

ESP32 Agent Dev Kit Manual

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1. Product Overview

1.1 Features



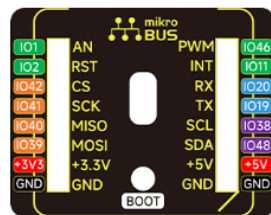
This product is the "ESP32 Agent Dev Kit" development kit. The following are the main features of the kit:

1. **AI Empowered** : This kit is powered by artificial intelligence.
2. **16 M-bus interface** : Supports 16 M-bus interface, which may be used to connect and manage multiple devices or sensors.
3. **Open-sourced** : The development kit is open source, allowing community contributions and modifications.
4. **3.5 inch LCD** : Equipped with a 3.5-inch LCD display for visual output.
5. **WI-FI & Bluetooth** : Supports WI-FI and Bluetooth connections for wireless communication.
6. **ESP32S3** : Based on the ESP32S3 microcontroller, known for its low power consumption and dual- core processing capabilities.

Designed for developers of Internet of Things (IoT) projects, this kit provides a versatile platform for integrating various sensors and devices with artificial intelligence capabilities.

1.2 Development reserved interface description

This product uses Espressif ESP32S3. You can see that there is a mikroBUS interface on the back of the product for custom development of embedded systems and IoT projects. Users can develop freely according to their own needs.

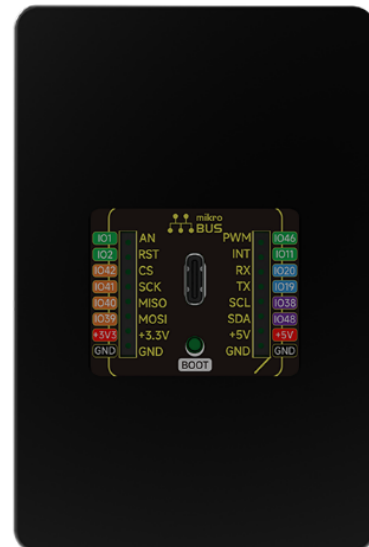


-LEFT-

AN Analog input	RST Reset	CS Chip Select
SCK Serial Clock (SPI)	MISO Master In Slave Out	MOSI Master Out Slave In
+3.3V 3.3V power supply	GND Ground	BOOT Boot button

-RIGHT-

PWM Pulse Width Modulation	INT Interrupt	RX/TX UART communication
SCL/SDA I ² C communication	+5V 5V power supply	GND Ground



The following is a detailed explanation of each pin of the interface:

Left pin:

- **AN** : Analog input
- **RST** : reset

- **CS** : Chip Select
- **SCK** : Serial Clock (SPI)
- **MISO** : Master In Slave Out (SPI)
- **MOSI** : Master Out Slave In (SPI)
- **+3.3V** : 3.3V power supply
- **GND** : Ground

Right side pins:

- **PWM** : Pulse Width Modulation
- **INT** : Interrupt
- **RX/TX** : UART communication
- **SCL/SDA** : I²C communication
- **+5V** : 5V power supply
- **GND** : Ground

Middle pin:

- **BOOT** : Boot button

Other notes:

- **IO1 , IO2 , IO42 , IO41 , IO40 , IO39 , IO46 , IO11 , IO20 , IO19 , IO38 , IO48** : These are the general purpose input and output (GPIO) pins.
- **PWM** : For pulse width modulation output.
- **INT** : Used for interrupt input.
- **RX/TX** : Used for receiving and sending UART communication.
- **SCL/SDA** : Clock and data lines for I²C communication.
- **+3.3V** and **+5V** : Provide 3.3V and 5V power respectively.
- **GND** : Ground wire, used for circuit grounding.

This interface provides rich functions, including analog input, digital input and output, SPI communication, I²C communication, UART communication, etc., suitable for a variety of embedded and IoT applications.

Combined with ESP-IDF, secondary development of this product can be easily performed through the serial port;

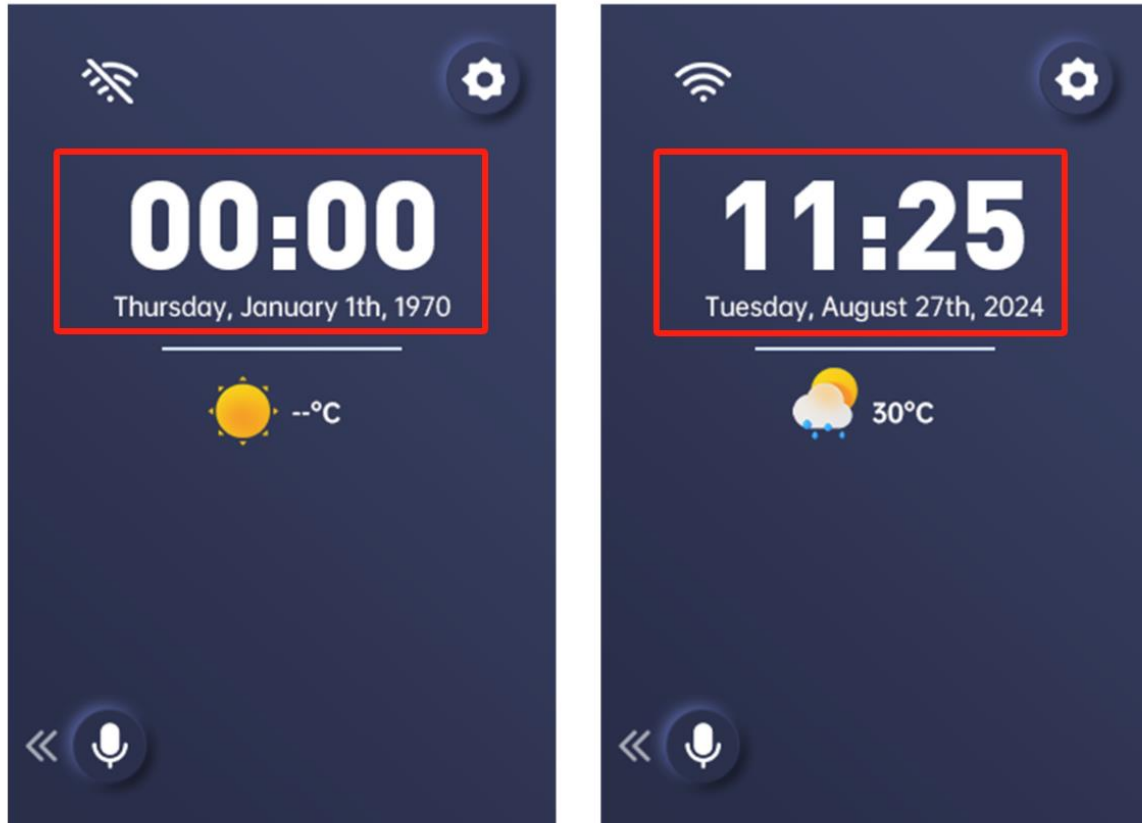
For more information, please refer to: [ESP-IDF Programming Guide - ESP32-S3 - & mdash; ESP-IDF Programming Guide v5.3.2 documentation](#)

1.3 Equipment Specifications

- **LLM Model** : Supported large language models include Chatgpt , Gemini, and Claude.
- **CPU** : Adopts Xtensa® dual-core 32-bit LX7 microprocessor.
- **LCD Screen Display** : 3.5-inch display with a resolution of 320x480.
- **WI-FI** : Supports WI-FI 4 (802.11 b/g/n).
- **Bluetooth** : Supports Bluetooth 5 and Bluetooth mesh.
- **Power supply** : The power supply is 5V.
- **Compatible development platform** : Compatible with Arduino and ESP-IDF development platforms.
- **Flash** : Built-in 16MB flash memory.
- **PSRAM** : Built-in 8MB PSRAM.
- **Speaker** : High-fidelity speakers.
- **Microphone** : Dual microphones, pre-amplified ASIC, high sensitivity.
- **Product size** : The product size is 94 x 62 x 13.6 mm.
- **Weight** : The weight is 92 grams.
- **Operating temperature** : The operating temperature range is 0°C to 60°C.
- **Case Material** : The case material is aluminum alloy.

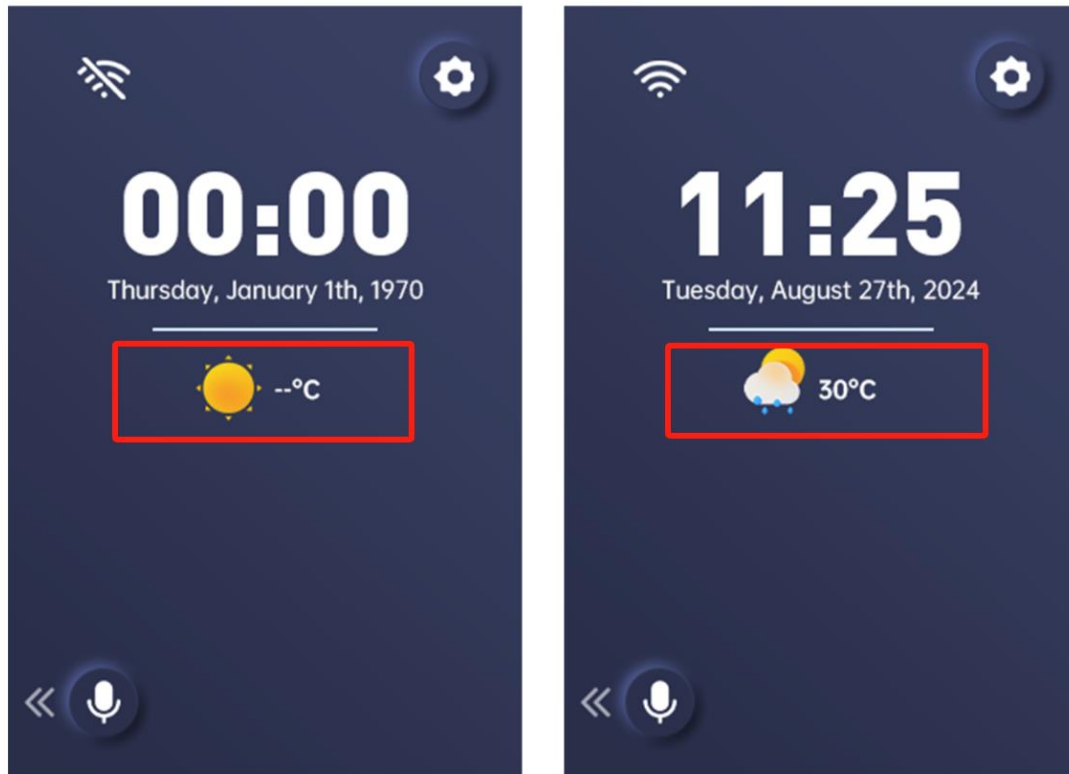
2. MainScreen

2.1 Date and Time



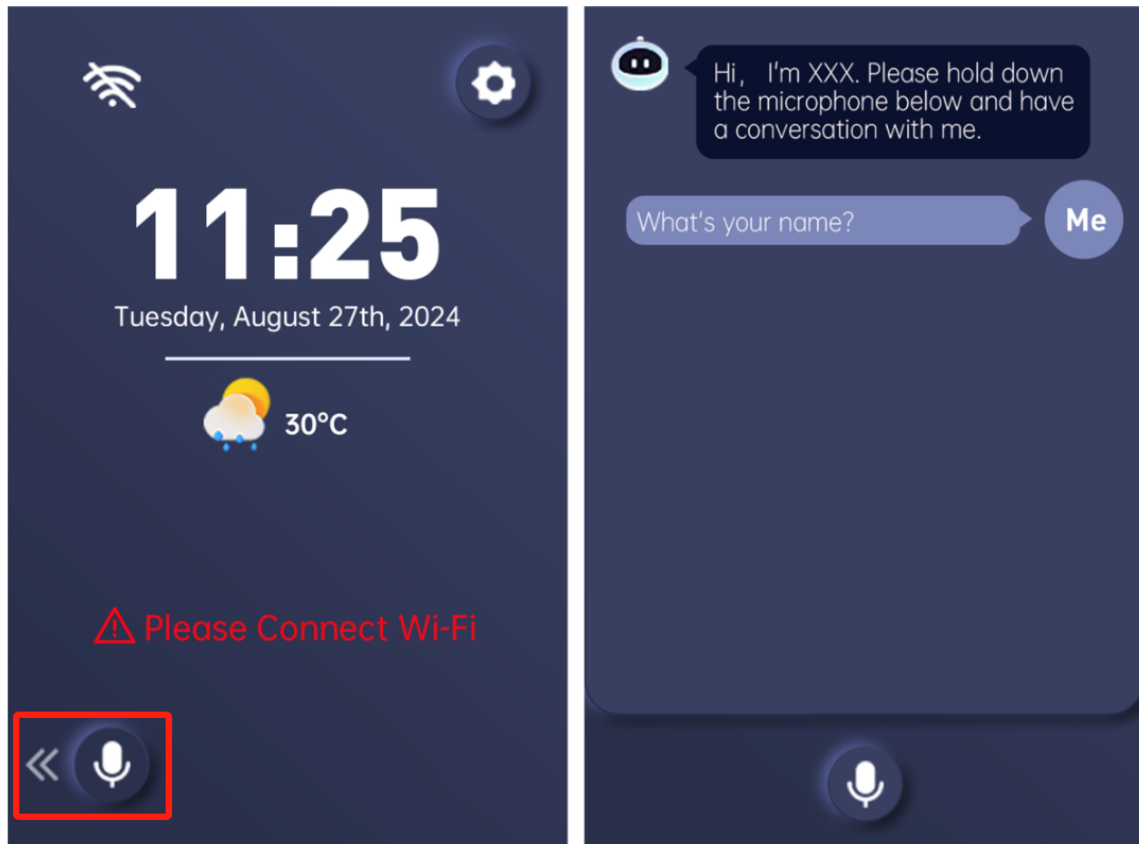
- The left picture shows the initial date and time after the product is started without an Internet connection;
- The right picture shows the date and time that is automatically updated after connecting to the Internet;

2.2 Wether Information



- The left picture shows the initial weather information after the product is started and not connected to the Internet;
- The picture on the right shows the weather information that is automatically updated after connecting to the Internet;

2.3 Function switching button



How to use the smart voice assistant function?

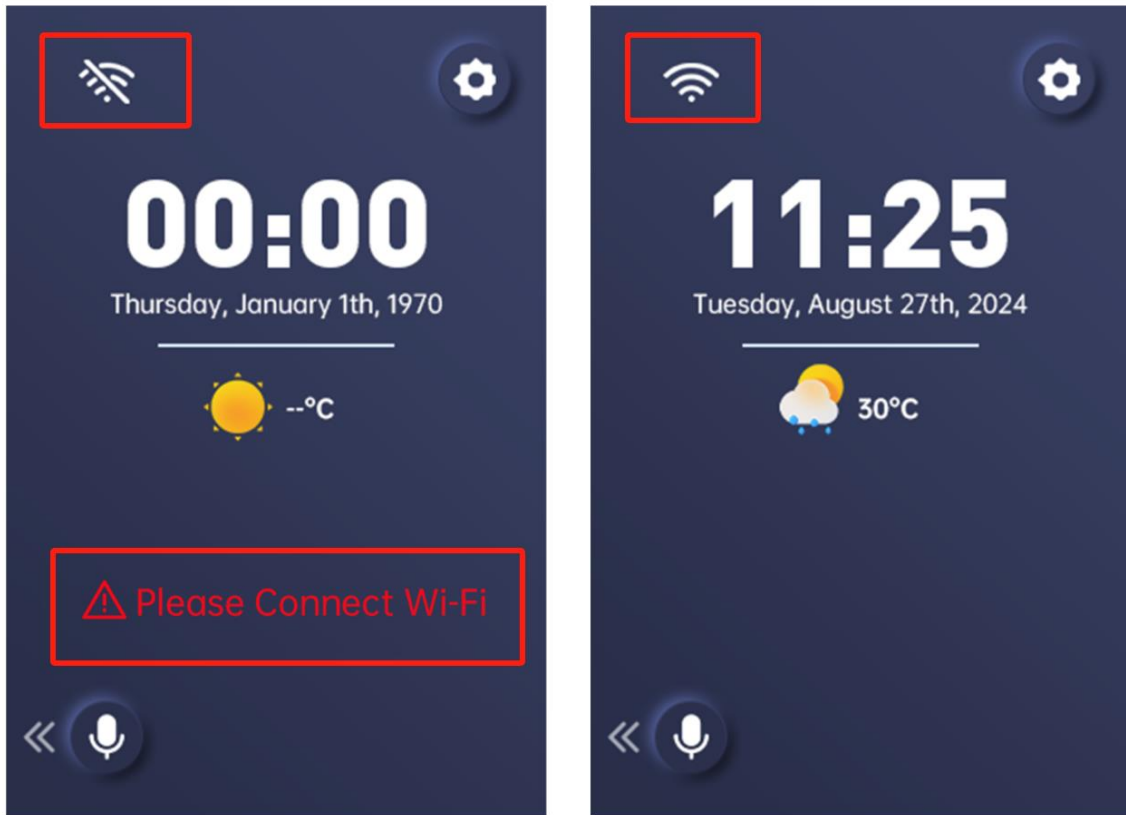
Click this button to enter the smart voice assistant interface;

Or you can swipe left from the middle of the screen to enter the smart voice assistant interface;

How to return to the main interface?

Swipe from the left edge of the screen to the center of the screen to return to the main interface;

2.4 Wi-Fi Status Icon



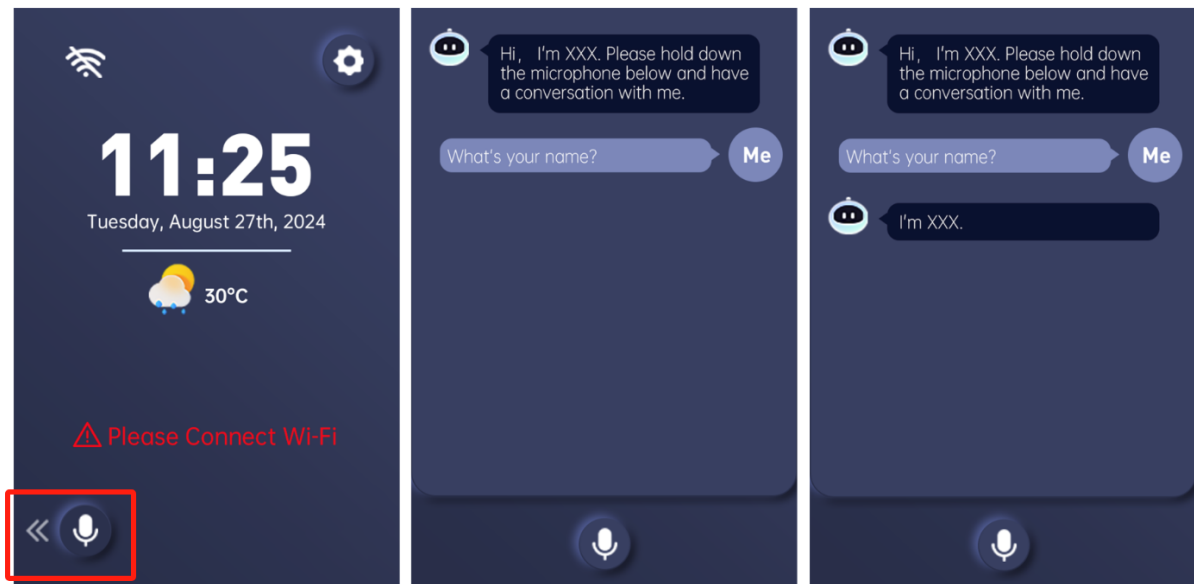
When there is no Internet connection, the words " Please Connect WI-FI" will be displayed , and the icon will also show disconnected;

WI-FI icon without a backslash , and the date, time and weather information will be automatically updated;

3. One-Time Chat

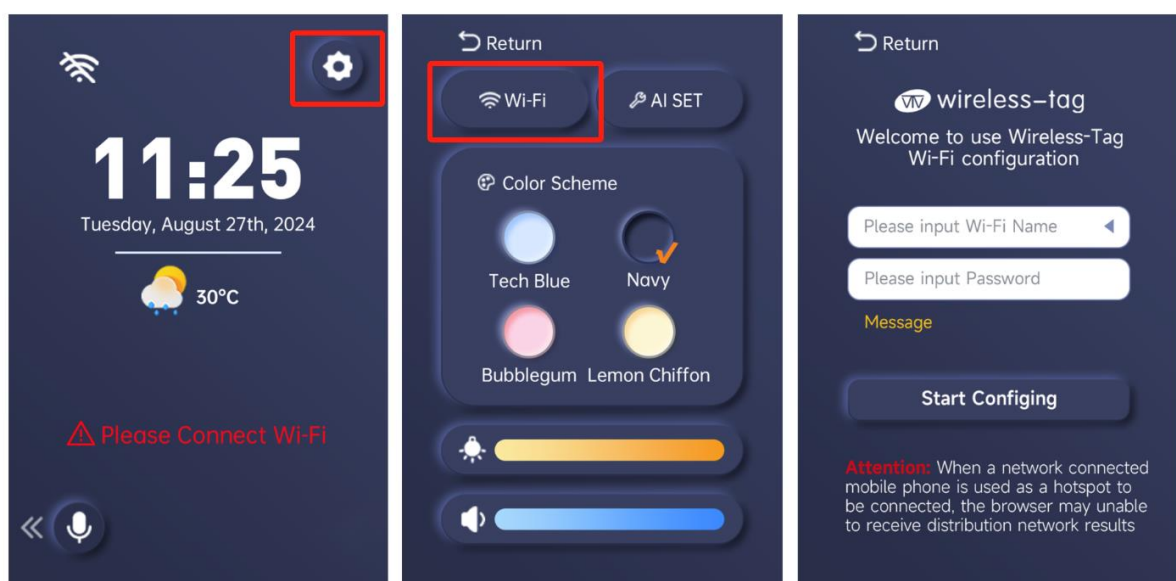
When you are in the main interface, you can see a microphone icon in the lower left corner. Click it to enter the one-time chat interface.

Note: When communicating with the AI voice assistant, you need to hold down the speak button;



4. Setup

4.1 Wi-Fi

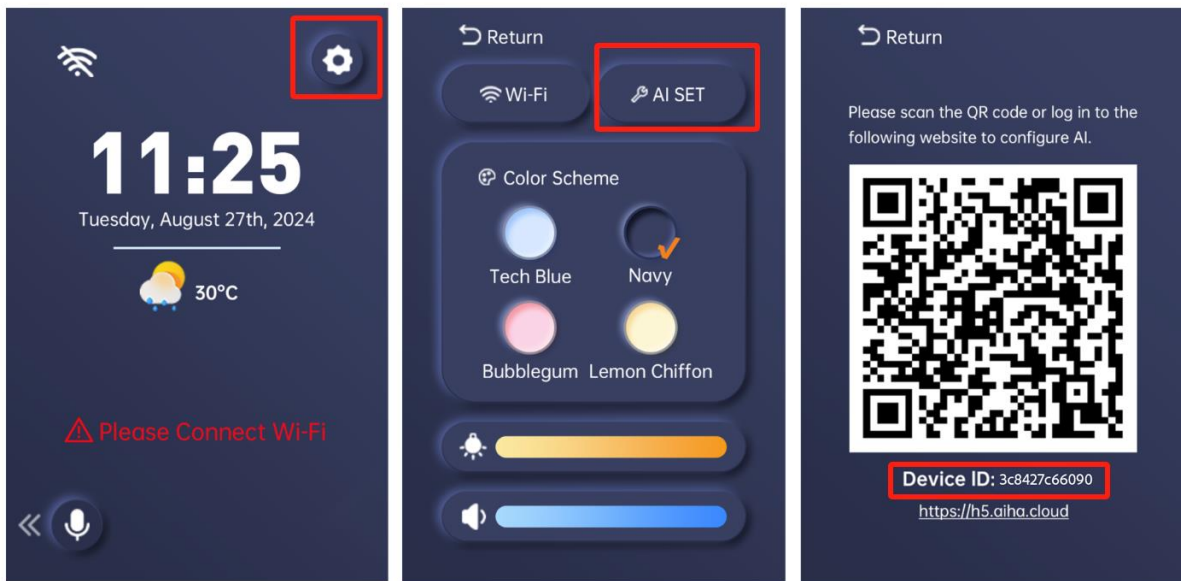


A brief description of the Wi-Fi setup process for this product:

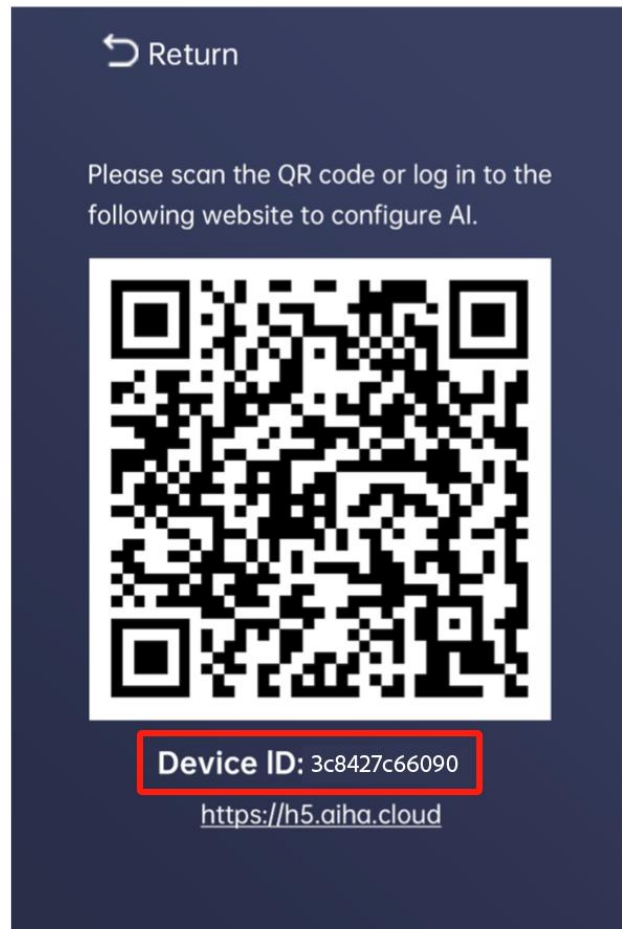
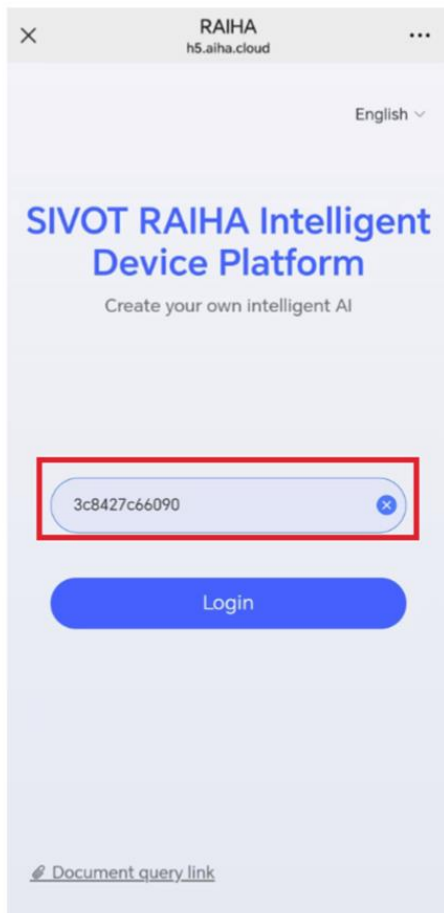
1. First switch to the main interface. As shown in the figure, there is a "gear" icon in the upper right corner. This is the setting button. Click it to enter the setting interface.
2. After entering the settings interface, there is an icon with "WI-FI" on the upper left. This is the WI-FI settings button. Click it to enter the Wi-Fi configuration interface;
3. After entering the Wi-Fi configuration interface, the product will automatically scan and search for nearby WI-FI signals. If the required WI-FI name is not found , you can click the refresh icon on the right side of the WI-FI name box to rescan and search;
4. Click the WI-FI name drop-down menu, select the required WI-FI SSID, that is, the WI-FI name, enter the password, and click the [Start Configuring] button to configure;
5. When [Network connection successful] appears, it means the WI-FI network configuration is successful;
6. The configured WI-FI information will be saved by this product, and the next time the product is powered on, it can automatically connect to the configured WI-FI network;

4.2 AI SET

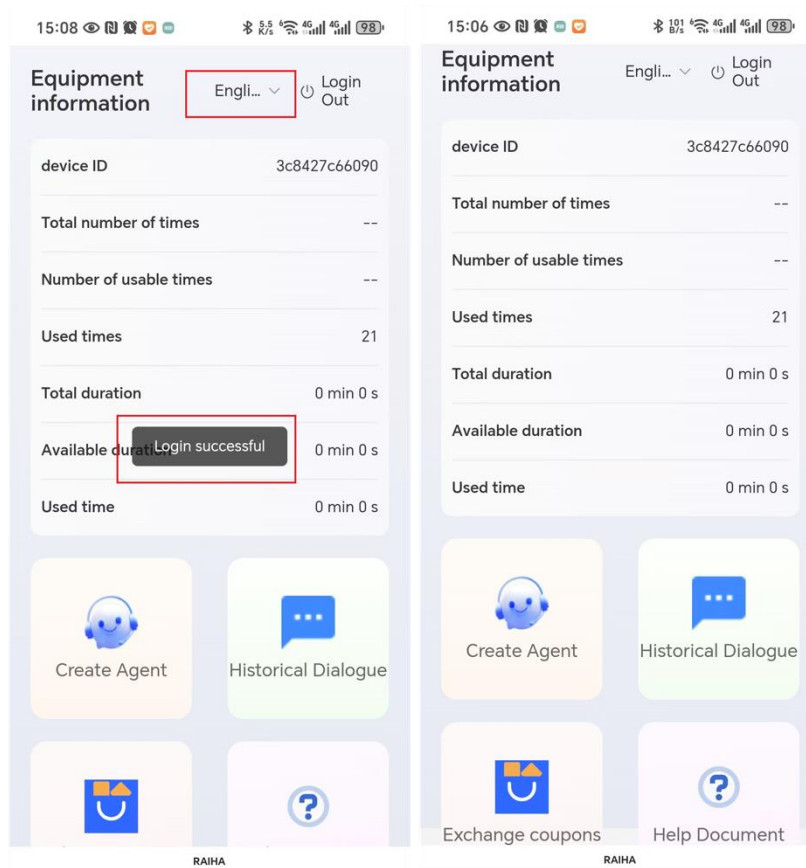
1. First enter the settings interface, you can see the [AI SET] icon, click it to enter the AI configuration interface;
2. On the AI configuration interface, you can see a QR code and device ID. First, scan the QR code with a browser to enter the AI model configuration interface;



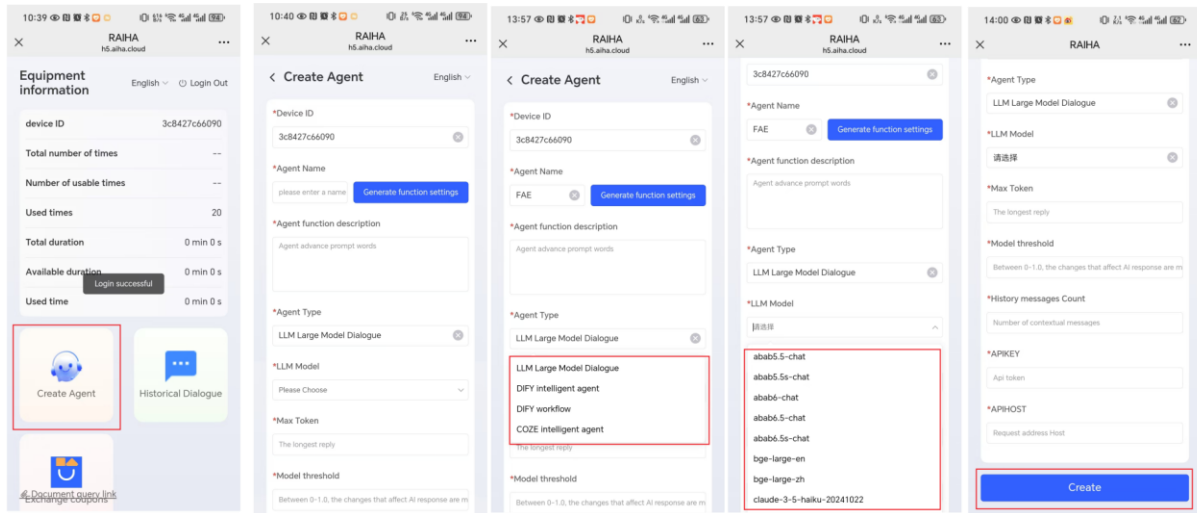
- 3、 Scan the QR code with the browser to enter the interface shown in the figure, fill in the [Device ID] on the product, and click the [Login] icon after confirming that it is correct;



4. After logging in, the words "Login successful" will be displayed, and you will enter the [Device Information Interface], where you can see the "Device Number", "Total Times", "Usable Times", "Used Times", "Total Duration", "Usable Duration" and "Used Duration" information; you can choose the Chinese and English interface in the upper right corner, and there is a [Login Out] button on the far right, press it to log out;



5. You need to create an AI agent for the first use. Click the [Create Agent] icon to enter the AI agent creation interface;



6. After entering the AI agent creation interface, you can see the information to fill in the form as shown in the figure:

7. The device ID will be automatically filled in;

8. The name can be customized;

9. The agent settings can be filled in freely according to preferences;

10. There are four types of agents: [LLM Large Model Dialogue] [DIFY Agent] [DIFY Workflow] [COZE Agent];

11. If you select [LLM Large Model Dialogue], you need to select the LLM large language model. This product contains up to [111] LLM large language models, covering most of the LLM large language models on the market;

12. Then set [Maximum Token] [Model Threshold] [Number of Historical Messages] [APIKEY] and [APIHOST];

13. If the selected agent is [DIFY Agent], you only need to fill in [APIKEY] and [APIHOST];

14. If the selected agent is [DIFY Workflow], you only need to fill in [APIKEY] and [APIHOST];

15. If the selected agent is [COZE Agent], you need to fill in [Application ID] [APIKEY] and [APIHOST];

The image displays three sequential screenshots of the 'Create Agent' form in the RAIHA application. Each screenshot shows the same form with the following fields: Device ID (3c8427c66090), Agent Name (FAE), Agent Type, APIKEY (Api token), and APIHOST (Request address Host). The 'Agent Type' field is highlighted with a red box in each screenshot, showing different selections: 'DIFY intelligent agent' in the first, 'DIFY workflow' in the second, and 'COZE intelligent agent' in the third. A blue 'Create' button is visible at the bottom of each form.

16. After filling in all the information, you can generate an AI agent in this product and enter the AI chat interface to have a happy chat;

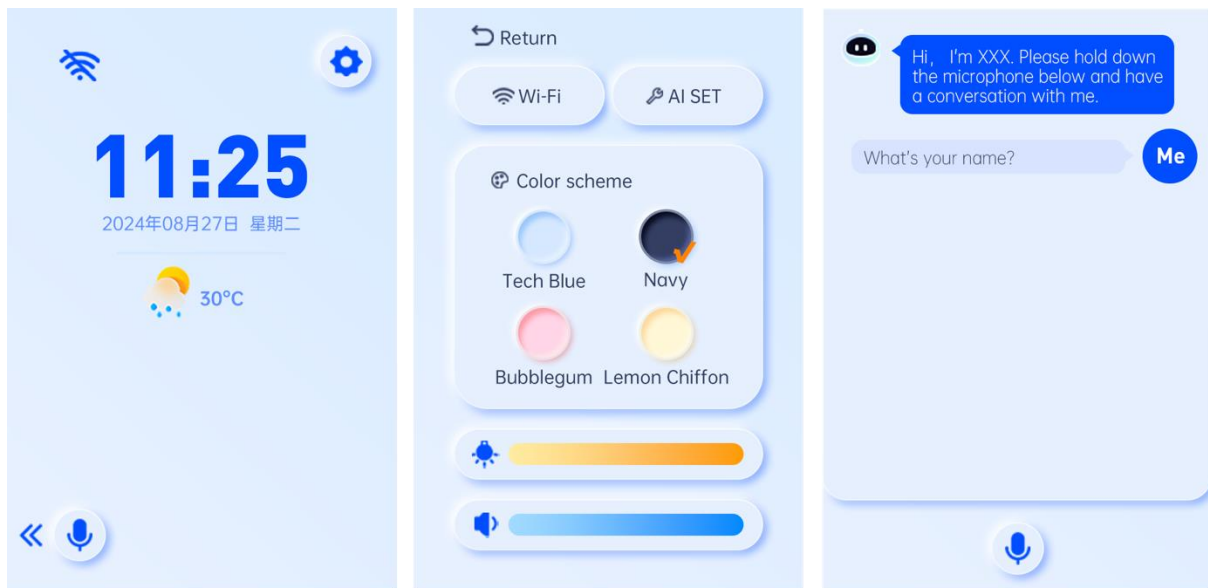
5.3 Color Scheme

This product has four color schemes: Tech Blue, Navy Blue, Bubble Gum Pink and Lemon Chiffon

How to set it up:

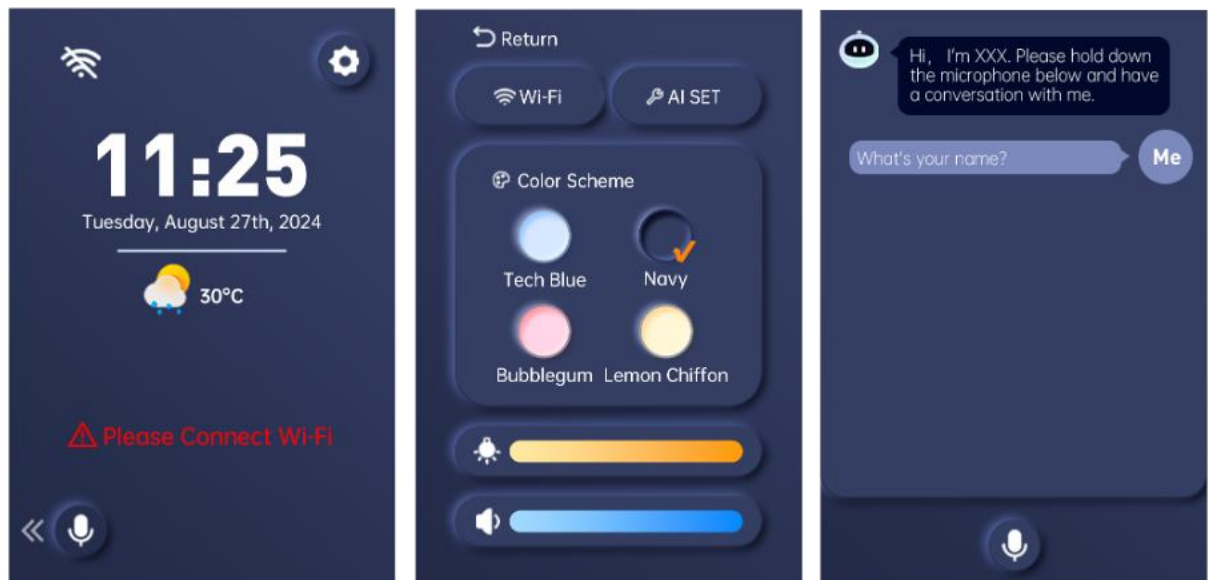
First enter the settings interface, you can see the [Color Scheme] settings box, click on the circles of different colors to switch color schemes;

Technology Blue Theme



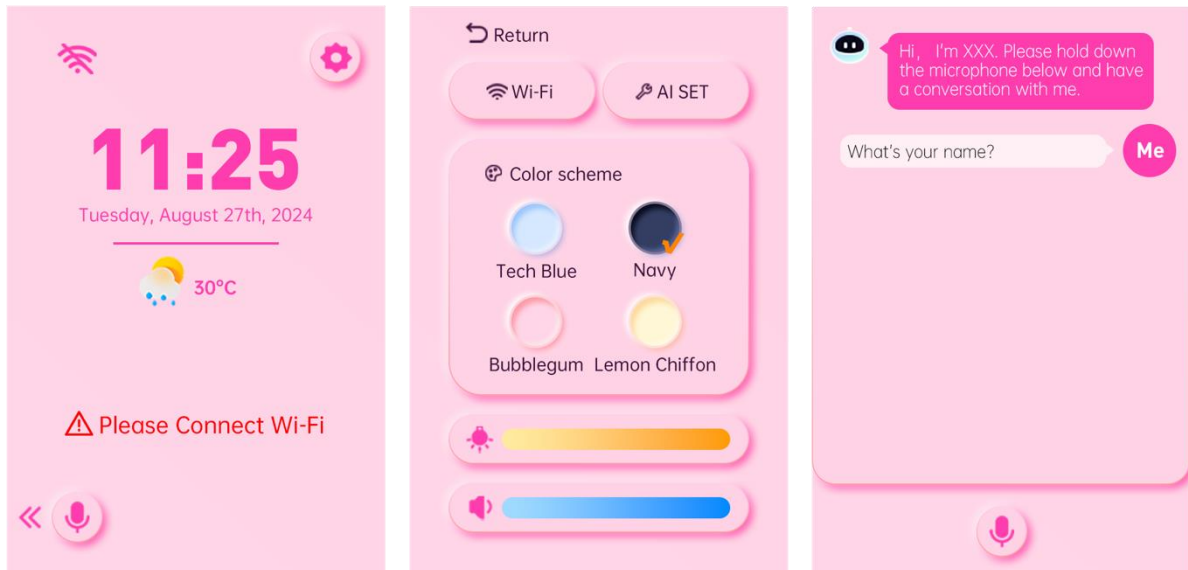
Tech Blue is a blue hue with a sense of technology and modernity. With high saturation and brightness, it gives a clear, eye-catching and energetic feeling, conveying calmness, professionalism and reliability.

Navy Blue Theme



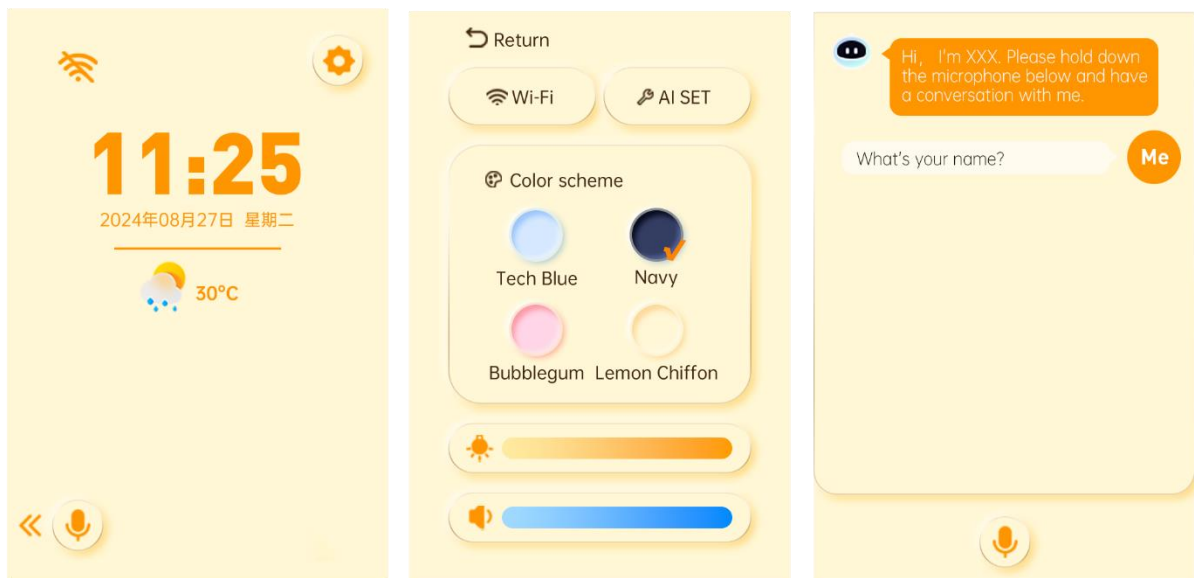
Navy blue is a stable and solemn color, giving people a professional and reliable color. It is slightly softer than black, but also has a certain depth and mystery.

Bubble Gum Pink Theme



Bubble gum pink is a bright, girly pink color that gives people a sweet, cute and lively feeling.

Lemon Chiffon Theme

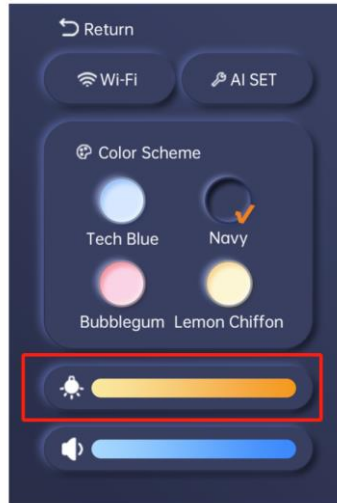


The scheme is based on a soft tone of lemon yellow chiffon, giving it a fresh, bright feel.

5.4 Light

How to set it up:

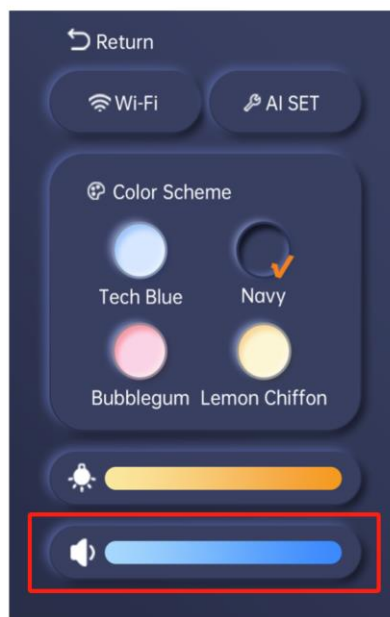
First enter the settings interface, you can see a [light bulb] icon, drag the slider left or right to adjust the screen brightness;



5.5 Volume

How to set it up:

First enter the settings interface, you can see a [small speaker] icon, pull the slider left or right to adjust the product volume;



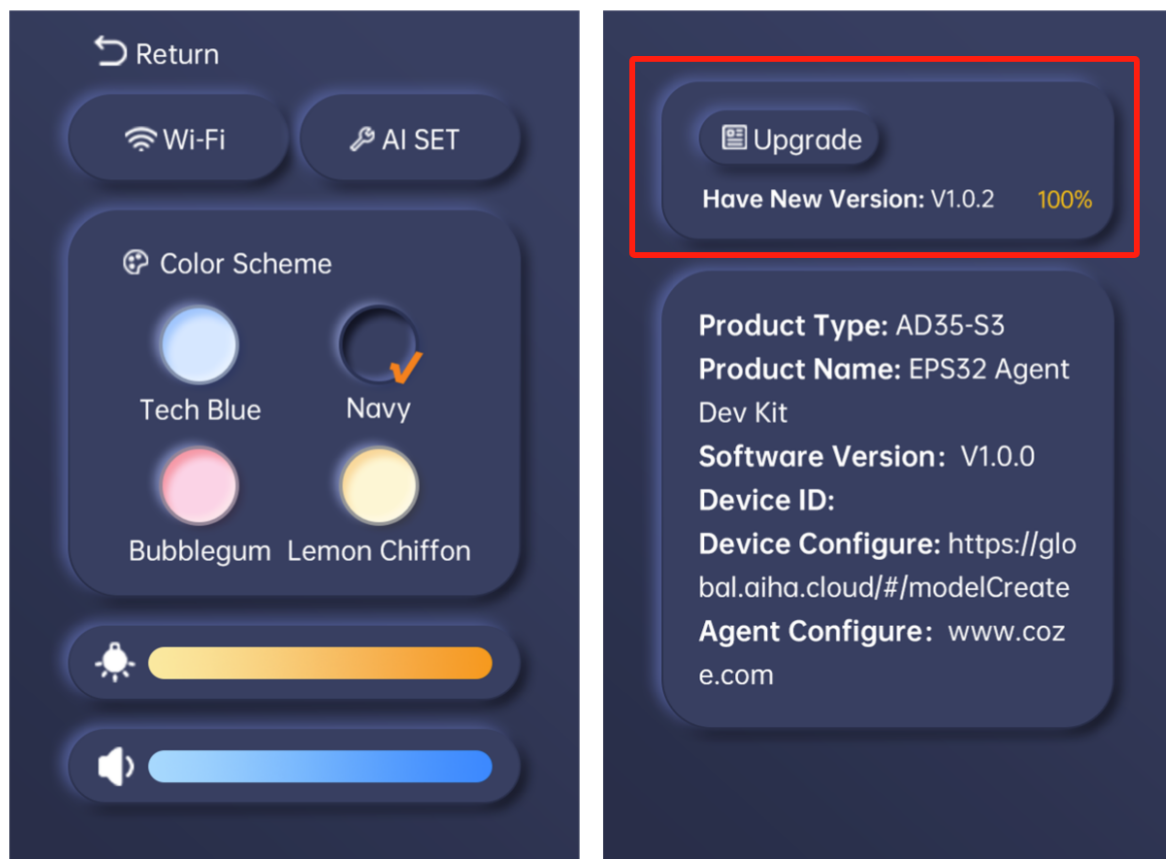
5.6 Upgrade

If you want to upgrade, you first need to return to the [Settings Interface], which is a slidable interface;

Swipe up from the middle of the screen and you will see the interface on the right as shown in the picture;

You can see that if this product is the latest version at this time, there is no need to upgrade;

If it is not the latest version, an [Upgrade] button will appear here, and you can upgrade to the latest version as needed;

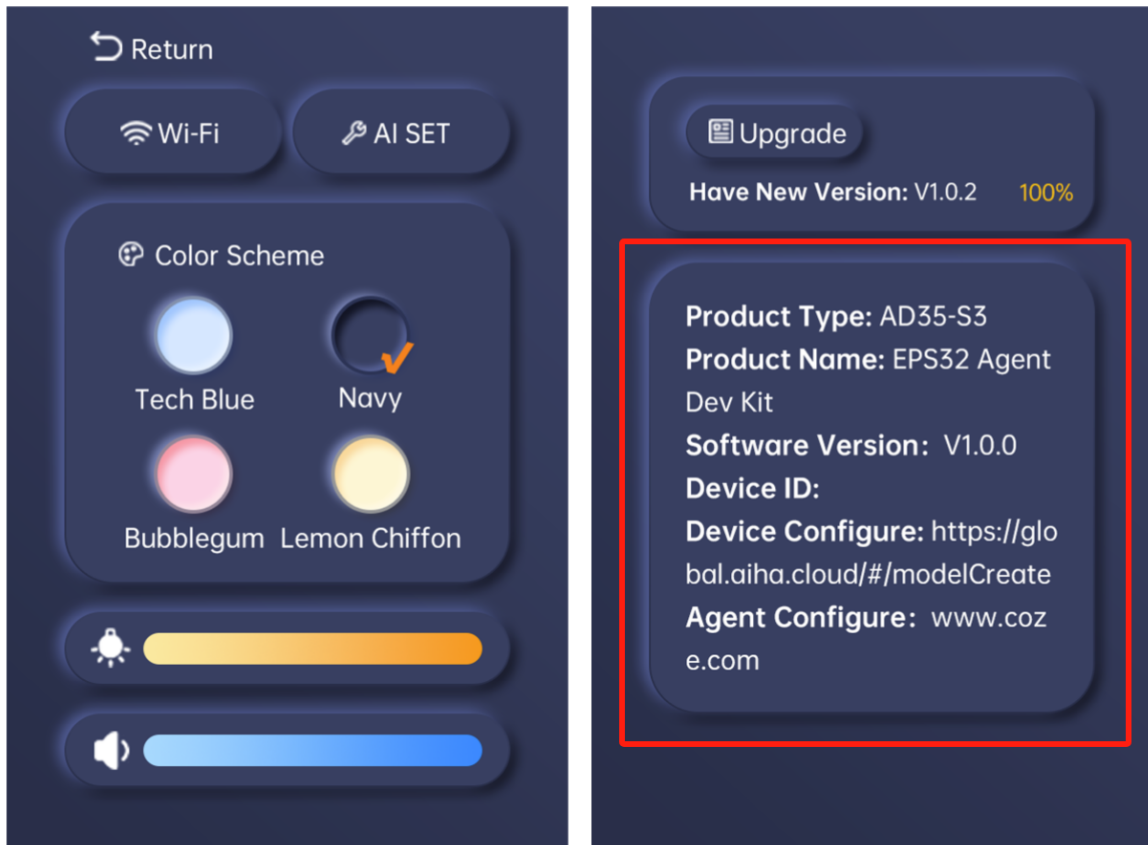


5.7 Product Information

If you need to view product information, you first need to enter the [Settings Interface], which is a slidable interface;

Swipe up from the middle of the screen and you will see the interface on the right as shown in the picture;

In this interface we can see detailed product information;



As shown in the figure, the product information of this product at this time is:

```
Product Type: AD35-S3
Product Name: ESP32 Agent Dev Kit
Software Version: v1.0.0
Device ID:
Device Configure: https://global.aiha.cloud/#/modelCreate
Agent Configure: www.coze.com
```