

I.Overview

Ai-BV01-32S is an artificial intelligence AIoT voice module developed by Shenzhen Ai-Thinker Technology Co., Ltd. This module supports dual-mode Bluetooth V5.4+BR+EDR+BLE specification, featuring high performance, high reliability, and strong versatility. In AI speech algorithms, it achieves enhanced noise reduction performance, highly reliable wake-up recognition rate, and high-definition call quality. It also supports a richer set of offline speech control commands, faster response recognition time, and hybrid offline + online recognition capability. This article introduces the firmware flashing and usage methods of Ai-BV01-32S.

II.Serial port upgrade

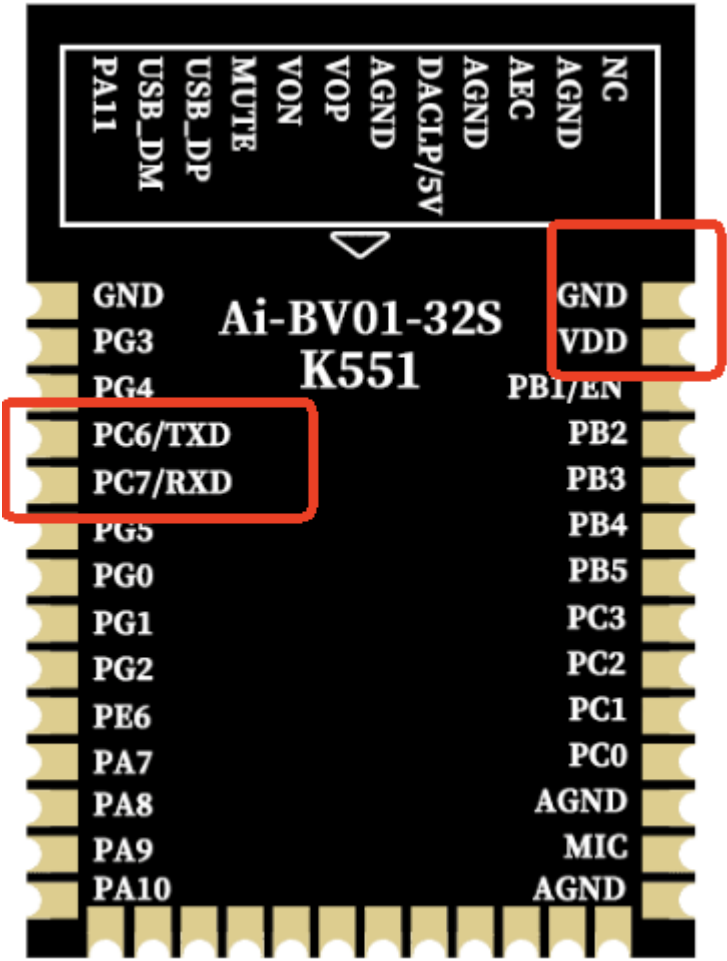
1.Upgrade Preparation

update software: [Click to download](#) **TTL tool:** [Click-to-buy](#)

The upgraded firmware must be a higher version than the one currently being used by the module, and it must be in the form of a bin file.

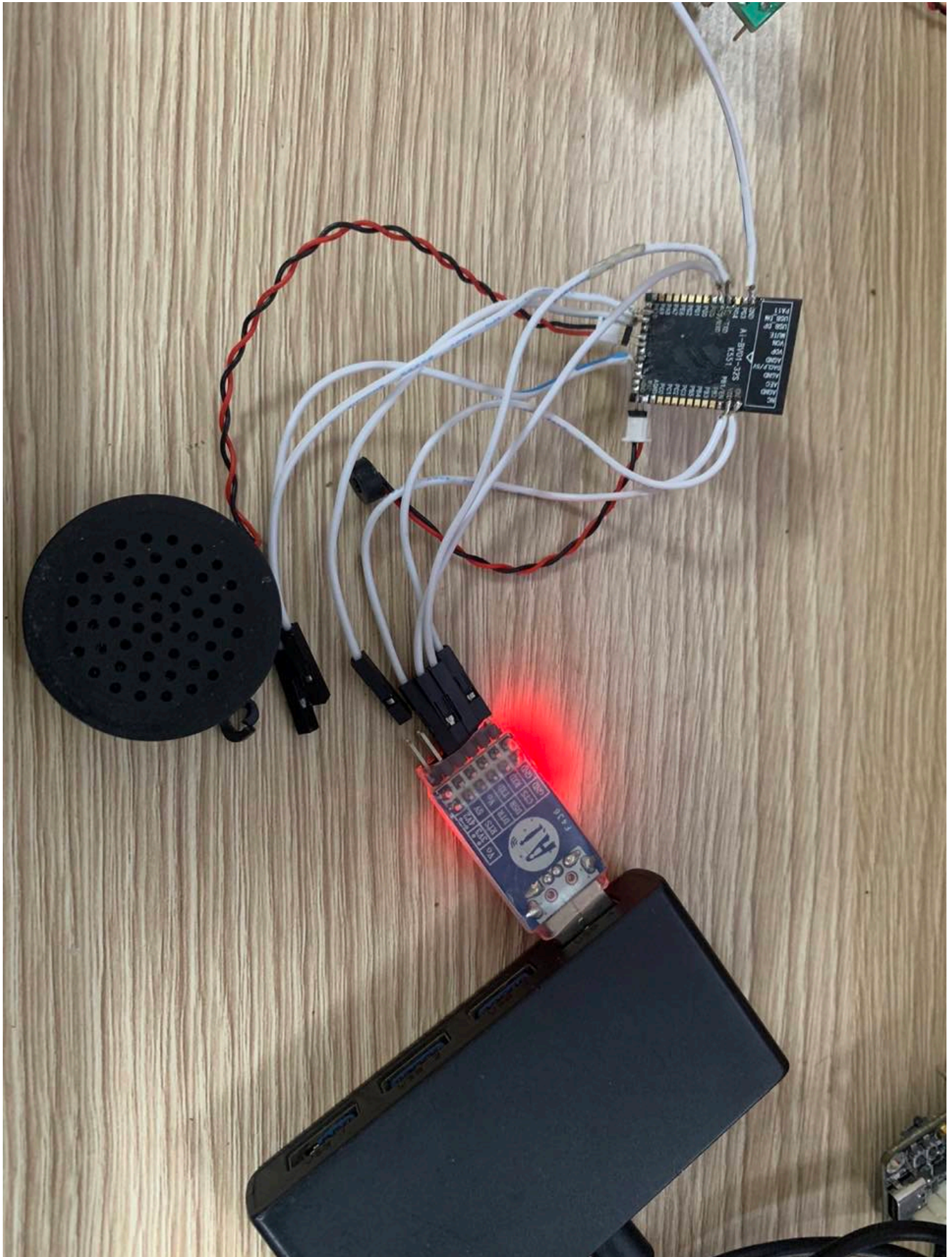
2.Wiring

TTL tool	Ai-BV01-32S
VCC	VDD
GND	GND
RX	TXD
TX	RXD



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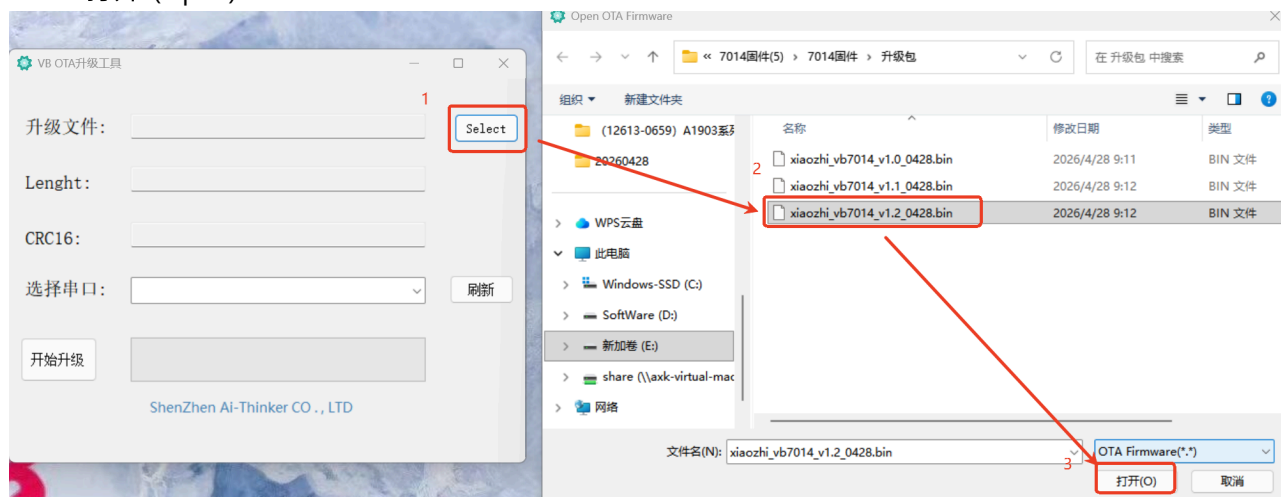
Physical wiring diagram:



After opening the upgrade software, the following steps should be followed:

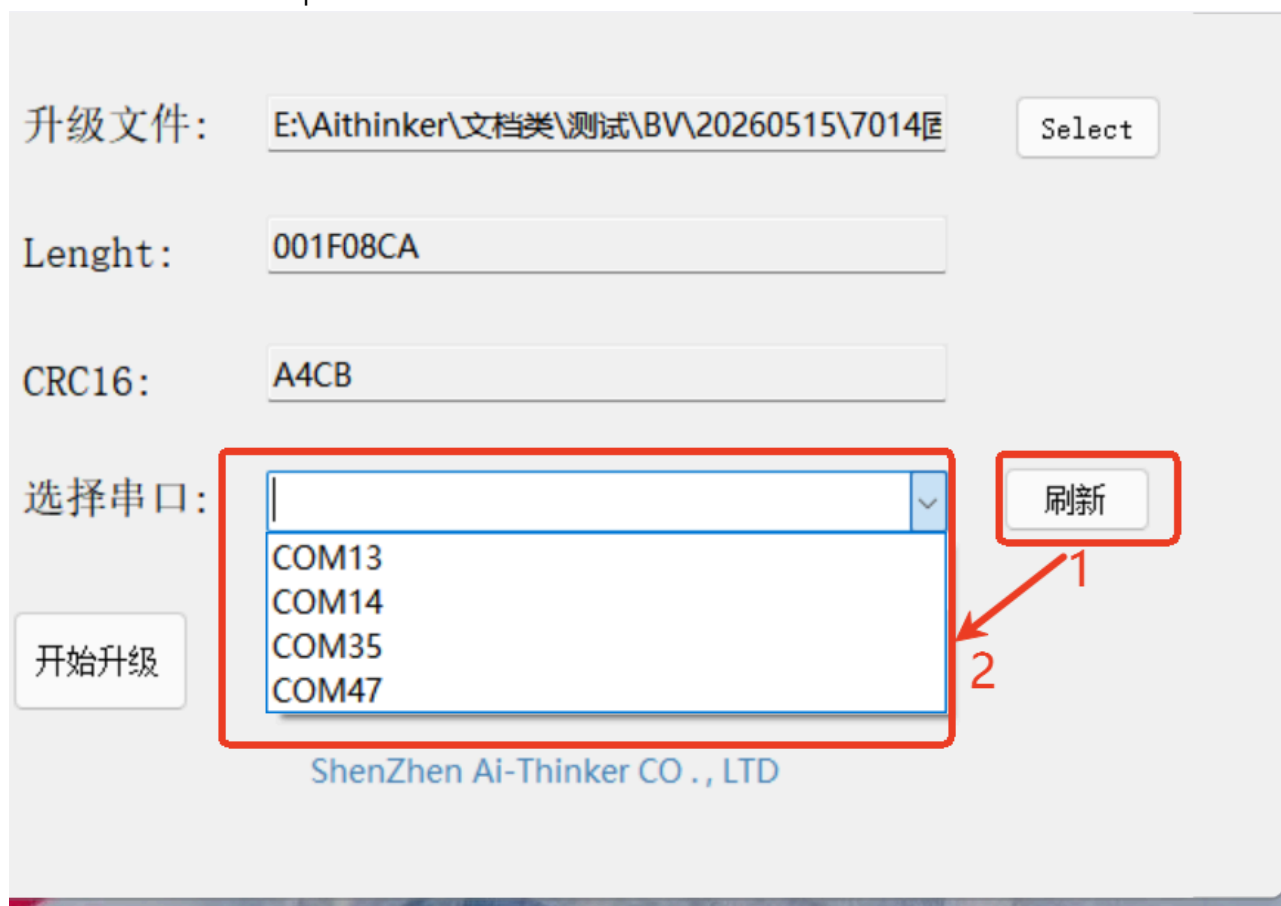
1. Click the "选择"(Select) button
2. Choose the file to be upgraded

3. Click "打开"(Open)



After the opening is completed, follow the steps below:

1. Click "刷新"(Refresh)
2. Select the correct serial port



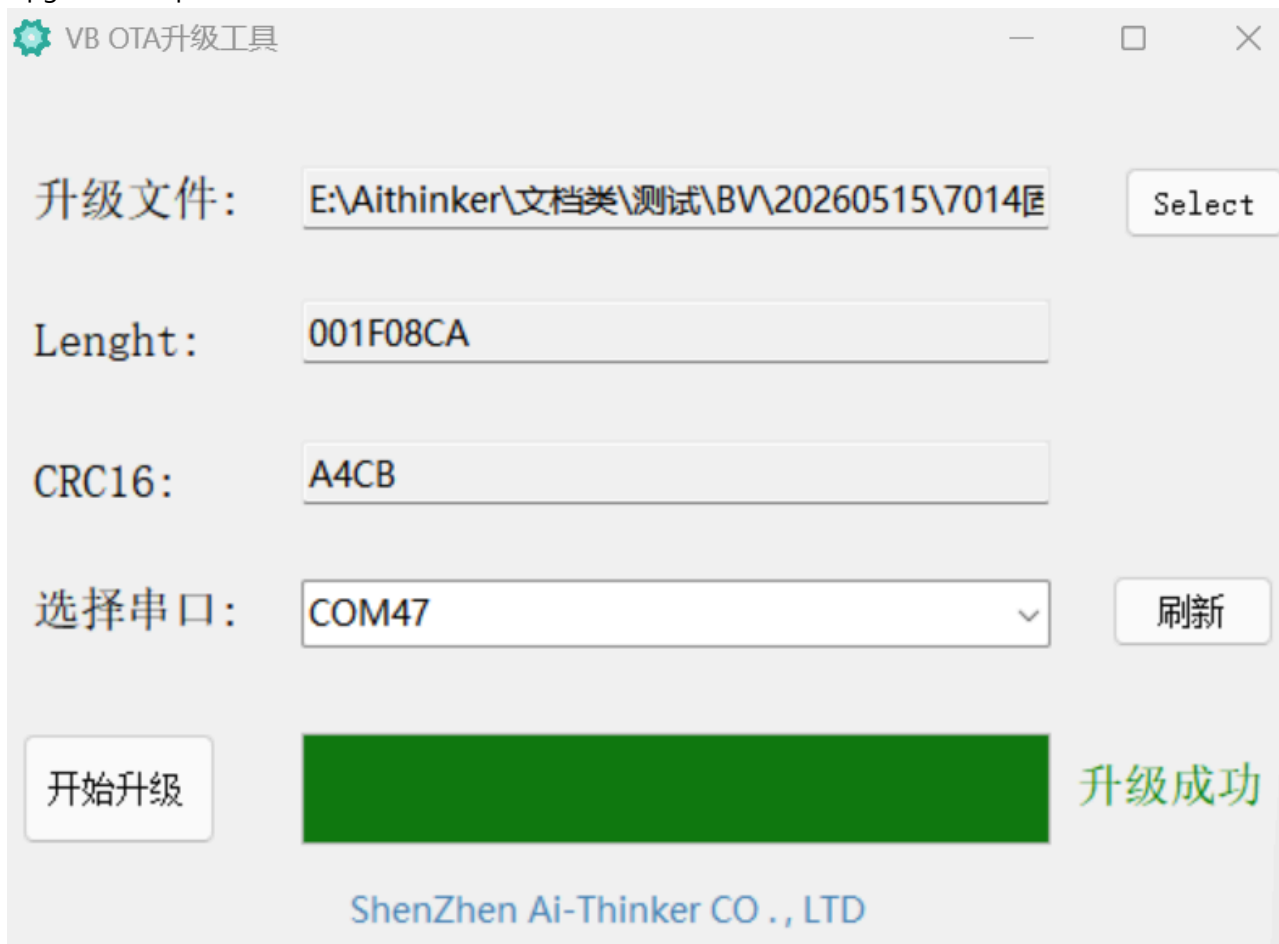
Click to "开始升级"(start the upgrade process)



Upgrading prompt



Upgrade completed



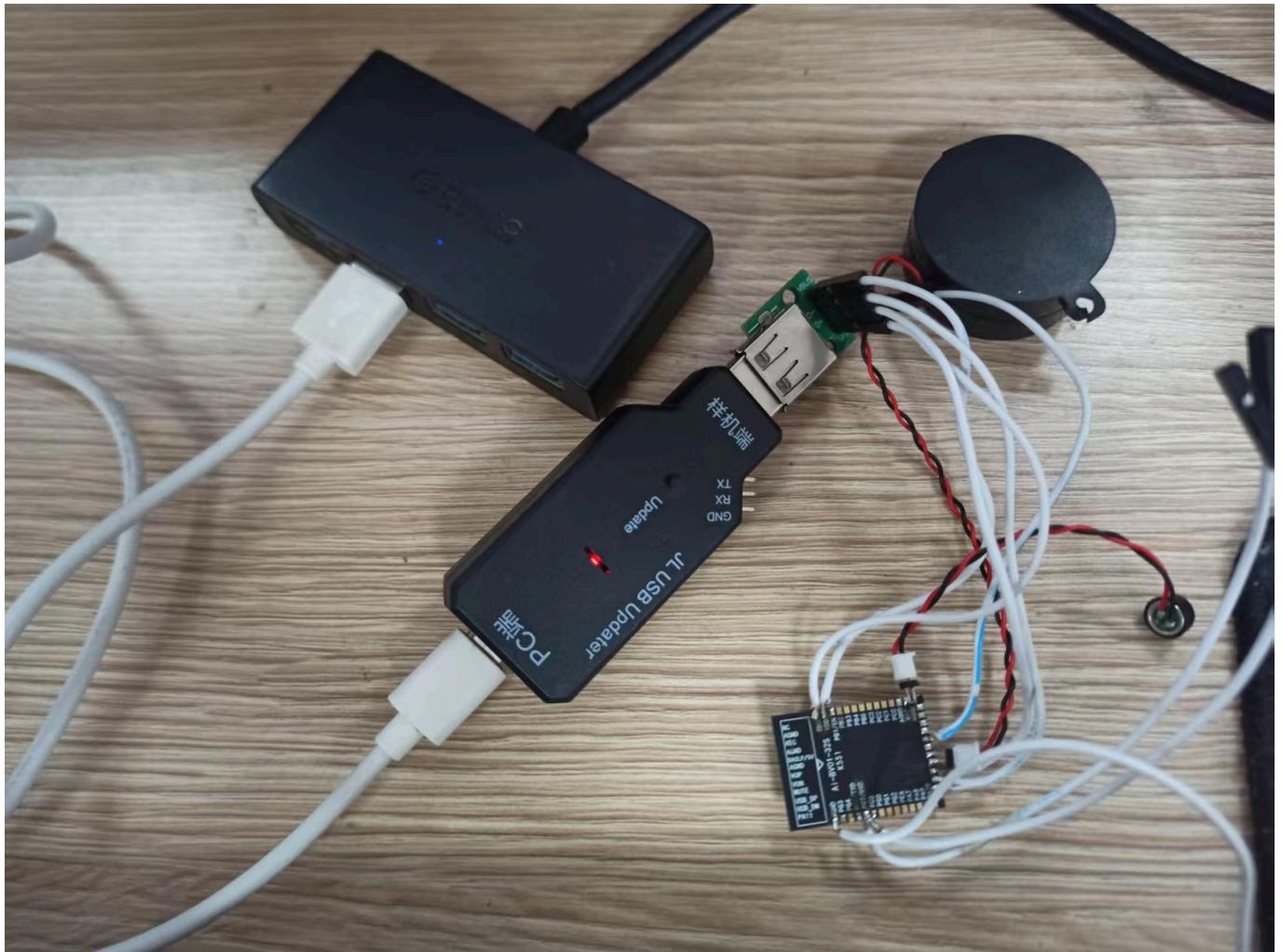
III. Burner Firmware Flashing

1. Flashing Preparation

Flashing software: [Click to download](#) **Dedicated flashing tool, If you do not have one, please:** [Click to view](#) **Firmware:** [Click to download](#)

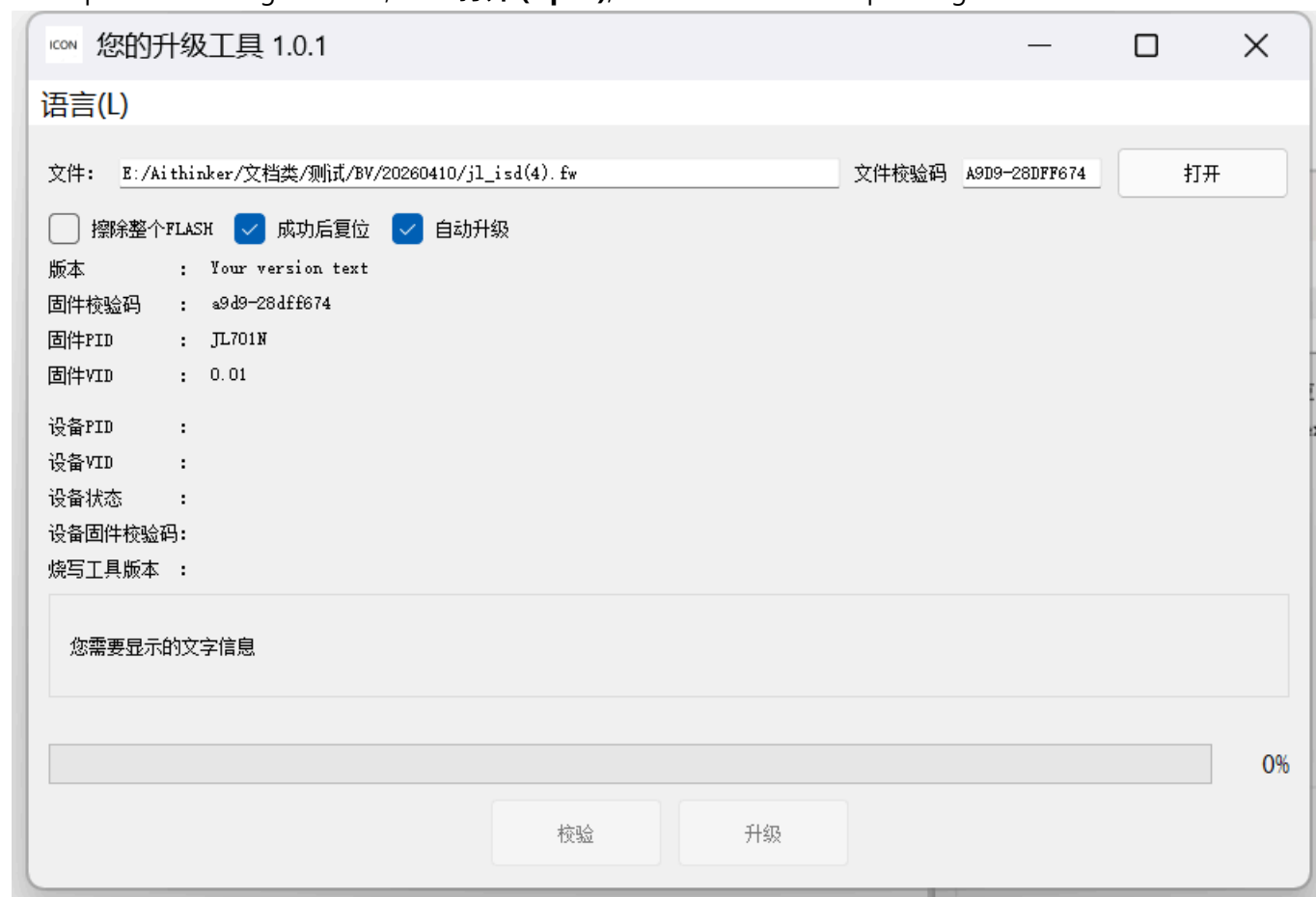
2. Wiring

Flashing Tool	Ai-BV01-32S
VCC	VDD
GND	GND
DM	USB_DM
DP	USB_DP

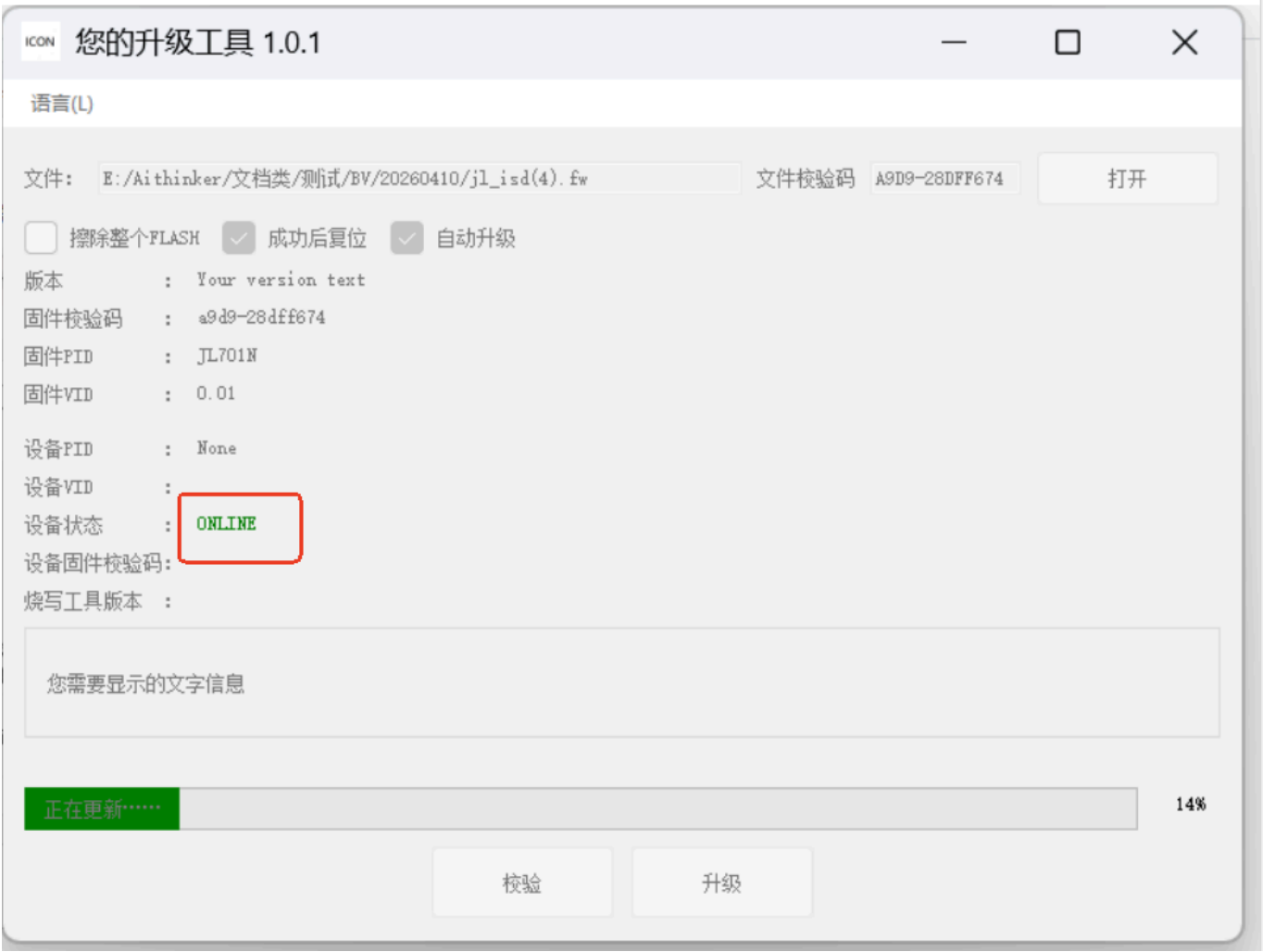


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First open the flashing software, click **打开 (Open)**, and select the corresponding file.



After wiring the programmer, power it on. The red indicator stays on and the green indicator flashes. Press the button on the programmer, and the green indicator will turn off. At the same time, the device status on the host software changes to **ONLINE**, and the **校验 (Verify)** and **升级 (Upgrade)** buttons change from gray to active.



After flashing is complete, the progress bar shows **升级成功 (Upgrade Successful)**.



Note: Checking “擦除整个FLASH” (Erase entire FLASH) in the download tool will erase the MAC address and license!!!

III. Factory Firmware Usage

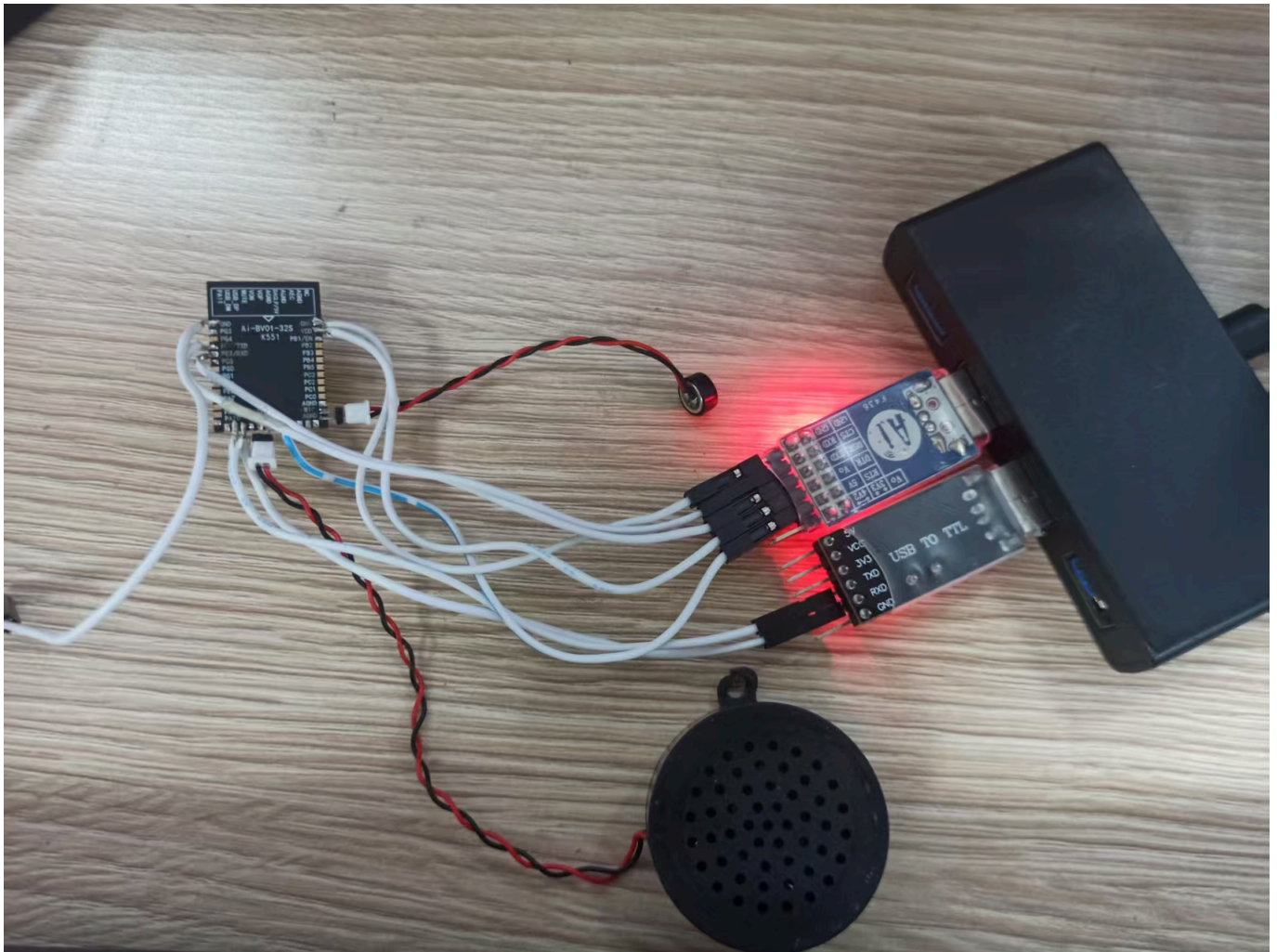
After the factory firmware is flashed, in addition to supplying 3.3V to the module via VDD, a 5V supply for the power amplifier is required. That is, the DACLP/5V pin of the module needs to be connected to 5V. The wiring is shown in the table below:

TTL Tool	Ai-BV01-32S
3.3V	VDD
GND	GND
5V	DACL P/5V
TX	USB_DM
RX	USB_DP
RX	TX
TX	RX

TTL Tool	Ai-BV01-32S
Microphone positive terminal	MIC
Microphone negative terminal	AGND
Speaker positive terminal	VOP
Speaker negative terminal	VON

The TX/RX UART pair of Ai-BV01-32S is the command port for license query and configuration. The USB_DM/USB_DP UART pair is the LOG port for viewing the module operation logs. The baud rate of both ports is 2000000bps.

Physical wiring diagram:



Restart the device, and it will announce “欢迎使用” (Welcome). Turn on the mobile hotspot and enable

个人热点

便携式 WLAN 热点

便携式热点“123”已激活



设置 WLAN 热点

123 WPA2-Personal 便携式



二维码分享



单次热点流量限额

设置单次开启WLAN热点后流量的使用上限



自动关闭热点

长时间无设备连接，自动关闭热点



USB 网络共享

USB未连接



蓝牙网络共享

通过蓝牙共享该手机的互联网连接



network sharing via Bluetooth.

设备管理

Search for a Bluetooth device named “小安AI” on the phone and tap to connect.



After the network connection is successful, the module connecting to the network for the first time will announce a six-digit device verification code. After successfully registering an account on the [Xiaozhi Platform](#), enter the device verification code into the intelligent agent device.



After the device is added successfully, wake up the module by saying “你好小安” (“Hello Xiao’an”), and then you can start a dialogue.

In addition to online voice dialogue, Ai-BV01-32S can also connect to Bluetooth to play music from mobile phones. The specific steps are as follows:

1. Use the voice command “你好小安，打开助手” (“Hello Xiao’an, open the assistant”) to open the mobile phone voice assistant. **Note: The voice assistant must have Bluetooth wake-up enabled; otherwise, it cannot be woken up.**
2. After opening the assistant, use the voice command “播放音乐” (“Play music”). The voice assistant will open the music app on the phone and start playing music.
3. Use the voice command “你好小安，下一首” (“Hello Xiao’an, next song”), and the voice assistant will switch to the next song.

4. Use the voice command “你好小安，上一首” (“Hello Xiao'an, previous song”), and the voice assistant will switch to the previous song.
5. Use the voice command “你好小安，暂停播放/停止播放” (“Hello Xiao'an, pause playback/stop playback”), and the voice assistant will pause/stop the music playback.