Release 3.7.0

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This guide is applicable to the **FSC-BT936B** series Bluetooth audio application modules, include:

- FSC-BT936A
- FSC-BT936B

This guide consists of the following parts:

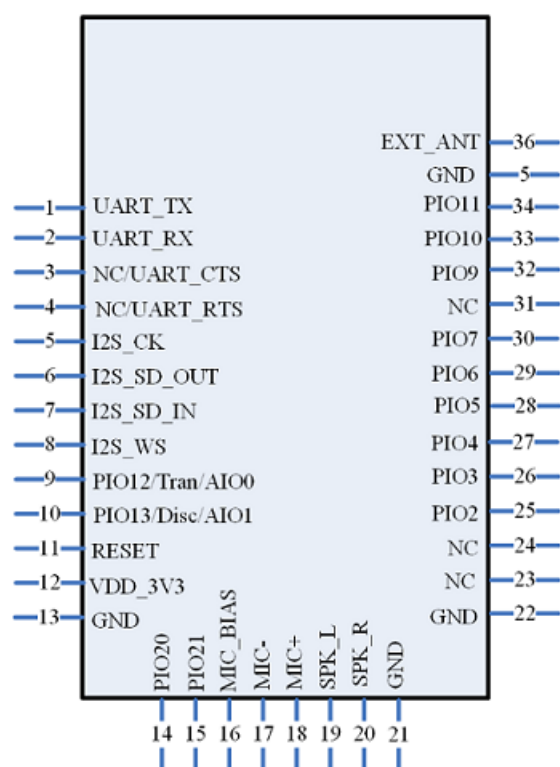
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Chapter 1

Hardware Design

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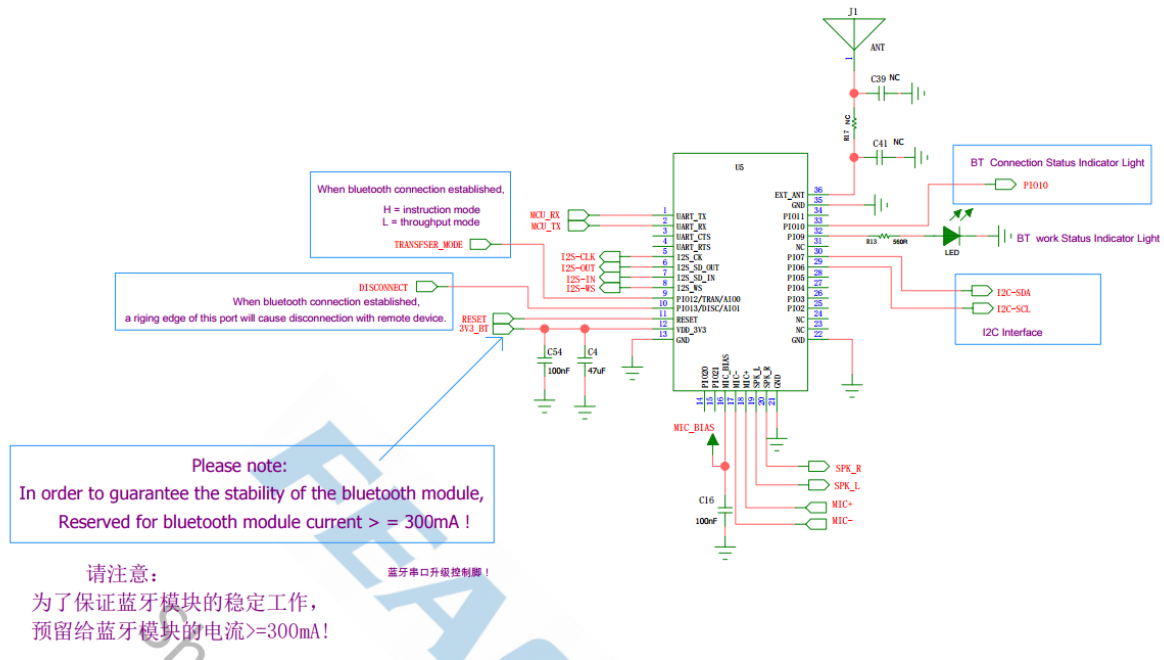
1.1 Module Pin Diagram



1.2 Module Pin Description

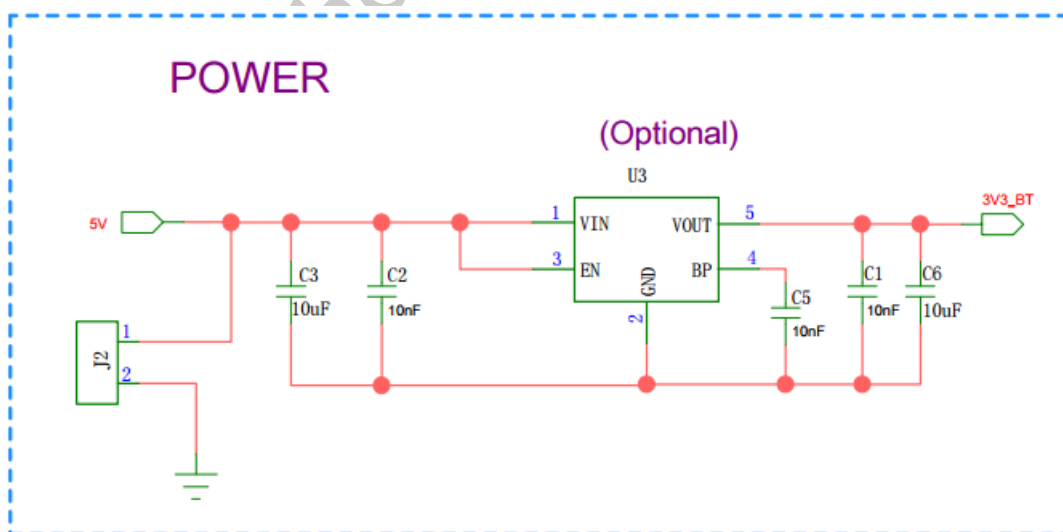
Pin	Pin Name	Type	Pin Descriptions
1	UART_TX	O	UART TX
2	UART_RX	I	UART RX
5	I2S_CLK	I/O	I2S bit clock
6	I2S_OUT	O	I2S data output
7	I2S-IN	I	I2S data input
8	I2S-WS	I/O	Frame Sync Clock
11	RESET	I	active-low reset
12	VDD_3V3	I	3.3V power supply
13	GND		GND
16	MIC_BIAS	O	microphone bias voltage
17	MIC-	I	MIC negative
18	MIC+	I	MIC positive
19	SPK_L	O	left channel
20	SPK_R	O	right channel
32	PIO_9	I/O	operating status indicator Pin
33	PIO_10	I/O	connection indicator Pin
36	ANT		external antenna Pin

1.3 Application Schematic



1.4 Power-on Circuit Design

- To ensure the stable operation of the Bluetooth module, the power supply for the VDD_3V3 pin must reserve a current of $\geq 300\text{mA}$ for the Bluetooth module.
- If the power supply is converted from 5V to 3.3V, you can refer to the following optional recommended schematic diagram for design:



1.5 Hardware Design Note

- For the module's simple test environment, you only need to connect **VDD / GND / UART_RX / UART_TX** to test and use it.
- After completing the PCB circuit schematic, please contact the staff of [Feasycom](#) for review to prevent the Bluetooth range from failing to reach the optimal performance.

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Chapter 2

Functional Description

[中文版]

2.1 Default Configuration

Name	FSC-BT936-XXXX
LE-Name	FSC-BT936-LE-XXXX
Pin Code	0000
Secure Simple Pairing Mode	On
UART Baudrate	115200/8/N/1

2.2 Supported Profiles

- SPP (Serial Port Profile)
- GATTs (Generic Attribute Profile LE-Peripheral role)
- GATTC (Generic Attribute Profile LE-Central role)
- HFP-HF (Hands-Free Profile)
- HFP-AG (Hands-Free-AG Profile)
- A2DP-Sink (Advanced Audio Distribution Profile)
- A2DP-Source (Advanced Audio Distribution Profile)
- AVRCP-Controller (Audio/Video remote controller Profile)

- AVRCP-Target (Audio/Video remote controller Profile)
- HID-DEVICE (Human Interface Profile)
- PBAP (Phonebook Access Profile)

2.3 GPIO Indication

2.3.1 Operating Status

PIN	Status	Description
PIN32	Periodic High and Low Levels	Not Connected
PIN32	High Level	Connected

2.3.2 Connection Status

PIN	Status	Description
PIN33	Low Level	Not Connected
PIN33	High Level	Connected

2.4 GATT Service

Type	UUID	Permission	Description
Ser-vice	0xFFFF0		Throughput transmission service
Write	0xFFFF2	Write, Write Without Response	APP sends (data/messages) to module
Notify	0xFFFF1	Notify	The module sends (data/messages) to the APP

Chapter 3

Quick Development Kit

[中文版]

3.1 Datasheet

- FSC-BT936B Datasheet

3.2 Evaluation Board

- FSC-DB008 : Feasycom Bluetooth audio application development board, it is compatible with modules such as FSC-BT936B, FSC-BT1036B, and BT909C.

3.3 AT Command Set

- FSC-BT936B General Audio AT Command Set

3.4 Serial Port Tool

- Feasycom Serial Port Tool : A serial port communication analysis tool based on Windows PC.

3.5 APP&SDK

- FeasyBlue : Feasycom App & SDK resource supporting Android and iOS, which enables functions such as Bluetooth BLE & SPP data communication test, Feasycom module

firmware version reading, parameter configuration, OTA Upgrade and OTA AT commands etc.

3.6 Firmware Upgrade

3.6.1 OTA Upgrade

- FeasyBlue App (Based on Mobile Application)
- User Guide: Please refer to [FSC-BT936B - OTA Upgrade](#) .

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Chapter 4

Quick Start

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4.1 What you need

4.1.1 Required Hardware

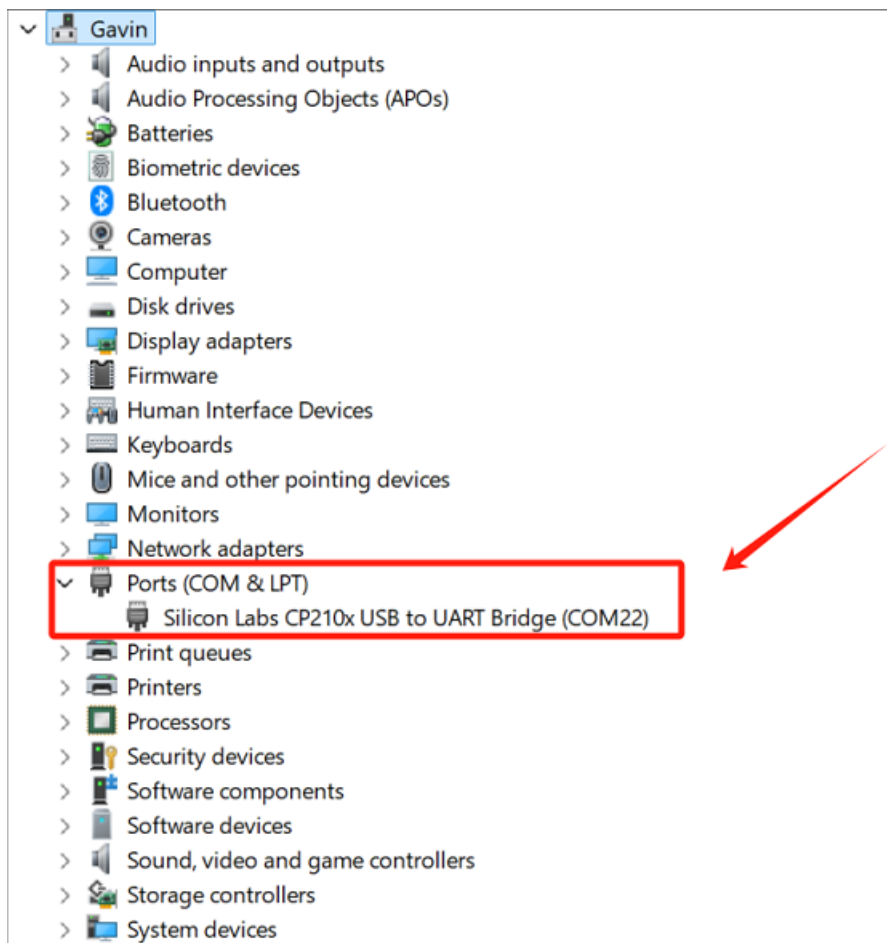
- 1 x FSC-DB008-BT936B Rapid Development Kit : FSC-DB008 Rapid Development Kit pre-integrated with the FSC-BT936B Bluetooth Audio Module
- 1 x Windows PC

4.1.2 Software and Setup

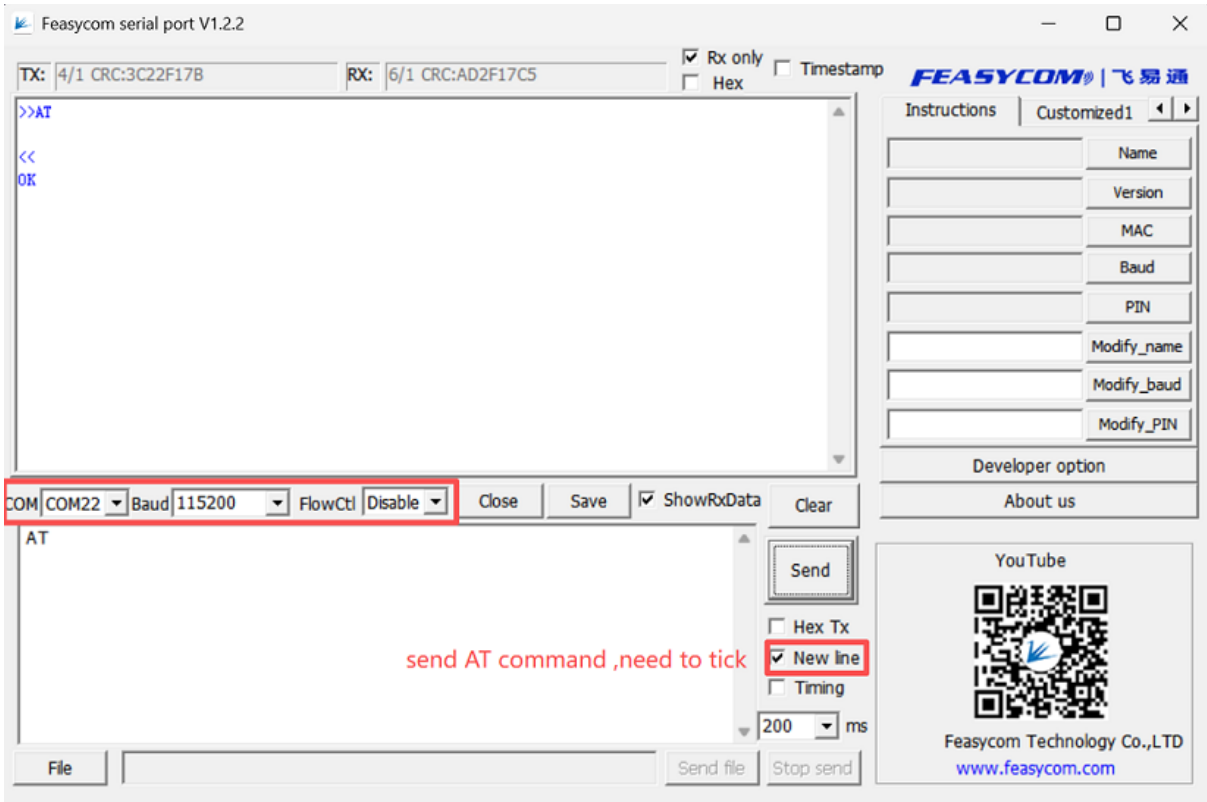
- Feasycom Serial Port Tool : A serial port communication analysis tool based on Windows PC.
- Communication Interface : UART
- UART Configuration : 115200/8/N/1

4.2 Hardware Access

1.Connect the FSC-DB008-BT936B to the PC via a USB-to-Type-C data cable. The PC will automatically recognize the serial port and generate a virtual COMx port.



2.Run the [Feasycom Serial Port Tool](#) on the PC, set the correct **COM** and **Baud**, and check the **New Line**.



4.3 Communication Test

The following are several basic general AT command test examples.

For more AT commands, please refer to [FSC-BT936B General Audio AT Command Set](#).

4.3.1 AT - UART Communication Test

Com-mand	AT\r\n
Response	\r\nOK\r\n
Descrip-tion	Test the UART communication between HOST and Module after power on, baudrate changed, etc.

Example:

```
Send:      >>AT\r\n
Response: <<\r\nOK\r\n
```

4.3.2 AT+NAME - Read/Write Local BR/EDR Name

Example:

```
Send: <<AT+NAME\r\n
Response: >>\r\n+NAME=FSC-BT936-0D15\r\n //Example, please refer
to the actual reading
Response: >>\r\nOK\r\n
```

4.3.3 AT+LENAM - Read/Write Local BLE Name

Example:

```
Send: <<AT+LENAM\r\n
Response: >>\r\n+LENAM=FSC-BT936-LE-0D15\r\n //Example, please
refer to the actual reading
Response: >>\r\nOK\r\n
```

4.3.4 AT+VER - Read the Current Firmware Version

Example:

```
Send: <<AT+VER\r\n
Response: >>\r\n+VER=BT936,V4.6.5\r\n //Example, please refer to
the actual reading
Response: >>\r\nOK\r\n
```


Chapter 5

Obtain Firmware Version

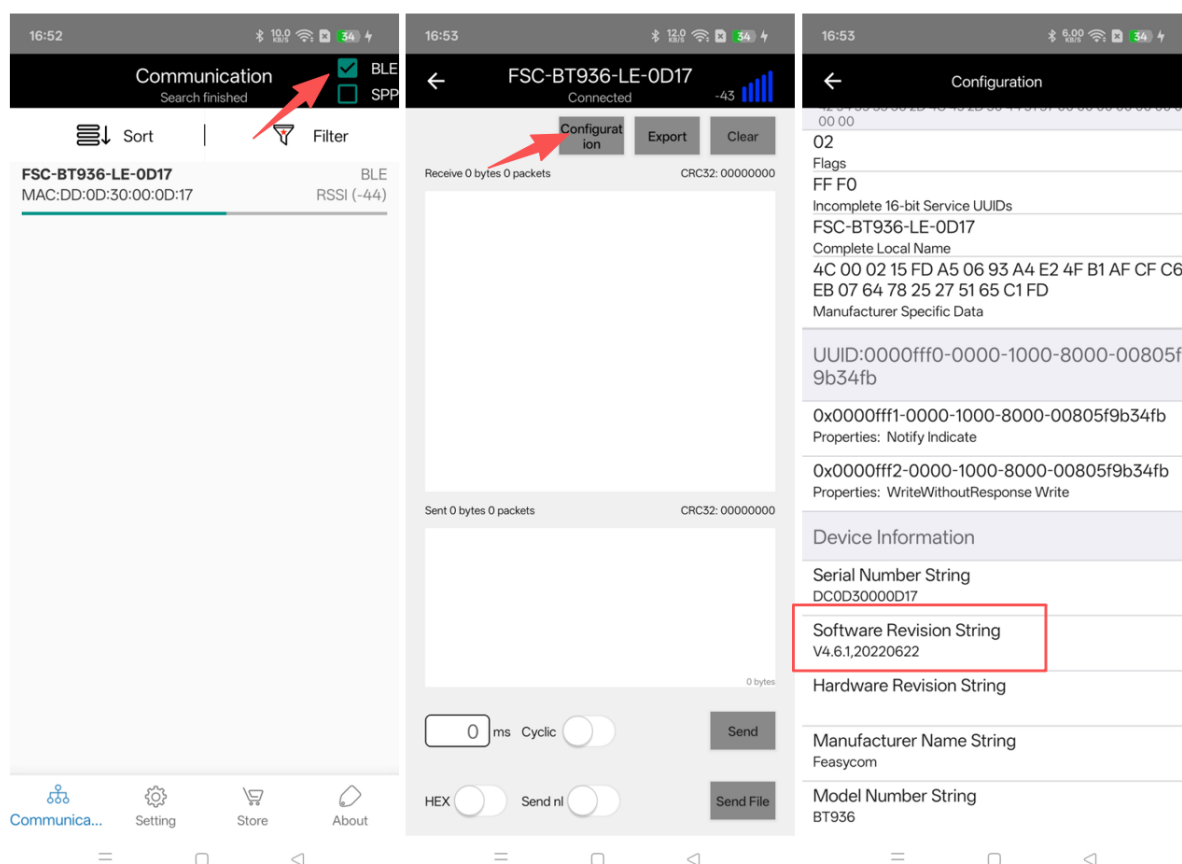
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Currently, there are two ways to obtain the firmware version information of FSC-BT936B, as following:

5.1 FeasyBlue App

After establishing a BLE connection between the **FeasyBlue App** and the FSC-BT936B modules, check the firmware version information on the **Configuration** function page.

The profile of the Bluetooth module needs to enable the BLE (GATT) function



5.2 AT Command

Send the **AT+VER** command through UART to obtain firmware version information.

Send: <<AT+VER

Response: >>+VER=BT936,V4.6.5 //Example, please refer to the actual reading result

Response: >>OK

Chapter 6

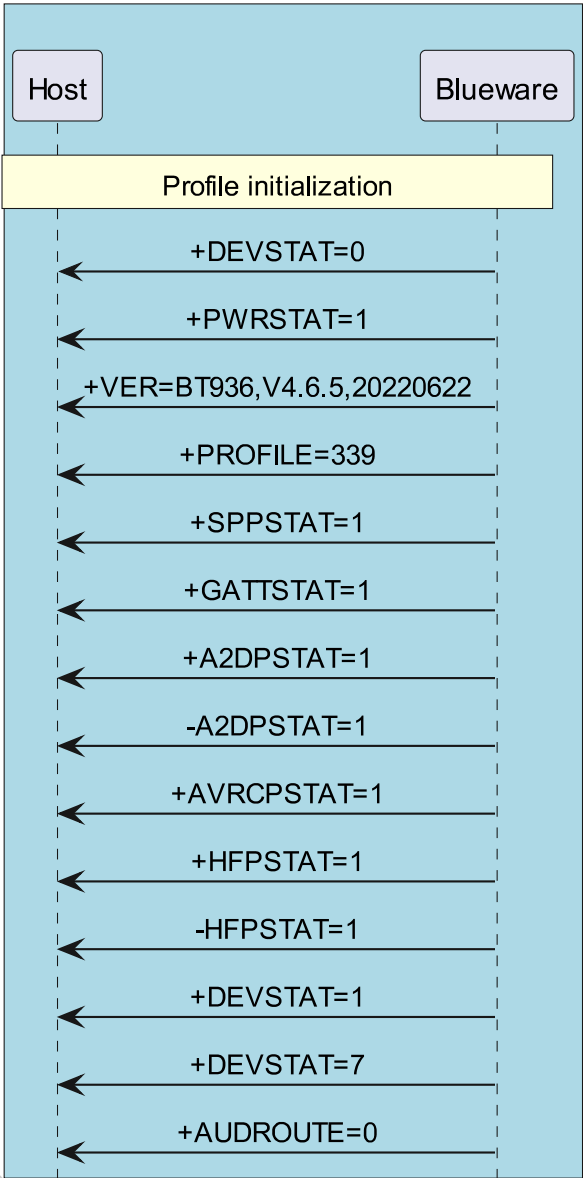
Development Examples

[中文版]

6.1 Profile Initialization

Module Profile initialization, examples:

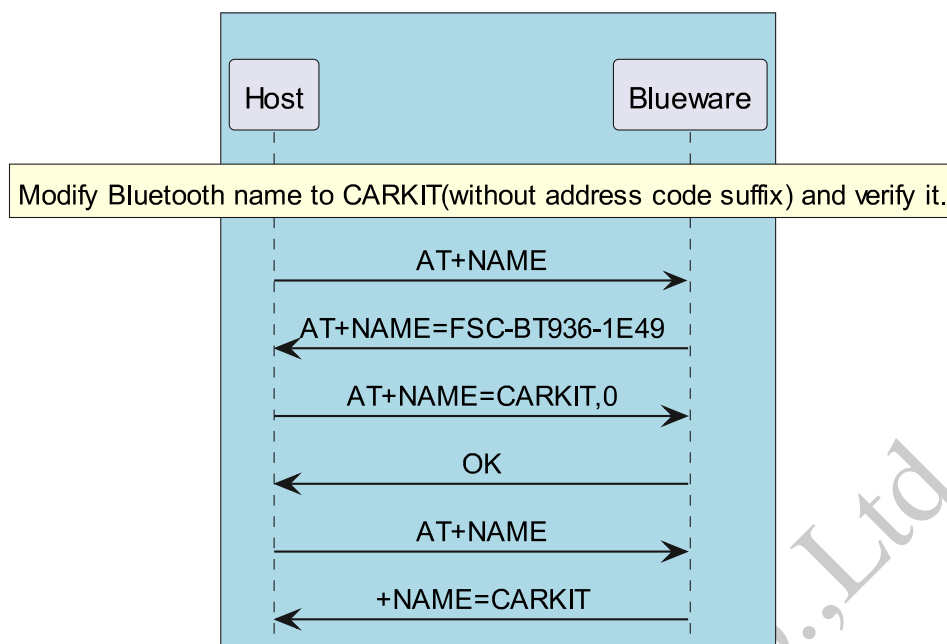
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6.2 Parameter Modification

6.2.1 Modify Bluetooth Name

Modify Name. Examples of AT command operations and response events are as follows:



Before the MCU modifies any parameters, it is recommended to first query, then modify, and finally verify. For the MCU to modify the device name to CARKIT, the reference code example is as follows:

```

void change_name(void)
{
    uart_send("AT+NAME\r\n");
    if(uart_read("+NAME", name_buf))
    {
        if(memcmp(name_buf, "CARKIT", 6))
        {
            uart_send("AT+NAME=CARKIT,0\r\n"); //defalut disable_
↪MAC address suffix
            uart_send("AT+NAME\r\n"); // read bt name
            if(uart_read("+NAME", name_buf))
            {
                if(memcmp(name_buf, "CARKIT", 6))
                {
                    //change name fail
                }
            }
            else
        }
    }
}
  
```

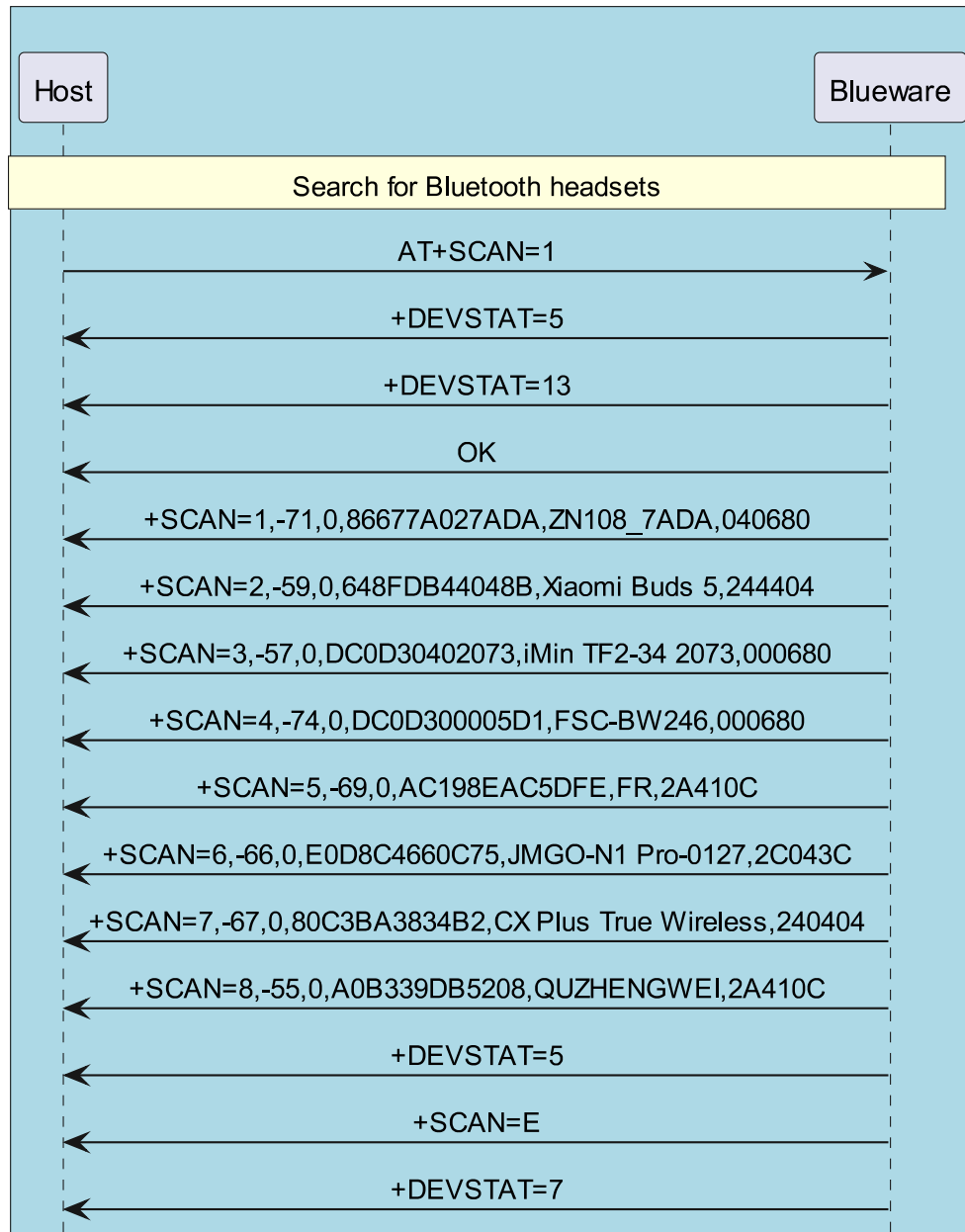
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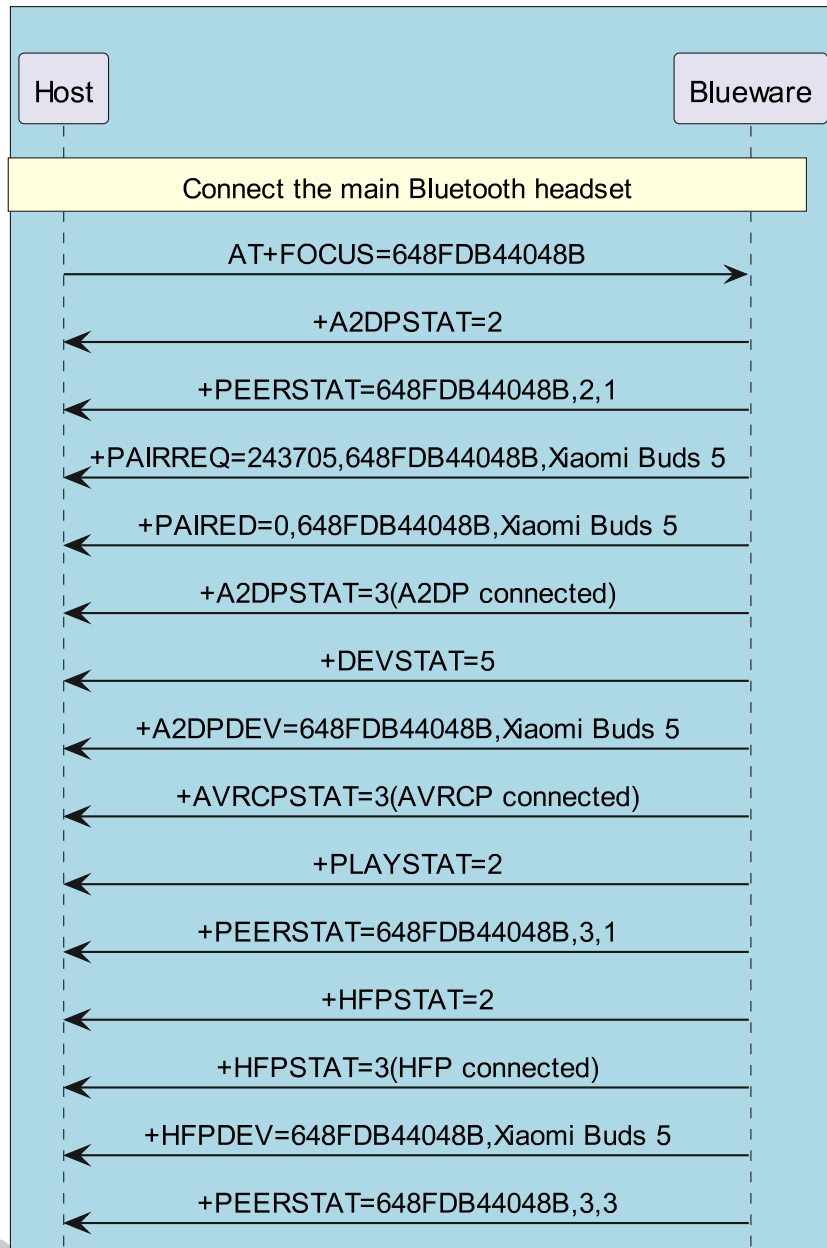
```
        {  
            //change name success  
        }  
    }  
}  
}
```

6.3 Audio Source Mode

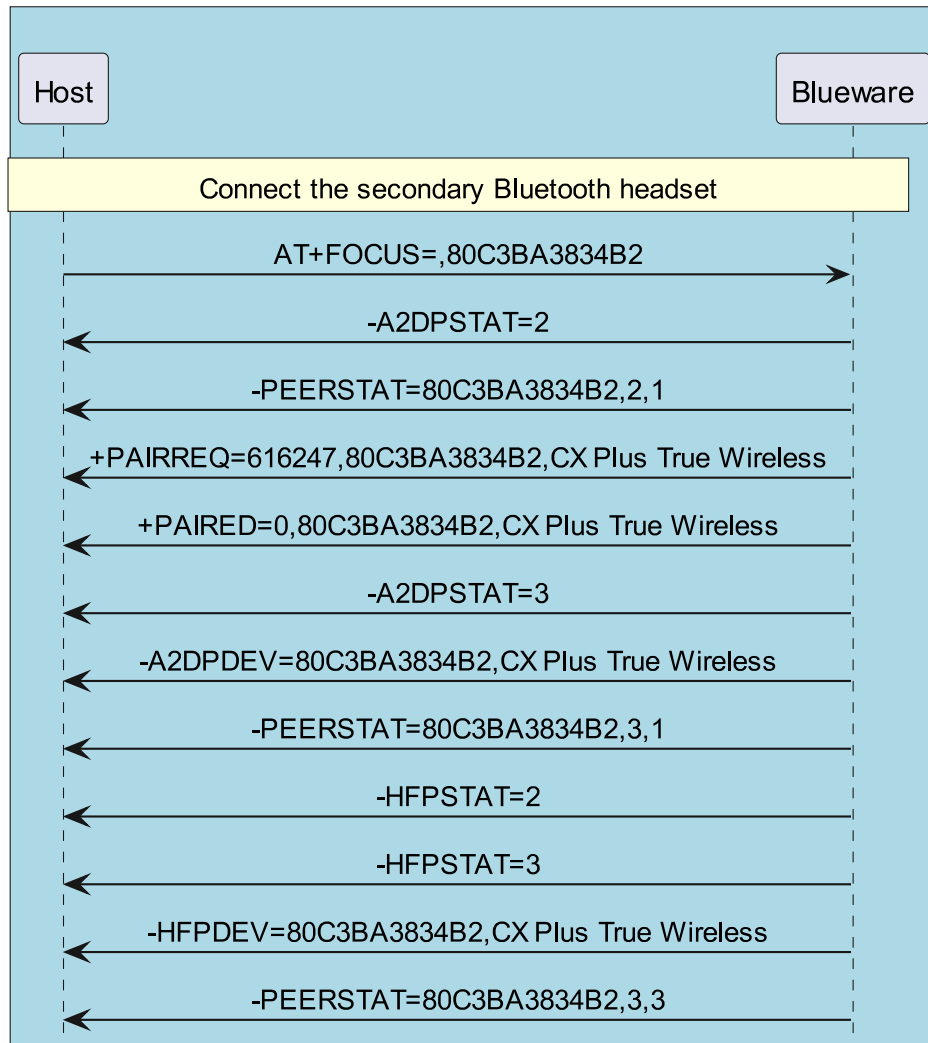
6.3.1 Search for Bluetooth headsets



6.3.2 Connect the main Bluetooth headset

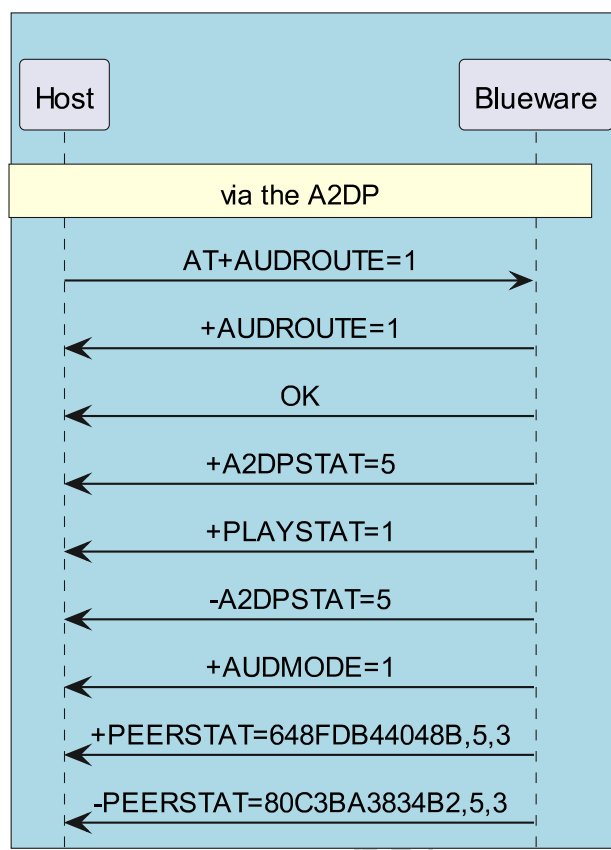


6.3.3 Connect the secondary Bluetooth headset

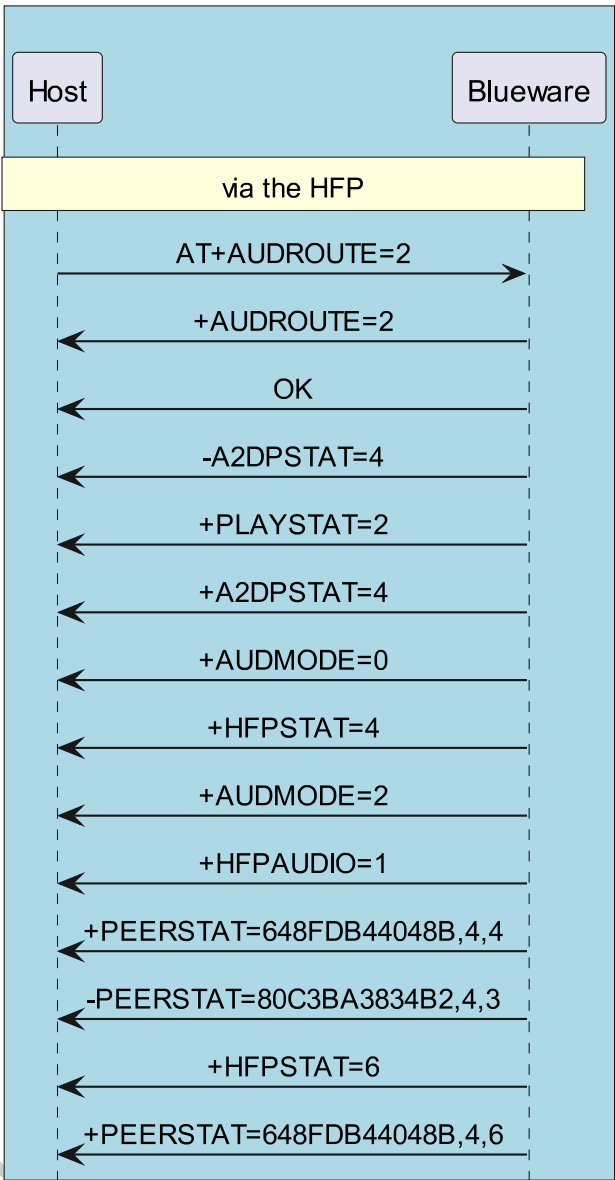


6.3.4 Audio Routing Management

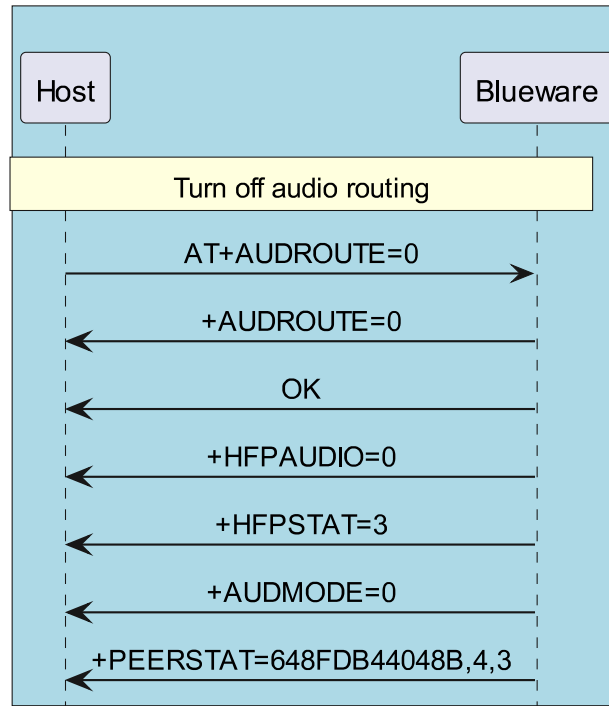
Transmit audio to the main and secondary Bluetooth headsets via the A2DP



Transmit audio to the main Bluetooth headset via the HFP

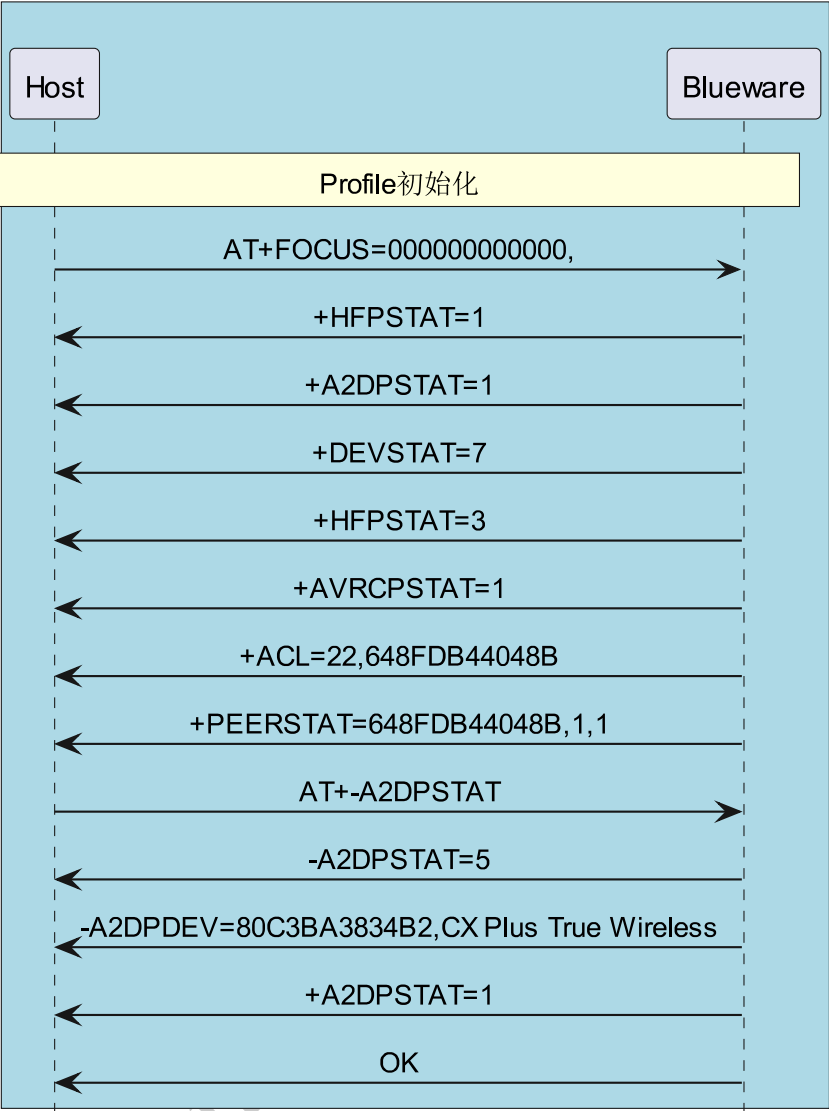


Turn off audio routing

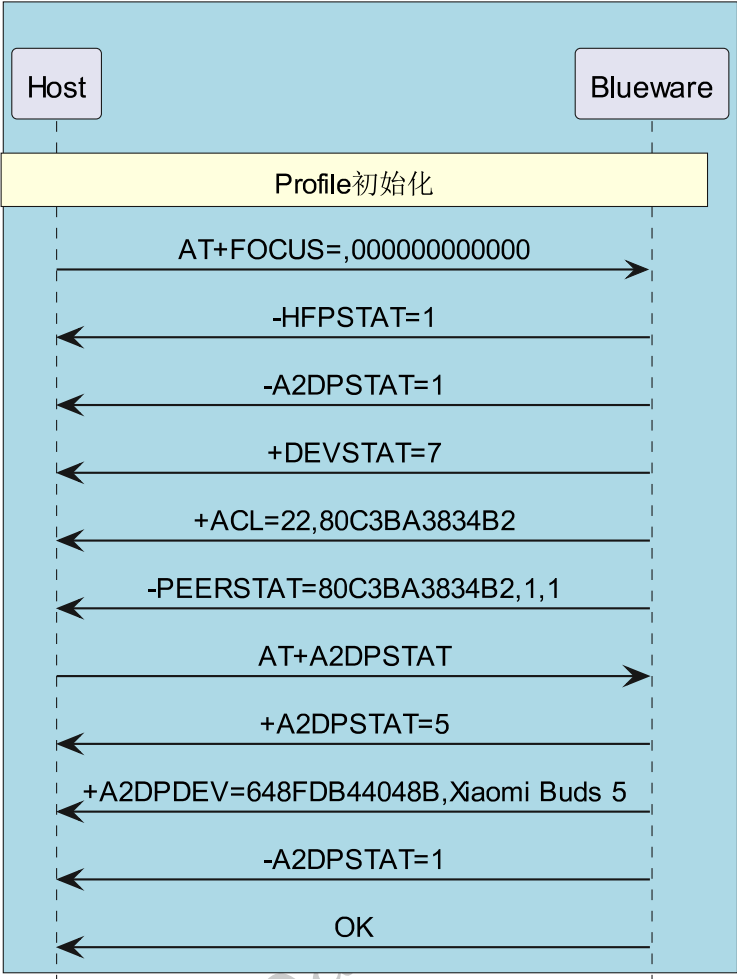


6.3.5 Disconnect

Two headsets have been connected, disconnect the main Bluetooth headset.



Two headsets have been connected, disconnect the secondary Bluetooth headset.



Chapter 7

Firmware upgrade

[中文版]

7.1 OTA upgrade

7.1.1 App Download

- FeasyBlue App (Base on Andriod or iOS)

7.1.2 User Guide

1.Run the FeasyBlue App, select **Setting - OTA Upgrade** to enter the OTA Upgrade function page. After entering, it will redirect to the device search page where you can select the Bluetooth device to be upgraded.

2.Scan and select the Bluetooth devices that need to be upgraded. After selecting the device, you will enter the **Firmware Loading** interface to load the firmware update file.

3.There are two ways to load the firmware update file:

- **Select firmware:** Choose to load the firmware update file stored locally on the phone (the firmware update file is provided by Feasycom).
- **Get the firmware:** By entering the **DFU name**, the corresponding firmware update file can be downloaded and imported from the Feasycom cloud server via the network (the DFU name is provided by Feasycom).

4.After successfully loading the firmware update file, click the **Start Upgrade** button. The message “**Upgrading**” and the upgrade progress will be displayed, indicating that the upgrade mode has been successfully entered and the upgrade is in progress.

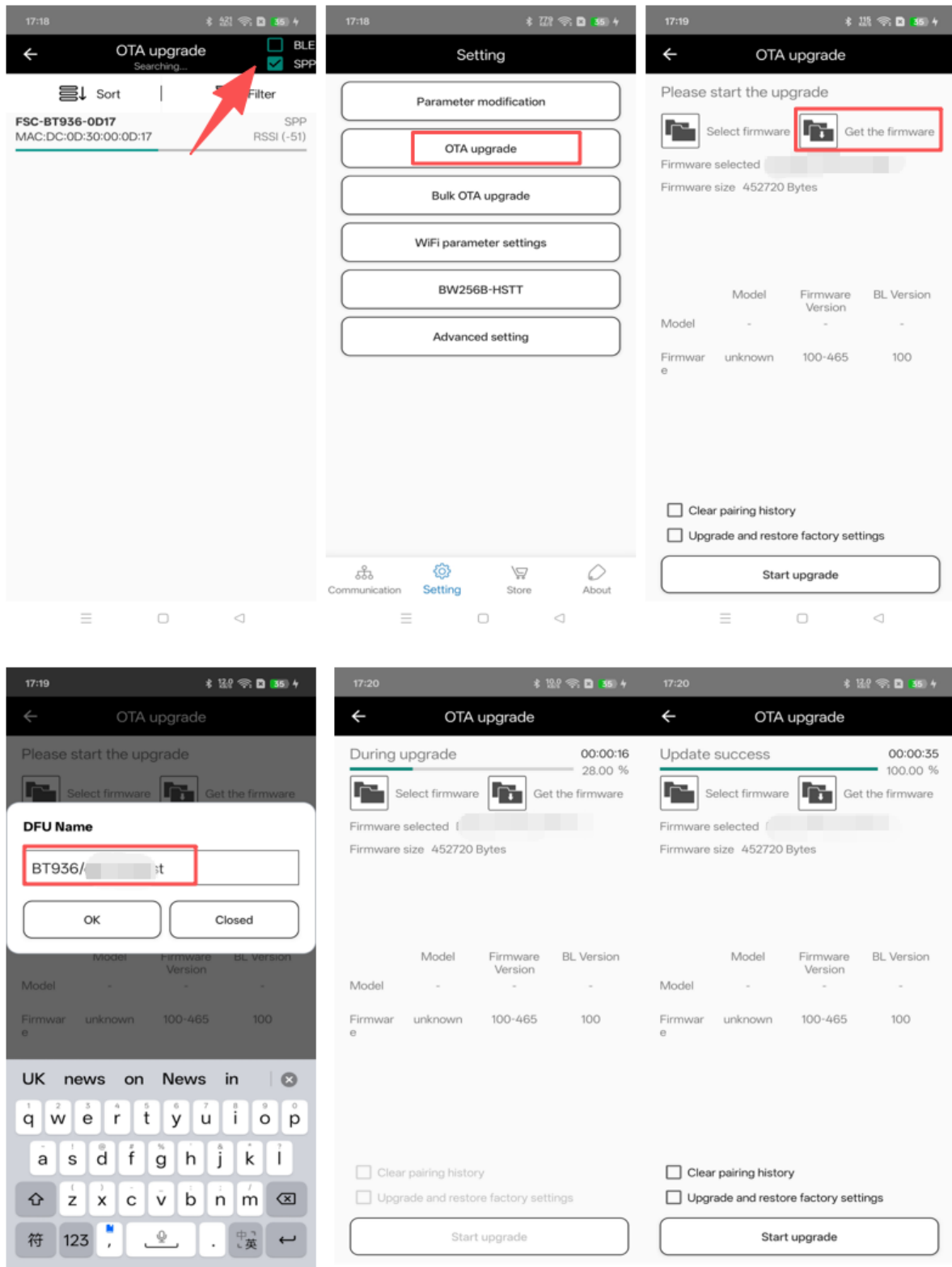
5.Wait for the upgrade progress bar to complete and display “**Upgrade Completed**” , then the upgrade is considered complete.

Warning:

1. When installing and running the FeasyBlue App, please allow the App to access **nearby devices, location information, and media and file access** permissions. Otherwise, it will result in the inability to search for nearby Bluetooth devices and load firmware update files.
2. If you choose to import the firmware update file by obtaining the firmware through the **DFU name**, please note that your phone needs to be connected to the Internet and ensure that the DFU name is entered correctly (case sensitive), otherwise an error message of **network or file error** will be displayed.
3. During the upgrade process, do not disconnect the power supply.

7.1.3 OTA Upgrade Example

Note: The following example is based on operations on the Android platform. The involved device name, parameters, and firmware DFU name are for demonstration purposes only. Please refer to the actual information during project implementation.



7.2 FAQs

Q: What should I do if there is an exception during the upgrade process, such as an upgrade interruption? After the upgrade is completed, but the module has not been successfully upgraded.

A: You can try powering on again and repeating the upgrade operation to confirm if you can enter the upgrade mode normally. If not, please contact the Feasycom support team.

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Chapter 8

Contact Information

Shenzhen Feasycom Co.,Ltd.

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Telephone : 86-755-23062695

Support : support@feasycom.com

Sales Service : sales@feasycom.com

Home Page : www.feasycom.com

Support Forum : forum.feasycom.com

Chapter 9

Appendix

9.1 PDF Dowload

PDF Dowload

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