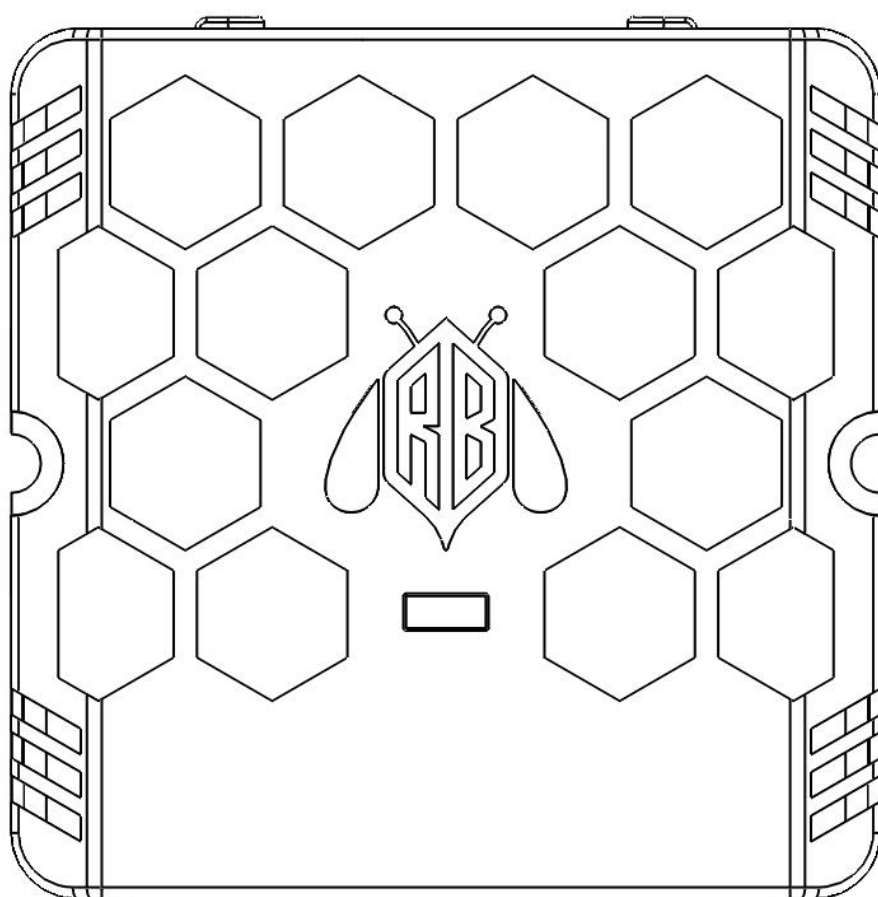


Root Maker 基础套装

快速入门指南

使用本产品前，请仔细阅读本指南





产品官网

了解更加详细的产品信息，获取作最新产品信息。

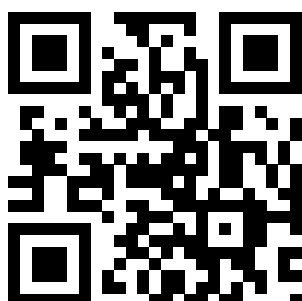
www.ryzobee.com



项目模板

您可以在这里浏览 RootMaker 项目，下载固件、装配指南、物料清单和 3D 打印文件，并快速复刻官方或社区创作者发布的互动作品。

zoner.ryzobee.com



WIKI站

您可以在这里获取详细的产品说明与相关文件，学习从入门到进阶的教程。

wiki.ryzobee.com



Github

您可以在这里获取我们的代码仓库，如果您希望进行二次开发，请访问这里。

github.com/Ryzobee

使用前须知

使用前须知

在使用 RootMaker 前，请先阅读以下内容，以确保设备能够安全、稳定地运行，并避免因错误接线或供电不当导致设备损坏。

产品用途说明

RootMaker 是一款面向 Maker、3D 打印创作者和开发者的模块化控制器，可用于为 3D 打印作品添加灯光、动作、传感器、Wi-Fi 控制和互动功能。

本产品适用于：

- 3D 打印互动作品
- 创客项目原型验证
- 教育与课程实验
- 桌面摆件与模型改造
- LED、电机、传感器类项目开发

本产品不建议用于生命安全、医疗、工业安全控制或其他高可靠性场景。

安全注意事项

使用 RootMaker 时，请遵守以下安全要求：

1. 仅使用 5V USB-C 电源 为设备供电。
2. 请勿使用超过产品规格的电压输入。
3. 请勿在设备通电状态下插拔 LED、电机、传感器或其他外设模块。
4. 避免金属物体接触 PCB、接口或裸露焊盘，以防短路。
5. 避免设备接触液体、潮湿环境或导电粉尘。
6. 请勿用手直接接触正在工作的裸露焊盘、接口或元器件。
7. 使用电机、舵机、灯带等大电流负载时，请确认电源电流足够。
8. 如果设备出现异常发热、异味、冒烟或反复重启，请立即断电并检查接线。

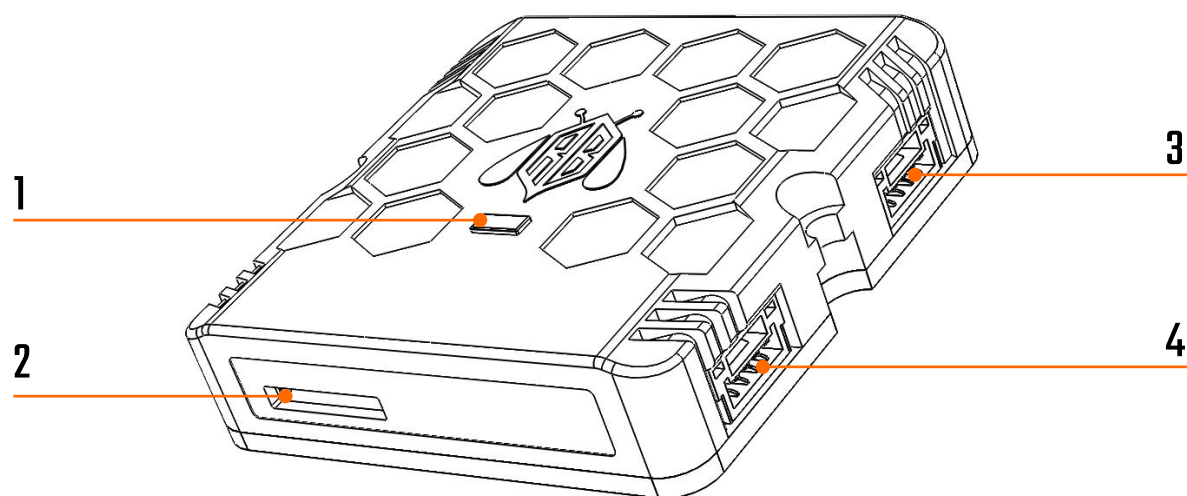


图1

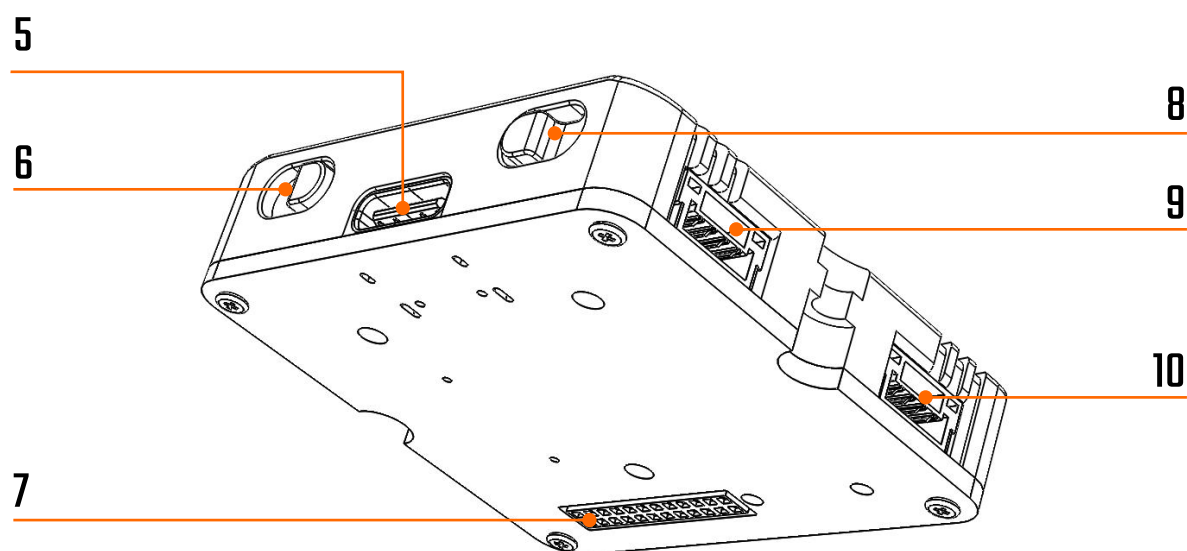


图2

- | | |
|---------------|--------------------|
| 1) RGB LED指示灯 | 6) BOOT按键 |
| 2) S-BUS接口 | 7) F-BUS接口 |
| 3) RS-PORT2接口 | 8) RESET/POWER 按键* |
| 4) RS-PORT4接口 | 9) RS-PORT1接口 |
| 5) USB-C接口 | 10) RS-PORT3接口 |

*该按键为多功能按键，短按复位，在使用电池的情况下长按开关机

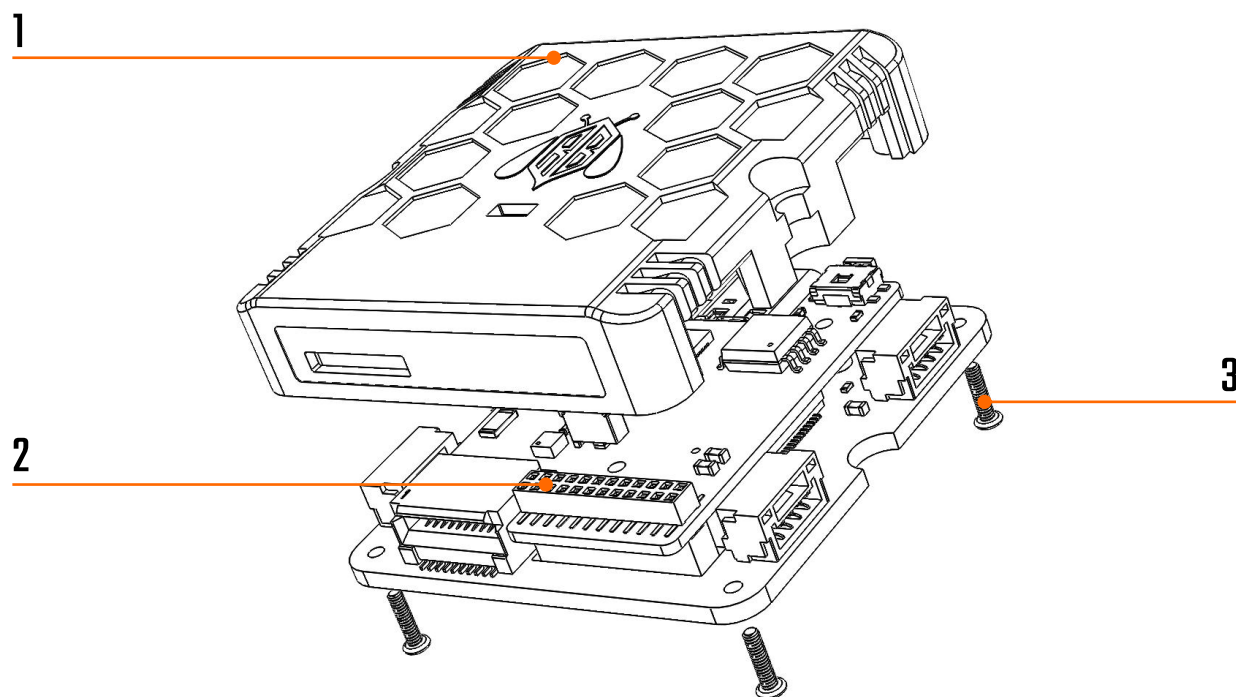


图3

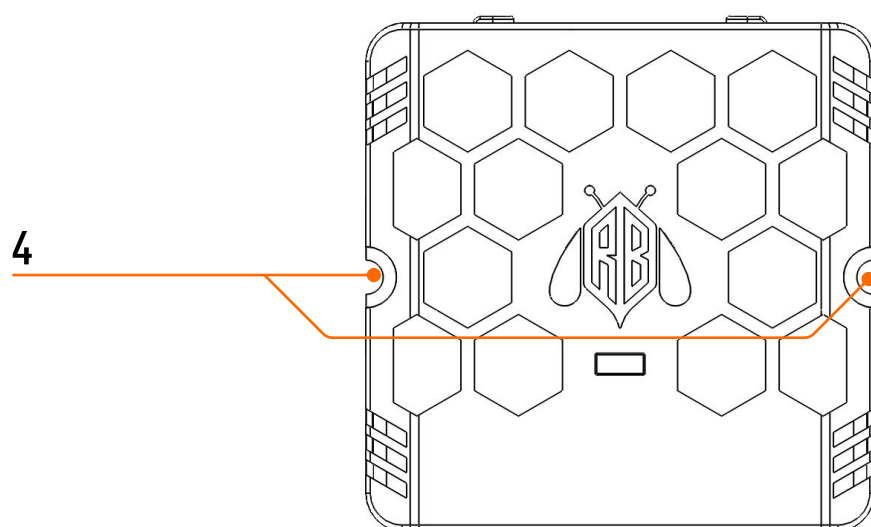
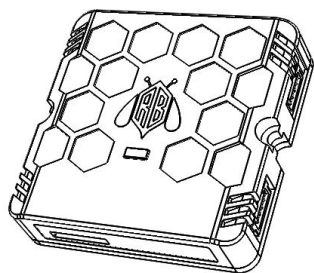


图4

- | | |
|------------|------------------|
| 1) 顶部装饰件 | 4) LEGO 乐高兼容*固定孔 |
| 2) F-BUS接口 | |
| 3) M1.2螺丝 | |

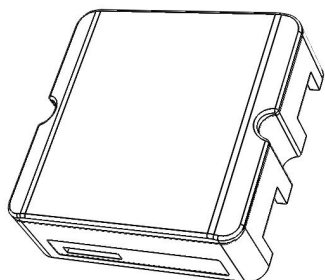
*LEGO®/ 乐高®为 LEGO Group 的注册商标。本产品非 LEGO Group 官方产品，未获得其授权、赞助或认可。“积木兼容”仅表示机械尺寸兼容，不代表品牌合作关系。

配件清单



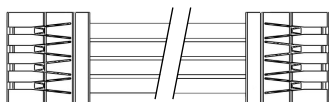
1) RootMaker主机

x1



2) RootMaker 1.54寸屏幕配件

x1



3) 4P 200mm连接线

x4



4) M1.2 x 5螺丝

x4



5) 十字螺丝刀

x1

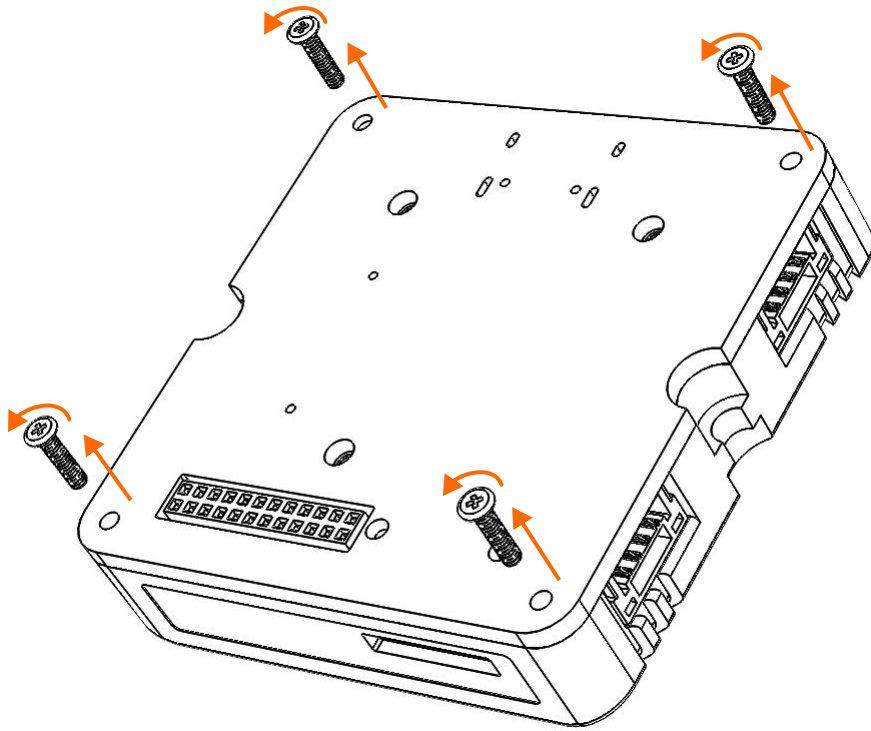


屏幕配件装配前须知

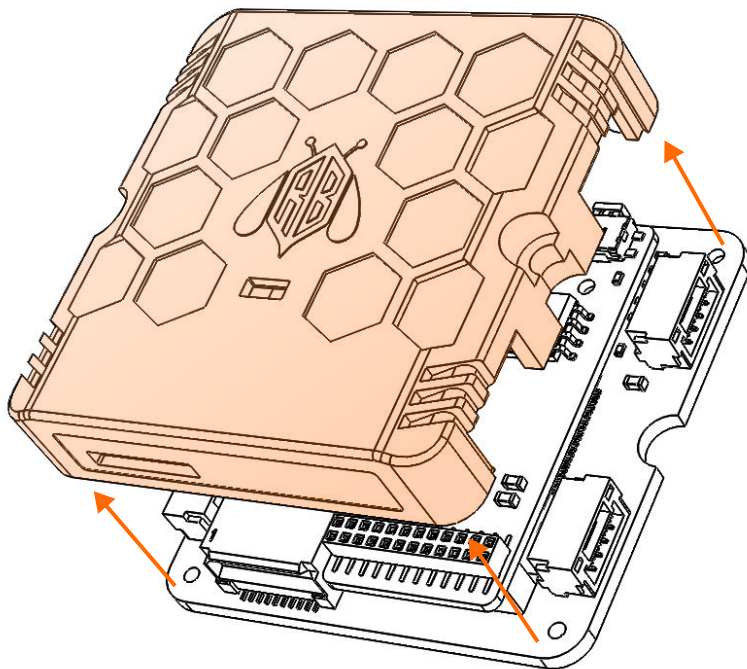
在安装 RootMaker 屏幕配件前，请先阅读以下注意事项：

1. 装配前请先断电
请勿在 RootMaker 通电状态下插拔屏幕排线、转接板或屏幕模块。
2. 注意排线方向
屏幕排线接口有方向要求，请确认朝向正确后再插入。方向错误可能导致屏幕不亮或损坏。
3. 请勿强行插入接口
如果排线无法顺利插入，请停止操作并重新确认接口方向与位置，避免损坏排线或连接器。
4. 避免弯折屏幕排线
请勿大角度折叠、反复弯折或拉扯屏幕排线，以免造成接触不良。
5. 避免按压屏幕显示区域
装配时请握持屏幕边框，不要用力按压屏幕中央区域，避免屏幕破裂或出现显示异常。
6. 固定前先测试显示
建议在完全锁紧外壳或螺丝前，先通电测试屏幕是否正常显示。
7. 避免金属件短路
安装螺丝、铜柱或金属支架时，请确认不会接触 PCB 焊盘、排线触点或屏幕背面裸露区域。
8. 发现异常立即断电
如出现屏幕发热、闪烁、异味、黑屏或设备反复重启，请立即断电并检查连接。

屏幕配件装配指南：取下顶部装饰盖

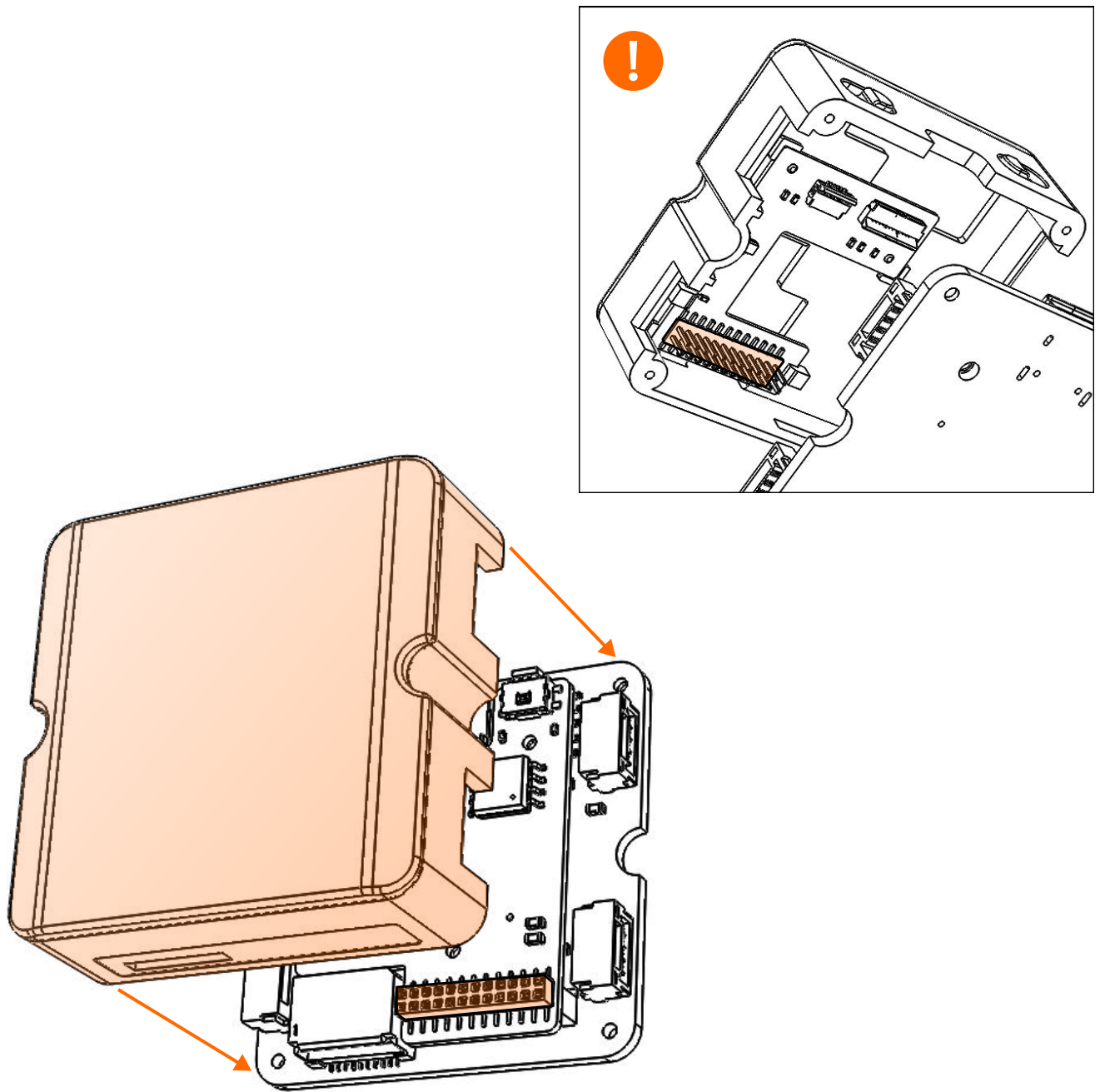


- 1) 使用十字螺丝刀，逆时针转动并取下底部四颗M1.2螺丝，妥善保管螺丝。



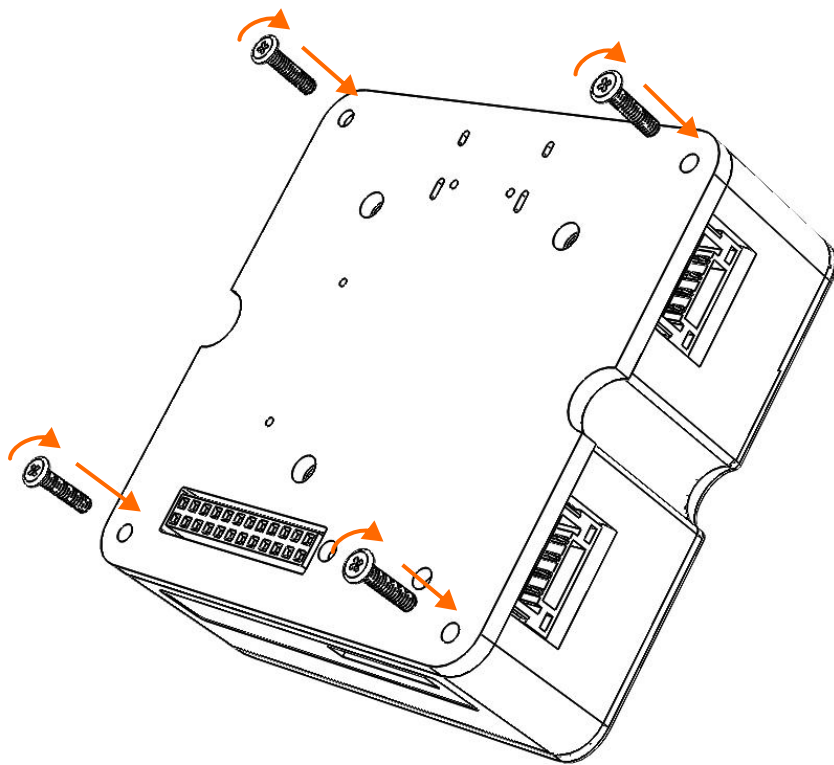
- 2) 翻转至正面，取下顶部装饰件。

屏幕配件装配指南：安装屏幕

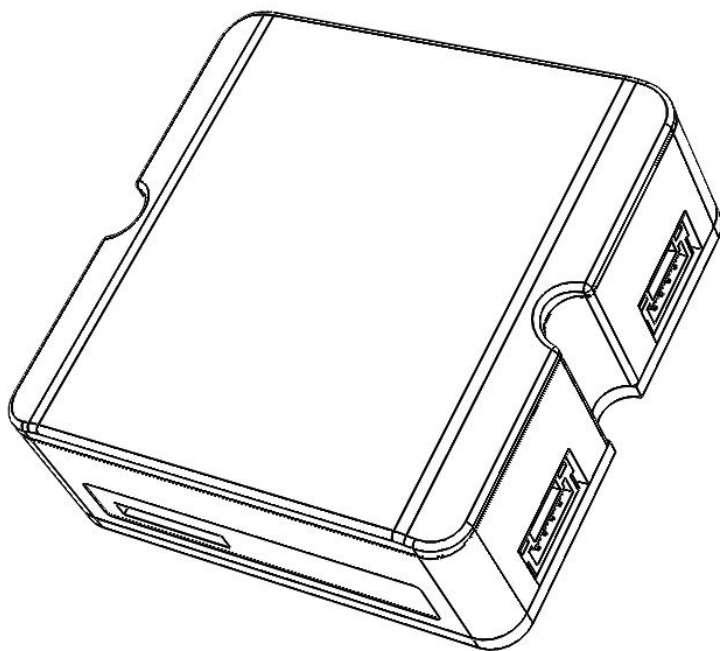


3) 取出屏幕配件，从上至下安装至主板上，注意将屏幕配件的 F-BUS接口对准主板的 F-BUS接口，轻轻按下屏幕配件，使连接器连接稳固，如安装时遇到阻力，请检查 F-BUS接口是否对齐。

屏幕配件装配指南：安装螺丝



4) 翻转至反面，使用十字螺丝刀，顺时针转动并扭紧四颗M1.2螺丝

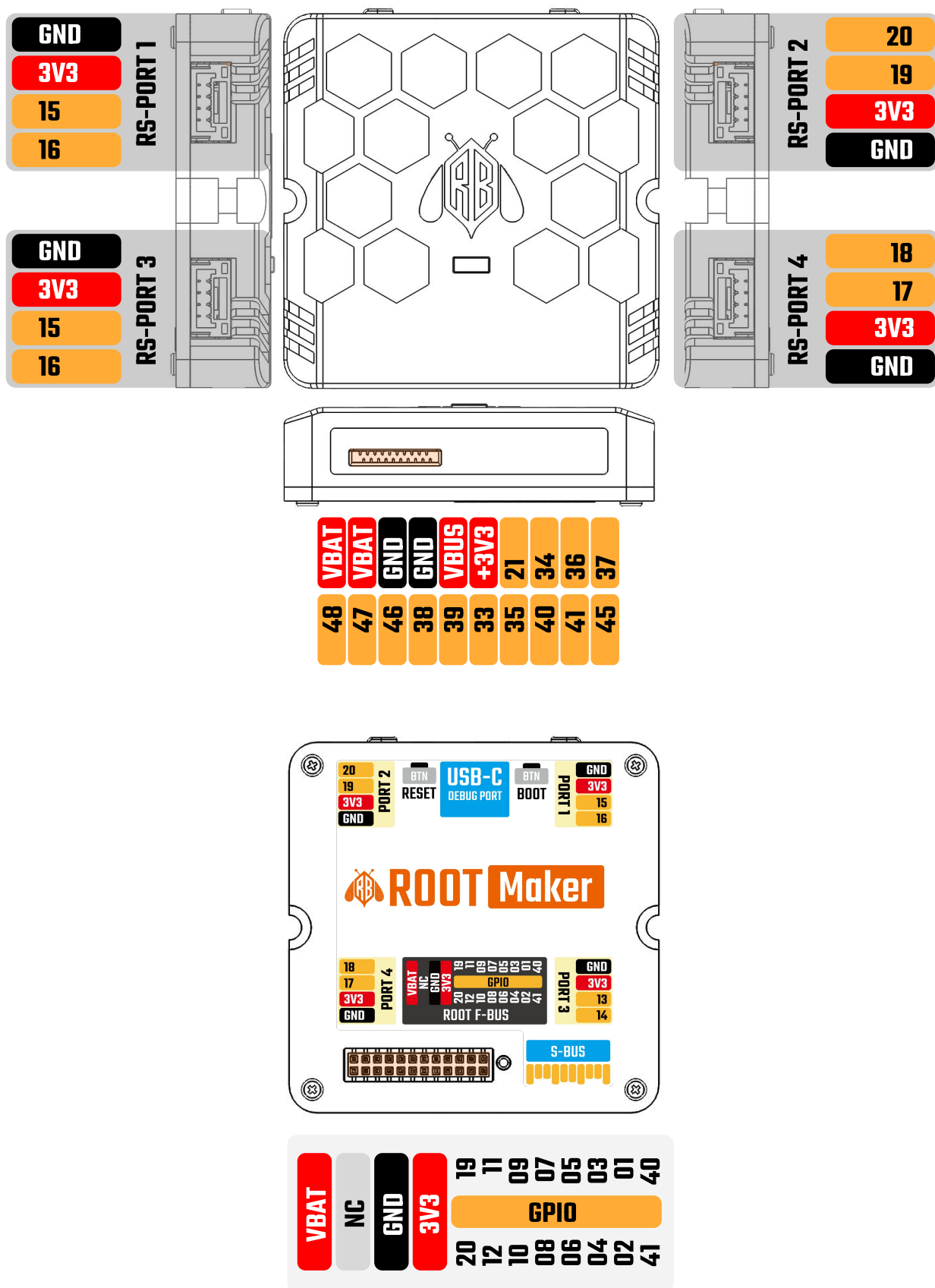


5) 安装完成

技术参数

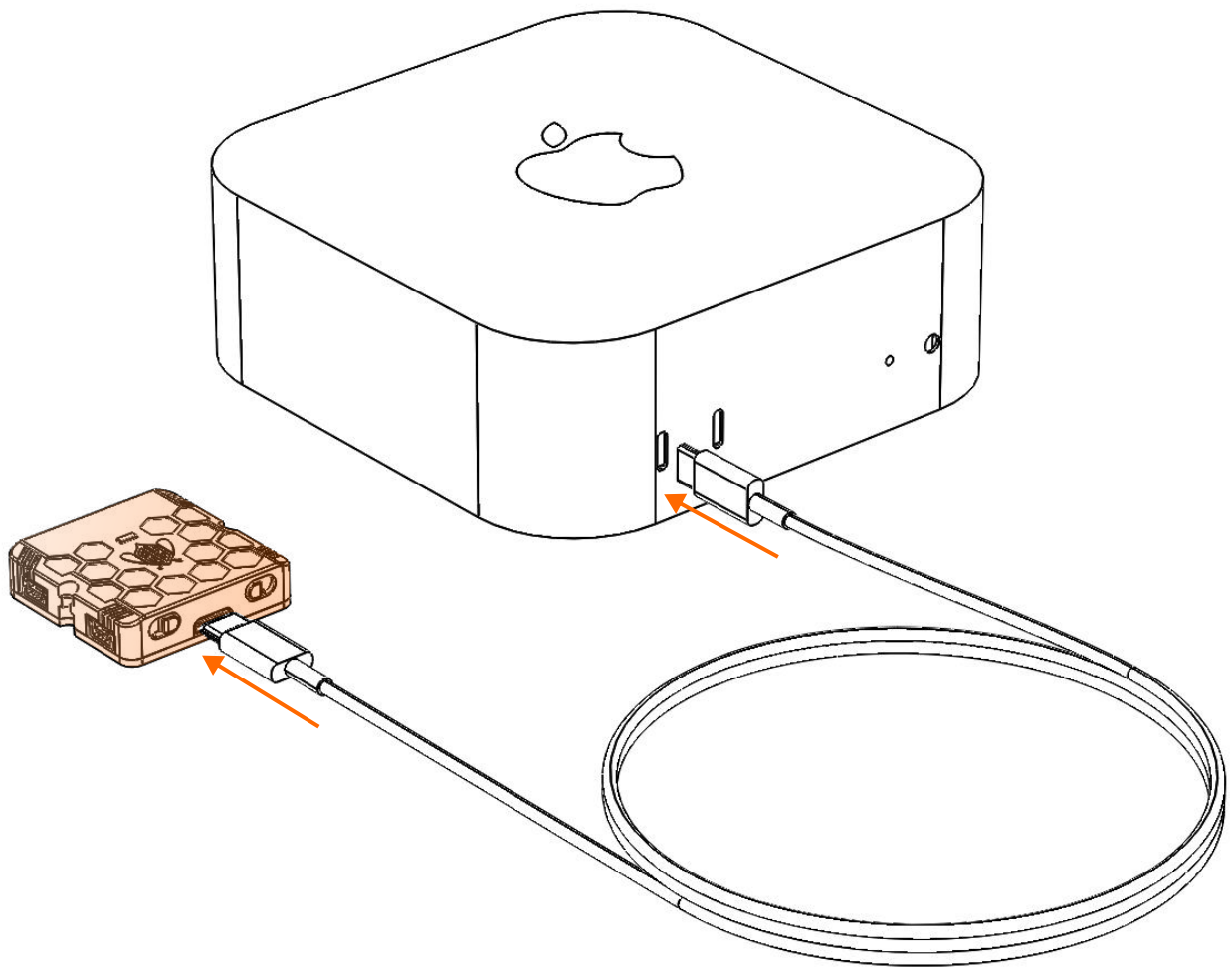
产品名称	RootMaker
产品型号	ZXROOTEC08
机身尺寸	基础组件：40mm*40mm*10.1mm 屏幕套件：40mm*40mm*15.4mm
无线连接	2.4GHz Wi-Fi / Bluetooth LE
USB 接口	USB-C
USB 功能	供电、固件烧录、串口调试、设备配置
工作电压	5V DC
工作电压	3.3V
推荐供电	5V / 1A 以上
支持开发方式	Arduino、ESP-IDF
主要接口	USB-C、RS-Port / RS-BUS、F-BUS、S-BUS
适用人群	Maker、3D 打印创作者、开发者、教育用户
工作环境温度*	0°C ~ 40°C
存储环境温度	-20°C ~ 60°C
工作环境湿度	10% ~ 90% RH，无结露
存储环境湿度	5% ~ 95% RH，无结露

注：以上为 RootMaker 整机推荐使用环境。但整机实际使用温度还会受到外壳、屏幕、电源、电池、LED、电机负载及散热条件影响



注：机身背部有接口快速查询贴纸，您可以在设备使用过程中快速查看。

从Zoner平台快速开始



- 1) 使用USB-C连接线连接RootMaker与您的个人电脑。
- 2) 使用浏览器访问以下链接打开zoner工具平台。



zoner.ryzobee.com

您可以在这里浏览 RootMaker 项目，下载固件、装配指南、物料清单和 3D 打印文件，并快速复刻官方或社区创作者发布的互动作品。

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Categories

Desk Ambient Backlight

RootMaker

Difficulty

☆☆☆☆☆

Arduino

Mount an RGB strip behind your monitor or wall and let Root Maker drive brightness and animations (breathing, rainbow, gradient). With a 3D-printed light channel or diffuser, your desk instantly looks like a custom-made studio.

Hades2025-11-12

Flash to Device

Odradek Scanner

RootMaker

Difficulty

★★★★★

ESP-IDF

A 3D-printed Odradek Scanner project inspired by the iconic in-game device. It combines movable mechanical parts, lighting effects, and open-source design to bring a game prop into the real world.

Hades

Flash to Device

Minecraft Ore Lamp

RootMaker

Difficulty

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Arduino

This demo uses a RootMaker-S3 board and a single RGBW LED to recreate Minecraft-style ore lighting. Once connected to Wi-Fi, you can control it from your browser: switch between Diamond/Redstone/Iron/Gold presets or use RGBW sliders for custom colors ...

Hades

Flash to Device

Ryzobee robot

RootMaker

Difficulty

★★★★☆

ESP-IDF

Ryzobee Desk Buddy is a small desktop robot powered by RootMaker. It uses two servos for head movement, a 1.54-inch face screen for expressive reactions, and voice commands for wake-up and simple smart-home control.

Hades

Flash to Device

LED controller for SK6812

RootMaker

Difficulty

☆☆☆☆☆

Arduino

A RootMaker-based ESP32-S3 (ESP-IDF v5.3) LED controller for SK6812 RGBW strips. It runs as a Wi-Fi SoftAP (RootMaker_House / 12345678) with an embedded web UI for real-time preset selection, brightness control, and smooth synchronized fade on/off.

Hades

Flash to Device

simulate a gasoline engine's

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Difficulty

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Arduino

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Hades

Flash to Device

Root Maker

Connect

Flash 16MB--MB/--MB

RAM--KB/--KB

PSRAM--MB/--MB

CPU--%

UnknownIP:

Device configuration

Send

Wi-Fi SSIDOnly 2.4GHz

Wi-Fi PWD

Custom DateCustom TypeCustom Value

Custom TypeCustom Value

Custom TypeCustom Value

TerminalClean

Please select a project to Flash

3) 确保设备与PC连接无误后，点击Connect按钮连接设备。

zoner.ryzobee.com 想连接到串行端口

USB Single Serial (cu.usbmodem5B415543361)

USB Single Serial (cu.wchusbserial5B415543361)

取消

连接

Store

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RootMaker

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Wi-Fi PWD

Custom DateCustom TypeCustom Value

Custom TypeCustom Value

Custom TypeCustom Value

TerminalClean

Please select a project to Flash

4) 在浏览器弹出的窗口中选择需要连接的串行端口。

从Zoner平台快速开始



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Desk Ambient Backlight

RootMakerDifficulty☆☆☆☆☆Arduino

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Flash to Device

Root Maker

Disconnect

Flash 16MB8.5MB/16MB

RAM102KB/308KB

PSRAM1.4MB/2MB

CPU10%

88:88:88:88:88:88Connecting...IP: 192.168.128.128

Device configurationSend

Wi-Fi SSIDOnly 2.4GHz

Wi-Fi PWDD

Custom DateCustom TypeCustom ValueCustom TypeCustom ValueCustom TypeCustom Value

TerminalClean

> Reading ESP32-S3 (0FN56) (revision v0.2) information...

> Auto-detected Flash size: 16MB

> Flash usage: 1.06MB

> Restarting device, exiting Bootloader...

> Hard resetting via RTS pin...

> Bootloader session finished, waiting for device to stabilize...

> Entering firmware communication mode...

> Serial port opened (115200)

> Data reader started

> Firmware communication is ready

Flash this project to Device

5) 点击选择需要下载的项目模板，点击“Flash to Device”图标或点击项目标签进入项目详情页。



HomeProductWebtoolsStore

Search

Scan



Desk Ambient Backlight

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Hades2025-11-12

Flash to Device



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Flash to Device

Root Maker

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Flash 16MB8.5MB/16MB

RAM102KB/308KB

PSRAM1.4MB/2MB

CPU10%

88:88:88:88:88:88Connecting...IP: 192.168.128.128

Device configurationSend

Wi-Fi SSIDOnly 2.4GHz

Wi-Fi PWDD

Custom DateCustom TypeCustom ValueCustom TypeCustom ValueCustom TypeCustom Value

TerminalClean

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> Hard resetting via RTS pin...

> Bootloader session finished, waiting for device to stabilize...

> Entering firmware communication mode...

> Serial port opened (115200)

> Data reader started

> Firmware communication is ready

Flash this project to Device

5) 点击“Flash this project to Device”图标更新项目固件至设备。

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Desk Ambient Backlight

RootMaker

Difficulty ★☆☆☆☆

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Hades2025-11-12

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Flash to Device



LED controller for SK6812

RootMaker

Difficulty ★☆☆☆☆

Arduino

A RootMaker-based ESP32-S3 (ESP-IDF v5.3) LED controller for SK6812 RGBW strips. It runs as a Wi-Fi SoftAP (RootMaker_House / 12345678) with an embedded web UI for real-time preset selection, brightness control, and smooth synchronized fade on/off.

Hades

Flash to Device



simulate a gasoline engine's

RootMaker

Difficulty ★★☆☆☆

Arduino

his project uses RootMaker (ESP32-S3 + ESP-IDF 5.3) to drive RGBW LEDs (SK6812/WS2812-RGBW) and simulate a gasoline engine's full startup sequence—power-on, fuel priming, preheat, starter engagement, cranking, ignition catch, idle stabilization, and continuous

Flash to Device

Root Maker

Disconnect



Flash 16MB

9.5MB / 16MB

RAM

102KB / 308KB

PSRAM

1.4MB / 2MB

CPU

10%

08-08-08-08-08-08

Connecting...

IP: 192.168.129.129

Device configuration

Send

Wi-Fi SSID

Only 2.4GHz

Wi-Fi PWD

Custom Date

Custom Type

Custom Value

Custom Type

Custom Value

Custom Type

Custom Value

Terminal

Clean

> Data reader started

> Firmware communication is ready

> Device is restarting...

> Data reader stopped

> Device disconnected

> Entering firmware communication mode...

> Serial port opened (115200)

> Data reader started

> Firmware communication is ready

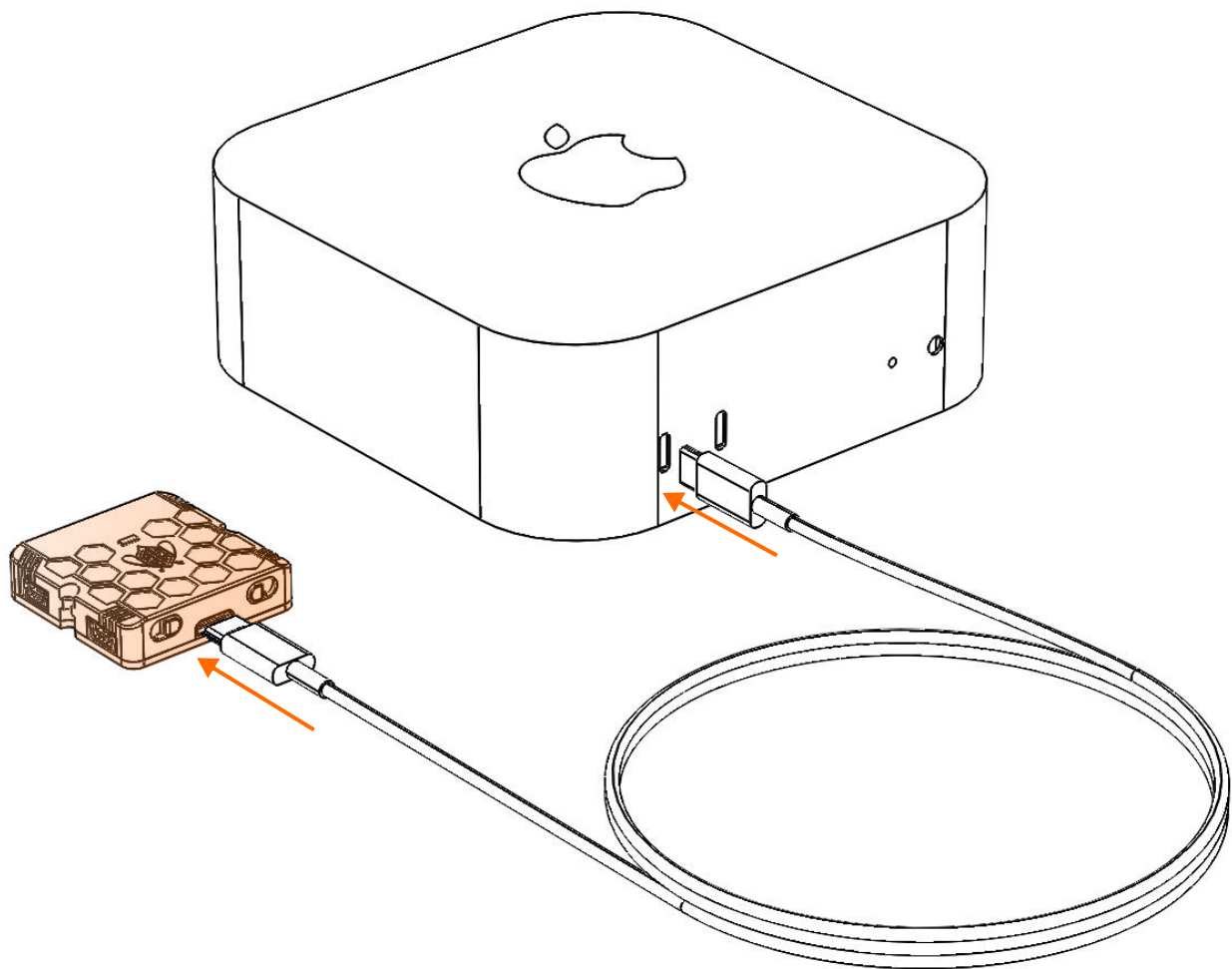
> Device reconnected successfully

> Device restarted successfully

Flash this project to Device

6）等待设备固件更新完成。更新需要10-60秒，更新时间根据项目不同而不同，更新过程请勿移除与设备连接的USB-C线，或按下设备的Reset按钮。

注：更多Zoner平台功能请前往Ryzobee Wiki获取详细说明。



- 1) 使用USB-C连接线连接RootMaker与您的个人电脑。
- 2) 选择Tool→Board→ESP32→RootMaker开发板。
- 3) 在Example→Ryzobee中选择任意例程。
- 4) 在Tool→Port中选择对应的串行端口。
- 4) 点击Upload，等待固件编译并上传至RootMaker。

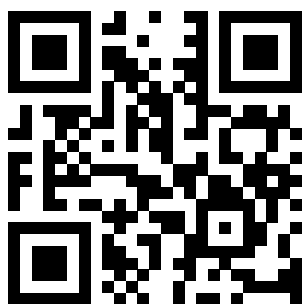
注：Arduino使用教程请前往Arduino官网或Ryzobee Wiki站获取详细说明，如果在Arduino的板管理器中找不到Rootmaker开发板，请更新Arduino版本，或更新板管理器。

技术支持

如果你在使用 RootMaker 过程中遇到问题，请优先按照本指南中的「快速上手」「故障排查」和「使用前须知」进行检查。

如问题仍无法解决，可通过 RyzoBee 官方支持渠道获取帮助。

WIKI支持



WIKI站

您可以在这里获取详细的产品说明与相关文件，学习从入门到进阶的教程。

wiki.ryzobee.com

支持邮箱

您可以发送邮件至我们的支持邮箱获取技术人员支持

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