Multi-Function Controller Core(1PCS)-XA003 User's Manual

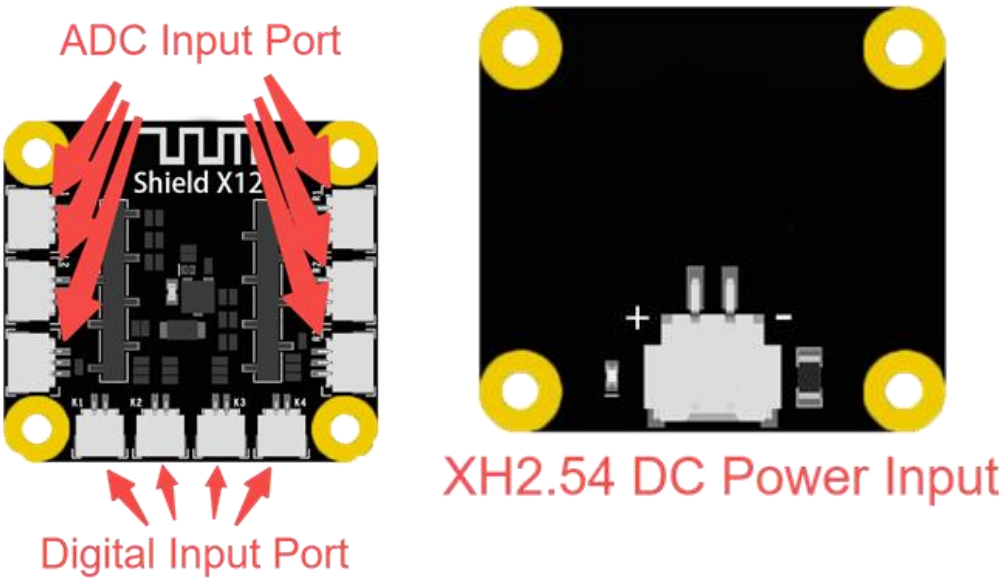
Core-A11

1. Features

- 2.4Ghz wireless remote control, 10m control distance with an ultra-small size.
- High cost-performance ratio, suitable for car, ship and tank models, etc.
- Provide up to 10 channels for connecting different devices.
- Transmitter Input Voltage: 4.5V~12.6V（1S-3S）, operating current: 65mA.
- Receiver Input Voltage: 7.4V-12.6V（2S-3S）, standby current: 60mA, operating current: 200~300mA, maximum current: 3A.
- Support configuration on mobile phones& PCs, with a user-friendly interface.

2. Receiver&Transmitter Shield

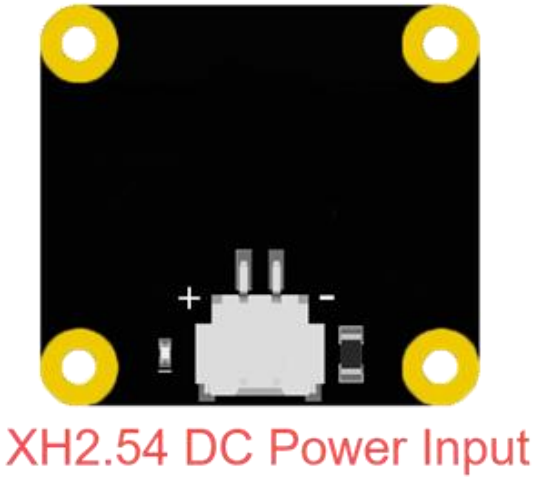
Remote Control Transmitter Shield

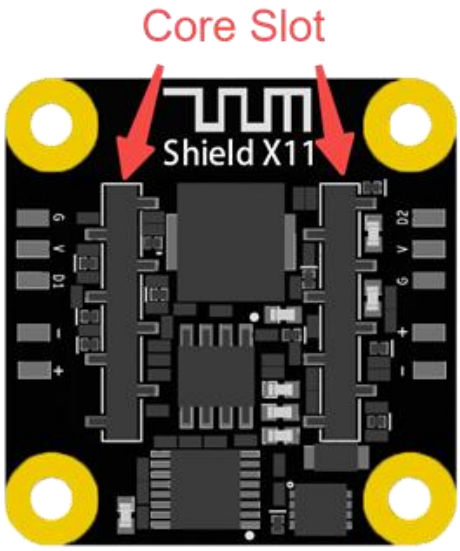


On the left and right sides of the transmitter shield, there are respectively 3 ADC input channels. Below it, there are 4 digital input channels. The gray slot on the back is the slot for the multi-function controller core. It can be powered through the XH2.54 power input.

- **ADC input port L1~L3，R1~L3**: 3pin SH1.0 slot. Connectable with single/dual axis joystick module, three-position rocker switch module, etc.
- **Digital input Port K1~K4**: 2pin SH1.0 slot. Connectable with momentary button module, etc.
- **XH2.54 DC power input**: 2pin XH2.54slot. Connectable with **4.5V~12.6V** power supply.

Remote Control Receiver Shield





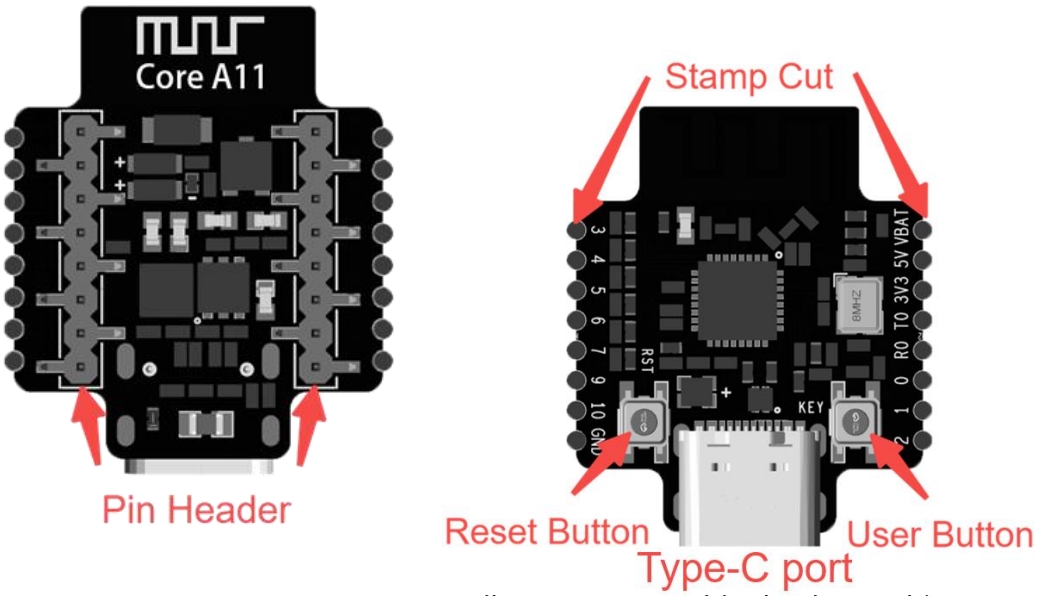
On the left and right sides of the receiver shield, there is respectively a DC motor port and a WS2812 port. In the center, there are 4 servo ports. It can be powered through the XH2.54 power input.

- **DC Motor Port M1、M2**: 2pin SH1.0 slot. Connectable with DC motor, supporting forward and reverse rotation control& PWM speed regulation.
- **WS2812 Port D1、D2**: 3pin SH1.0slot. Connectable with WS2812 LED hubs or other light strips that use the WS2812 protocol.
- **Servo Port S1~S4**: 3pin header. Connectable with universal 5V servo motors.
- **Core Slot**: A double-row gray slot. Connectable with multi-function controller

core.

- **XH2.54 Power Input**: 2pin XH2.54 slot. Connectable with **7.4V~12.6V** power supply.

Multi-Function Controller Core

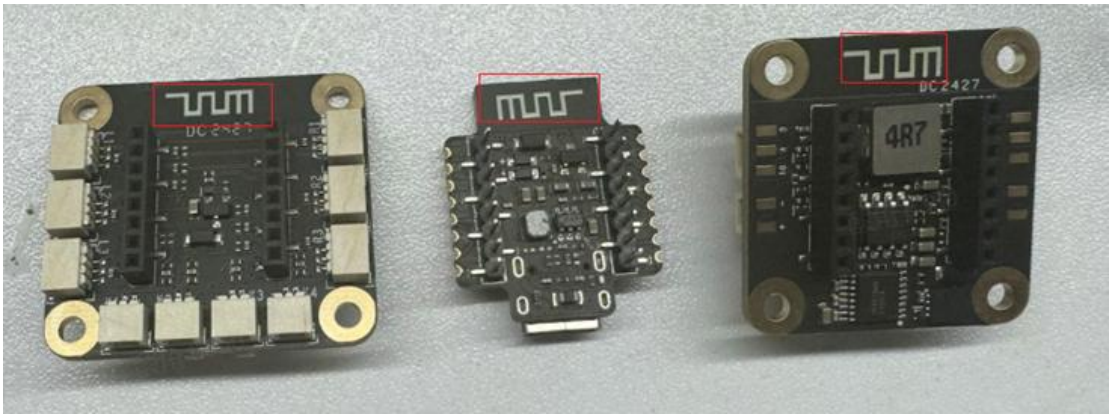


- **Stamp Cut:** Solderable Pinout. It allows users to solder leads to achieve customized circuit connections.
- **Reset Button**: Press to reset main program.
- **User Button**: Custom Function.
- **Type-C Port**: Type-C Port. Connect to the PC via a data cable for programming and burning the program.
- **Pin Header**: Pin Header. Connectable with Shield.

Hardware connection between controller core and remote control transmitter/receiver shield

As shown in the figure, the controller core, the remote control receiver shield, and the remote control transmitter shield have antenna symbols. When making the connection, it is necessary to ensure that the orientations of these three symbols are the same and the pins correspond to each other one by one.

Orientations of these three symbols are the same.



Pins correspond to each other one by one.

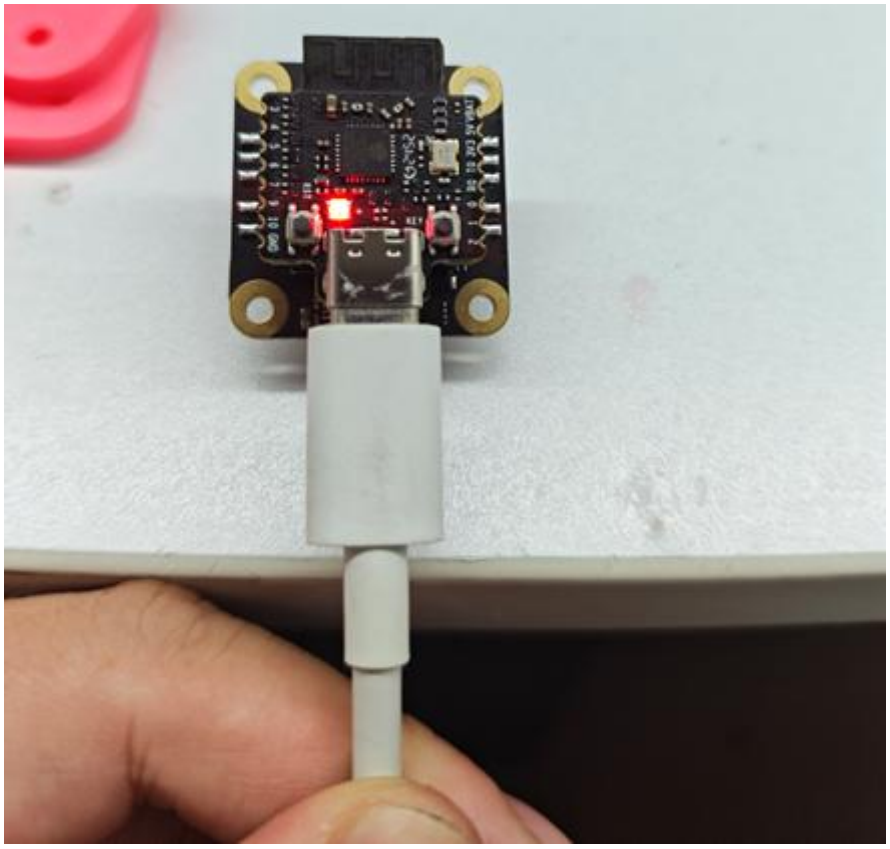
Definition of the System Status Indicator

- Powered on but not connected: green light on
- Bluetooth connected: blue light on
- 2.4Ghz connected： yellow light on

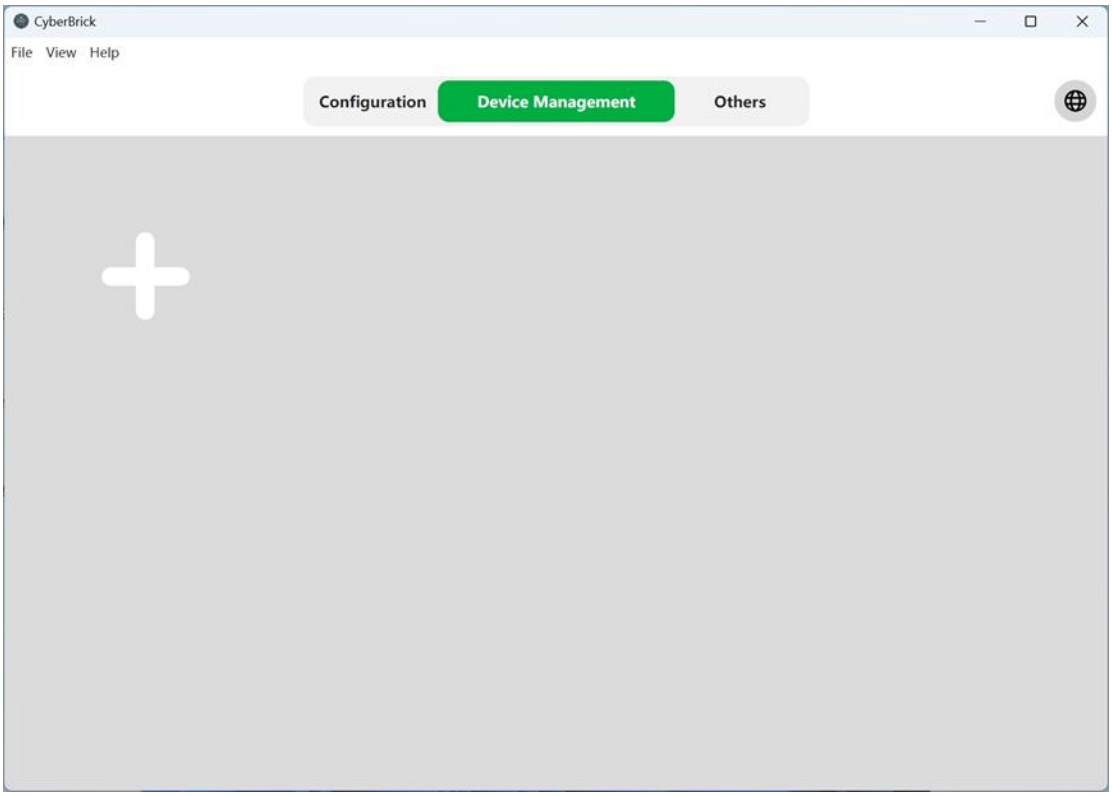
- Bluetooth& 2.4Ghz connected：light flashes alternately between blue and yellow
- Profile upgrading: green light flashes at a frequency of 2Hz and continues until the transmission ends.
- Control object recognition: The green light flashes at a frequency of 1 Hz for 5 seconds.

Connect to the RC Transmitter& Receiver on the PC client.

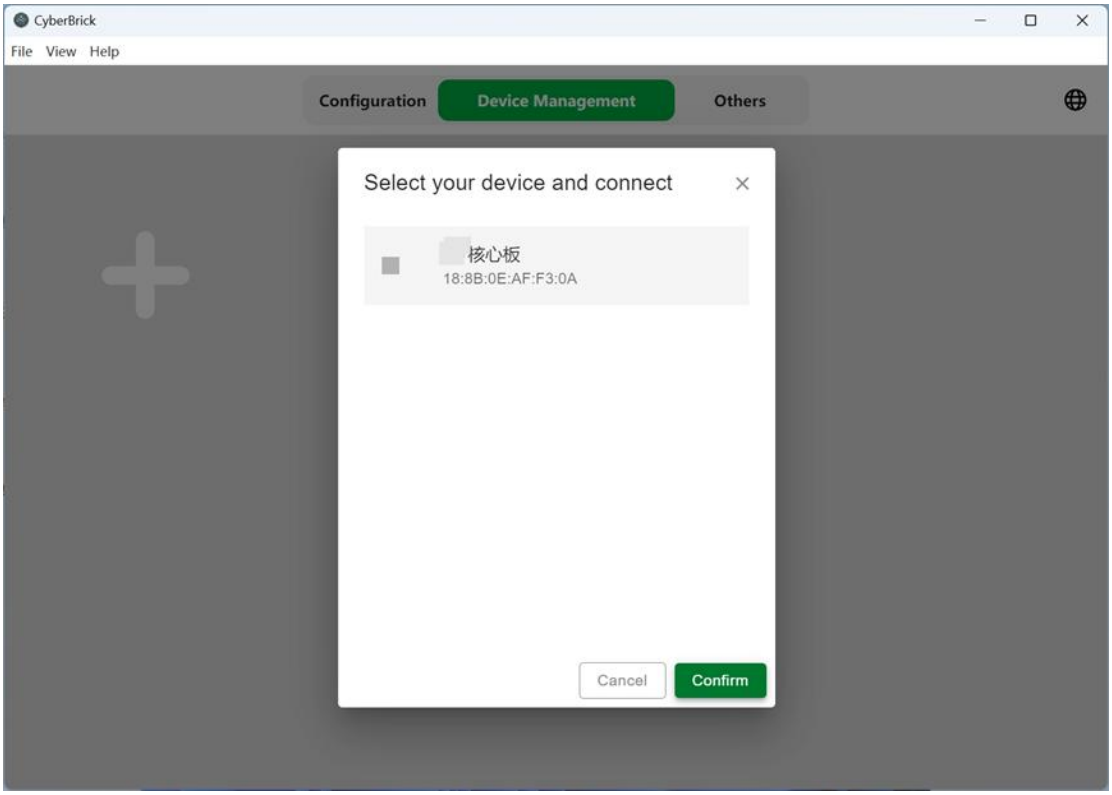
Power the controller core through the Type-C port or the XH2.54 Power Port on the expansion shield.



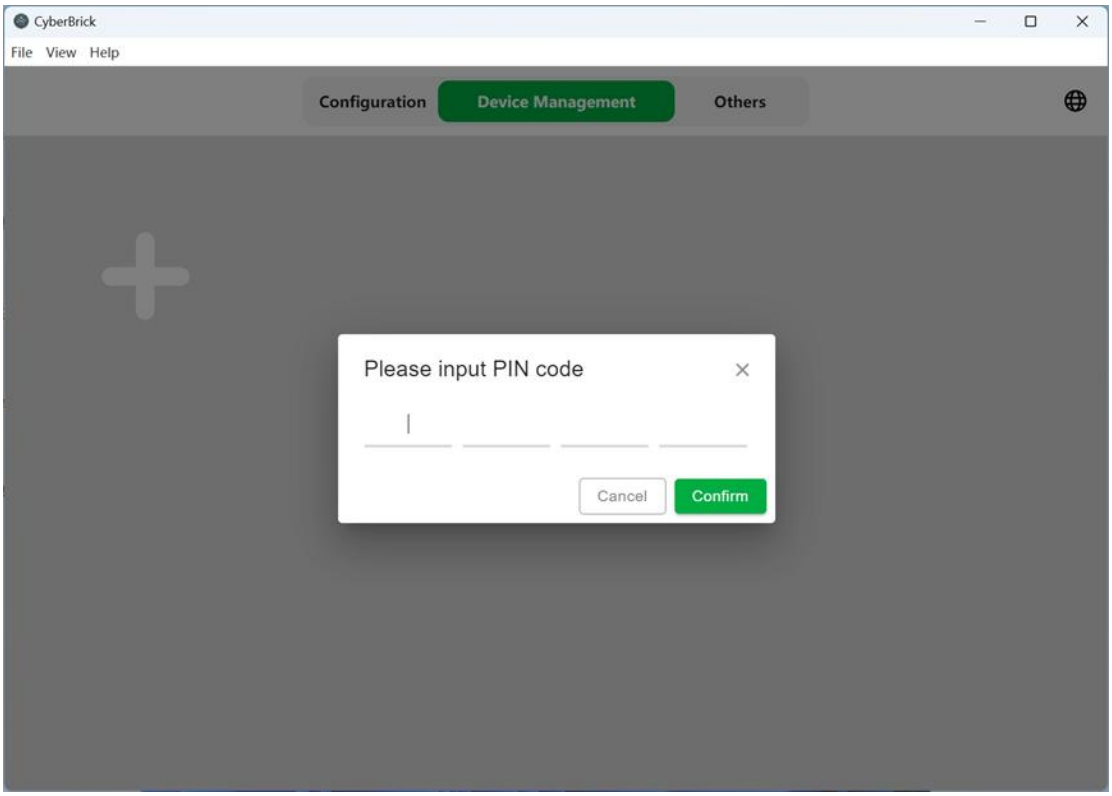
Run CyberBrick client, switch to Device Management



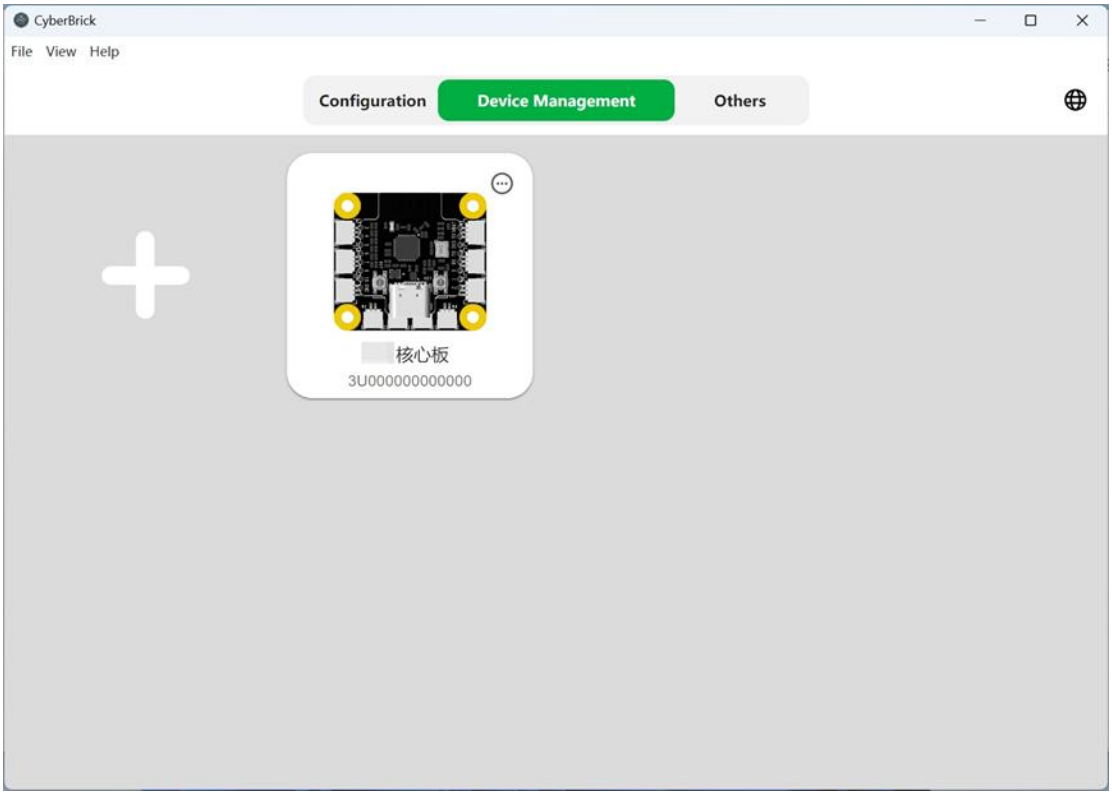
Click [+] to find your device



Connect the device by entering the PIN code. If the PIN hasn't been set during the first connection, confirm directly.

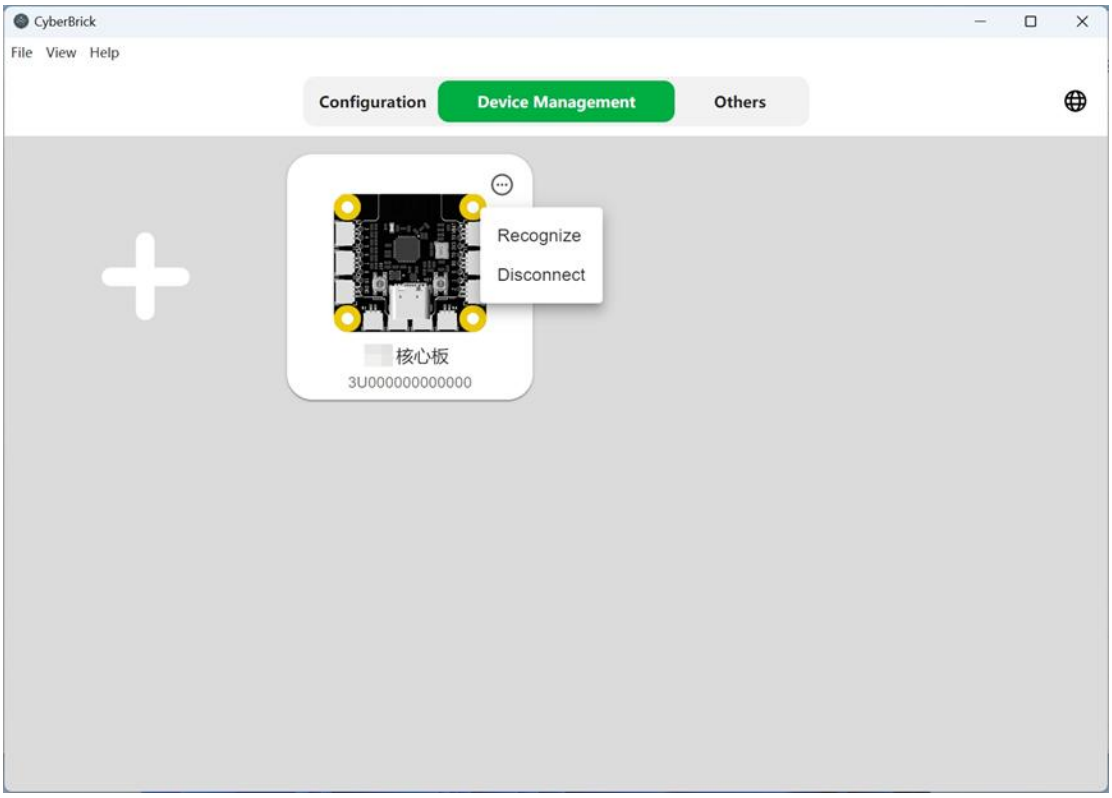


After successful connection, the indicator of controller core lights blue, and the client displays this device.

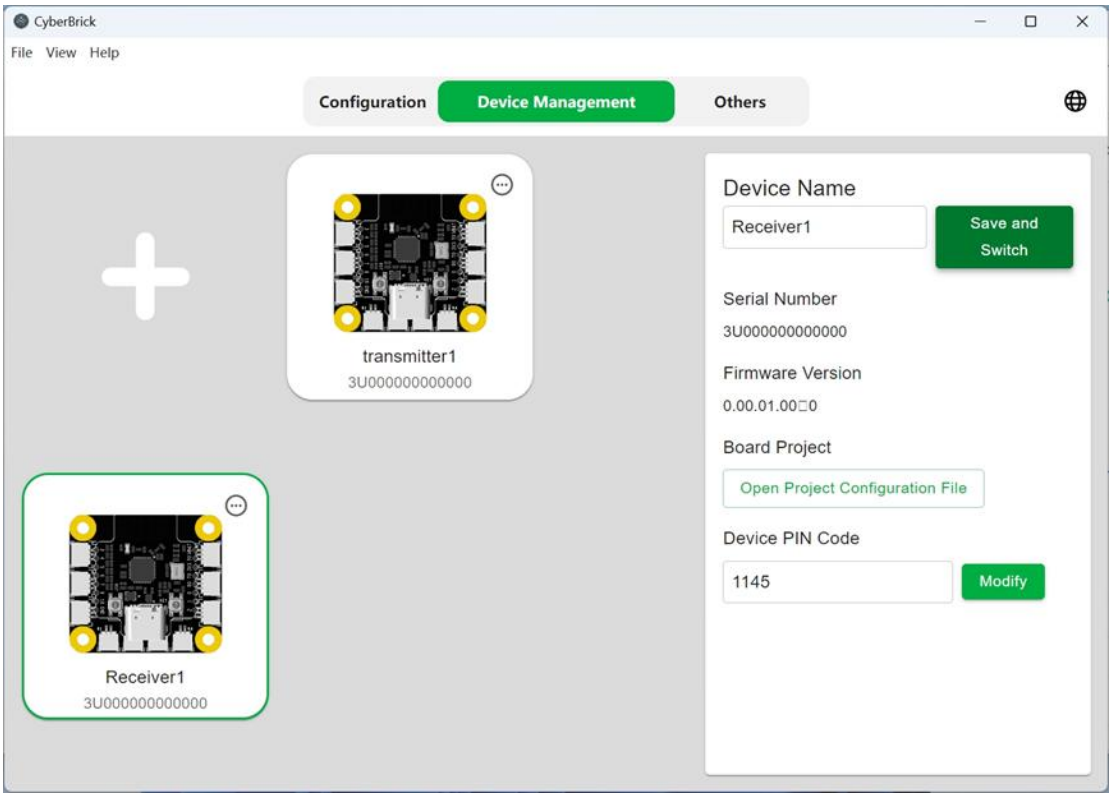


Click on the expansion symbol in the upper right corner of the device. If you have connected multiple devices, click on Recognize, the status indicator of the selected

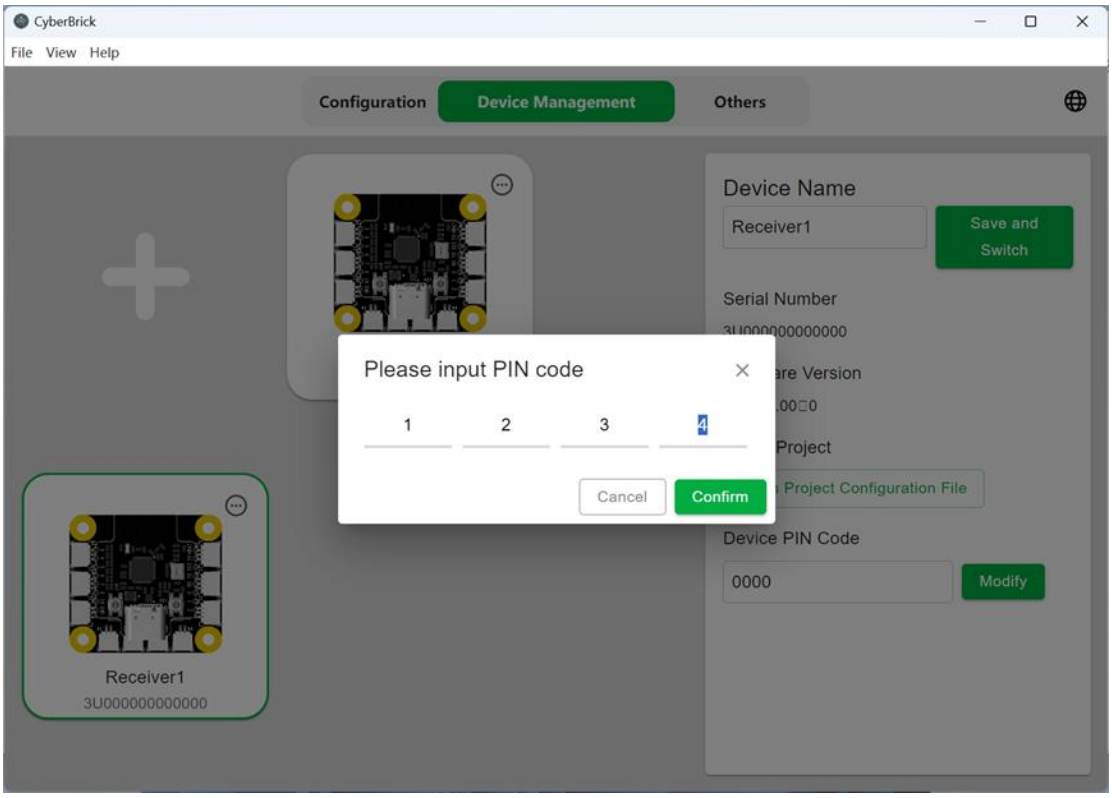
device will flash green; if you need to disconnect with the selected device, click on Disconnect.



Click on the device, you can change the name of the device in the upper right corner to make it easier to identify it when there are multiple devices.

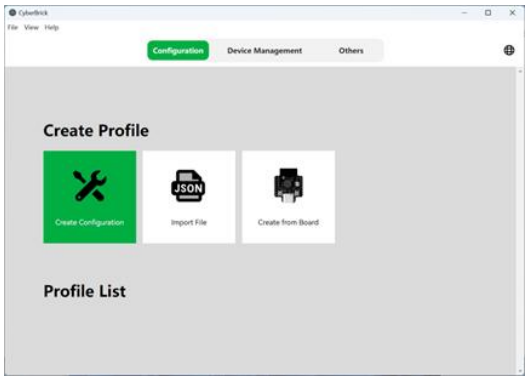


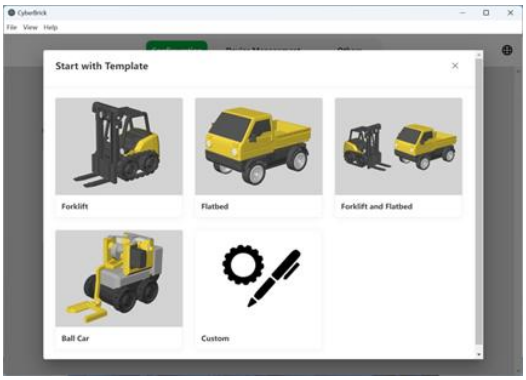
If you need to change the Pin code of the device, you can click Modify in the lower right corner and enter the new Pin code.



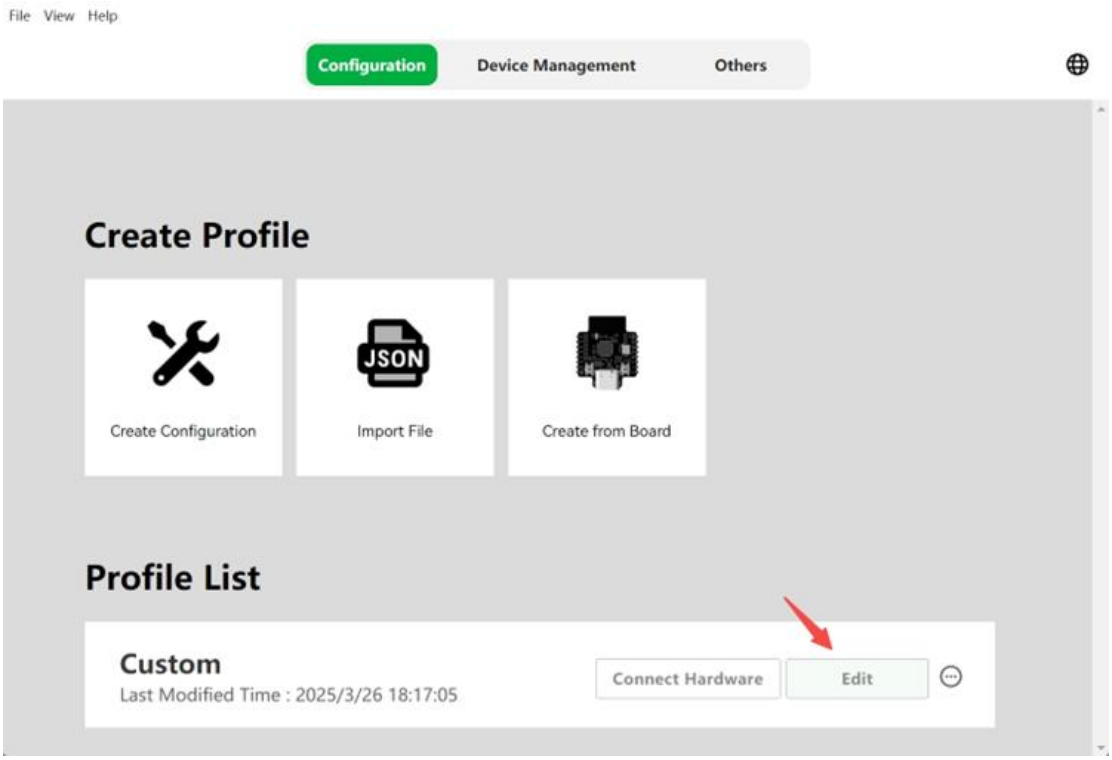
Configure the core controller profile

Click on the Configuration, click on Create Configuration, and start with a template, or an empty configuration[Custom].

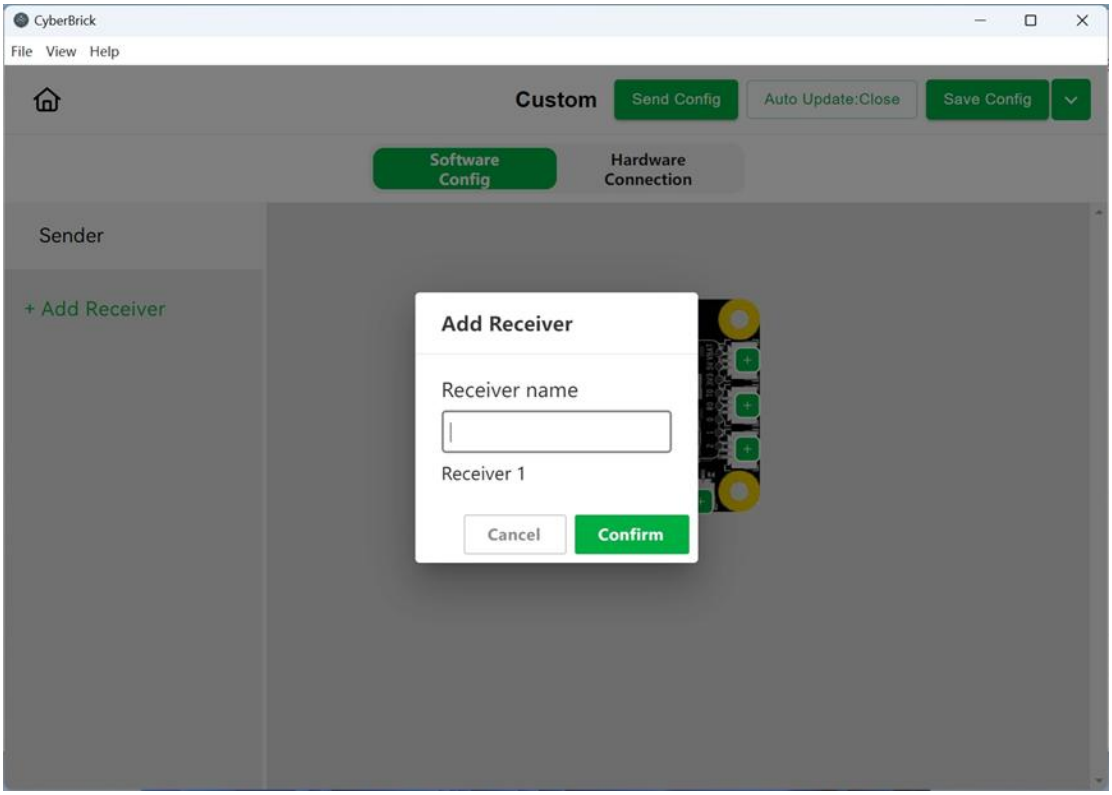




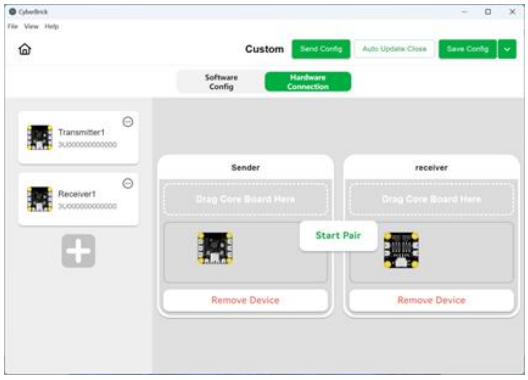
Here we take the custom empty configuration as an example, click on Custom and then click on Edit in the configuration list below.

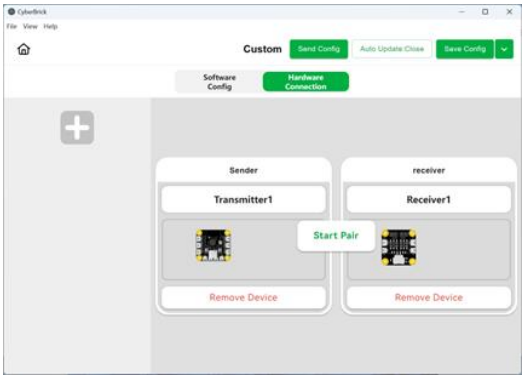


After entering the configuration interface, first, click Add Receiver on the left side, and input the name of the receiver.

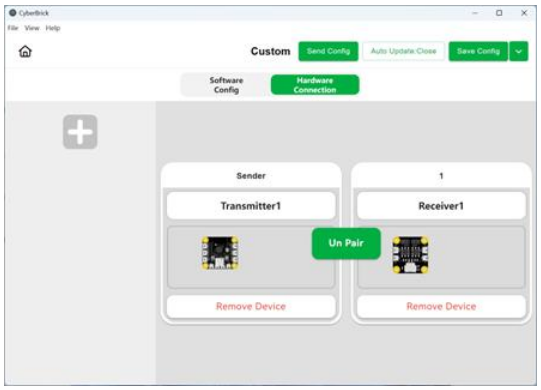


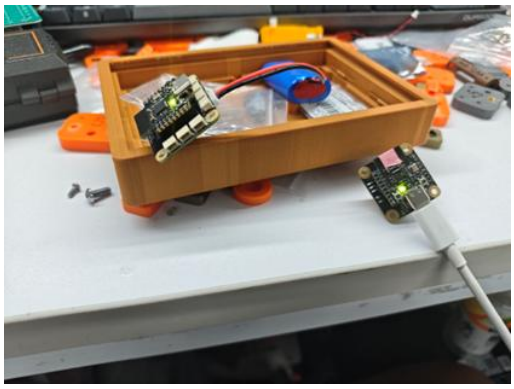
Click on the hardware connection above and drag the receiver device and controller device to the corresponding position.





Click to start pairing. After pairing successfully, the status indicators of these devices should flash blue and yellow alternately.





After modifying the configuration, remember to save the configuration locally with Save Config in the upper right corner, and update the configuration to the device with Send Config.

List of applicable FCC rules
FCC Part 15.247

Label and compliance information
FCC ID label on the final system must be labeled with "Contains FCC ID: 2A6J8-COREA11" or "Contains transmitter module FCC ID: 2A6J8-COREA11".

Information on test modes and additional testing requirements
Contact Shenzhen Tuozhu Technology Co., Ltd. will provide stand-alone modular transmitter test mode. Additional testing and certification may be necessary when multiple modules are used in a host.

Additional testing, Part 15 Subpart B disclaimer
To ensure compliance with all non-transmitter functions the host manufacturer is responsible for ensuring compliance with the module(s) installed and fully operational. For example, if a host was previously authorized as an unintentional radiator under the Supplier's Declaration of Conformity procedure without a transmitter certified module and a module is added, the host manufacturer is responsible for ensuring that the after the module is installed and operational the host continues to be compliant with the Part 15B unintentional radiator requirements. Since this may depend on the details of how the module is integrated with the host, Shenzhen Tuozhu Technology Co., Ltd. shall provide guidance to the host manufacturer for compliance with the Part 15B requirements.

FCC Warning
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE 1: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance.

Note 1: This module certified that complies with RF exposure requirement under mobile or fixed condition, this module is to be installed only in mobile or fixed applications.

A mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. Transmitting devices designed to be used by consumers or workers that can be easily re-located, such as wireless devices associated with a personal computer, are considered to be mobile devices if they meet the 20 centimeter separation requirement.

A fixed device is defined as a device is physically secured at one location and is not able to be easily moved to another location.

Note 2: Any modifications made to the module will void the Grant of Certification, this module is limited to OEM installation only and must not be sold to end-users, end-user has no manual instructions to remove or install the device, only software or operating procedure shall be placed in the end-user operating manual of final products.

Note 3: The module may be operated only with the antenna with which it is authorized. Any antenna that is of the same type and of equal or less directional gain as an antenna that is authorized with the intentional radiator may be marketed with, and used with, that intentional radiator.

Note 4: For all products market in US, OEM has to limit the operation channels in CH1 to CH11 for 2.4G band by supplied firmware programming tool. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.

IC WARNING

This device contains licence-exempt transmitter(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:
(1) This device may not cause interference.
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

IC Radiation Exposure Statement:

This device and its antenna(s) must not be co-located with any other transmitters except in accordance with IC multi-transmitter product procedures. Referring to the multi-transmitter policy, multiple-transmitter(s) and module(s) can be operated simultaneously without reassessment permissive change.

Cet appareil et son antenne (s) ne doit pas être co-localisés ou fonctionnement en association avec une autre antenne ou transmetteur.

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

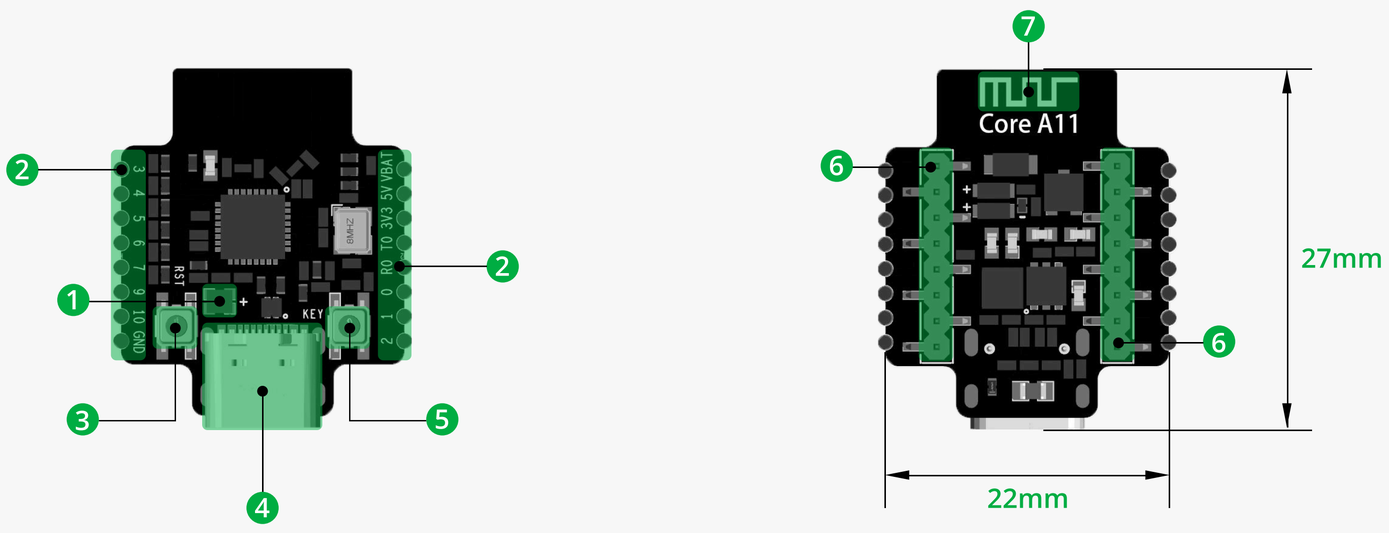
Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20cm de distance entre la source de rayonnement et votre corps.

This module is limited to OEM installation only and must not be sold to end-users, end-user has no manual instructions to remove or install the device, only software or operating procedure shall be placed in the end-user operating manual of final products. Additional testing and certification may be necessary when multiple modules are used.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

The final end product must be labeled in a visible area with the following " Contains IC: 28436-COREA11 ".

Multi-Function Controller Core

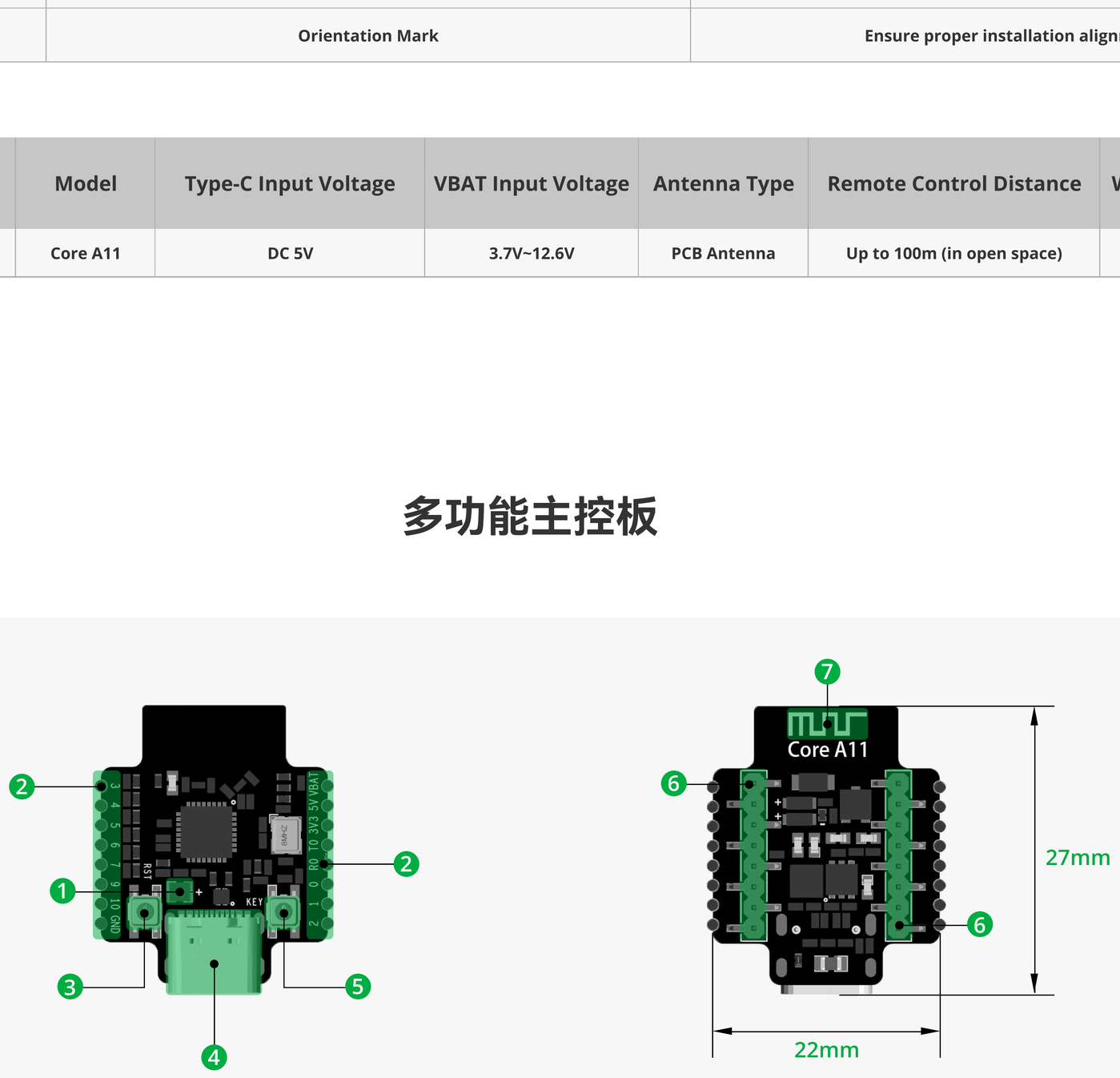


Product Specifications

Item Number	Component	Function
1	WS2812LED	RGB system status indicator
2	Stamp Cut	Solderable pinout
3	Reset Button	Press to reset the main program
4	Type-C Port	Burning firmware & programming
5	User Button	Custom function
6	Pin Header	Connectable with various shield
7	Orientation Mark	Ensure proper installation alignment

Product ID	Model	Type-C Input Voltage	VBAT Input Voltage	Antenna Type	Remote Control Distance	Weight	Size
XA003	Core A11	DC 5V	3.7V~12.6V	PCB Antenna	Up to 100m (in open space)	6g	27*22mm

多功能主控板



产品参数

部件编号	部件名称	部件功能
1	WS2812灯	RGB系统状态指示灯
2	邮票口	可以焊接引出引脚
3	复位按键	用来复位主控程序
4	Type-C 接口	用于固件烧录和编程
5	用户按键	用于扩展新功能
6	排针引脚	用于连接至扩展板
7	方向标识	确保安装方向无误

产品ID	型号	Type-C 输入电压	电池电压	天线类型	通讯距离	重量	尺寸
XA003	Core A11	DC 5V	3.7V~12.6V	PCB天线	最远100m（空旷场景下）	6g	27*22mm