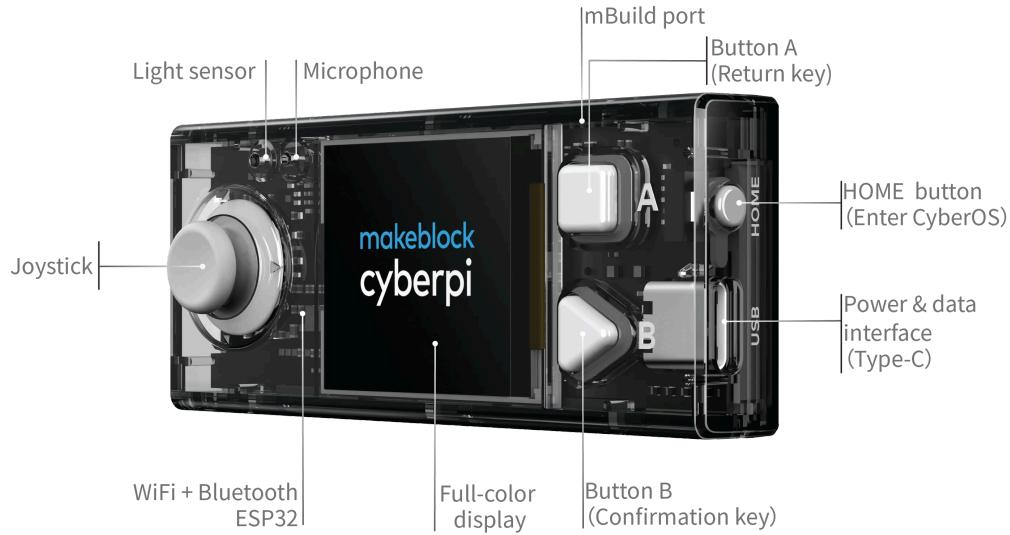


Electronic Characteristics

Main control board

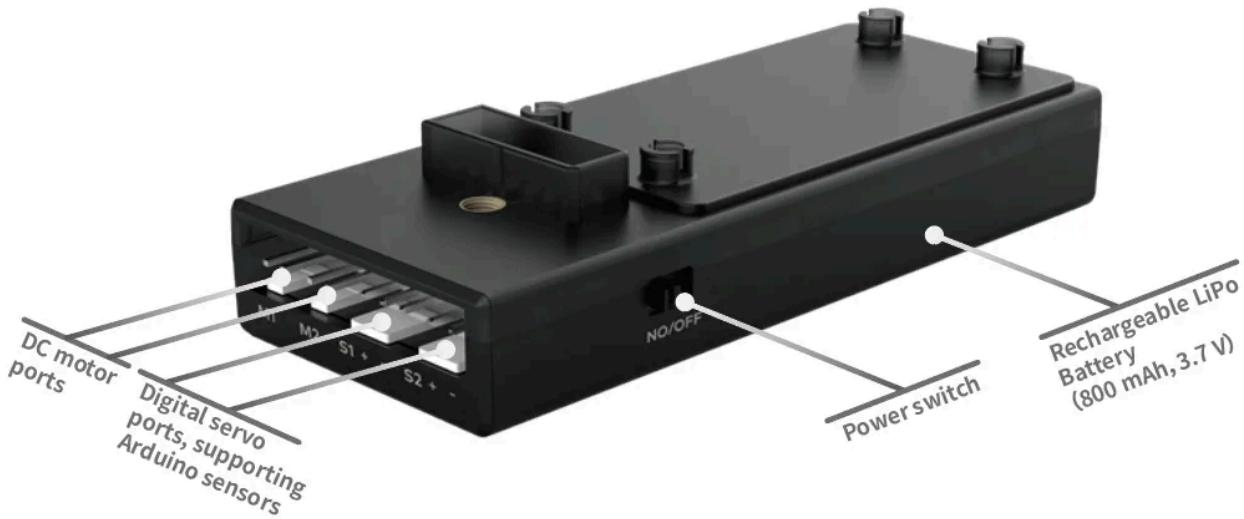
CyberPi



Extension boards

CyberPi can work with multiple extension boards to meet diversified education needs.

Pocket Shield



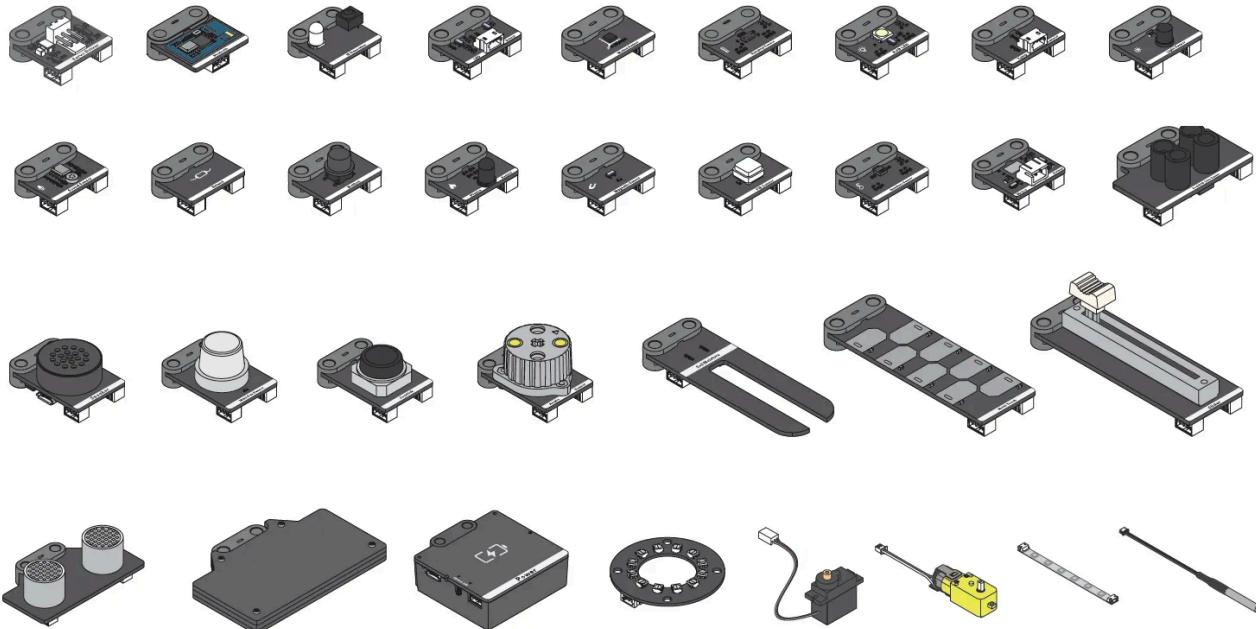
For more information about Pocket Shield, see [Pocket Shield](#) <https://www.yuque.com/makeblock-help-center-en/cyberpi/pocket-shield>.

More extension boards are being developed. Stay tuned!

Electronic modules

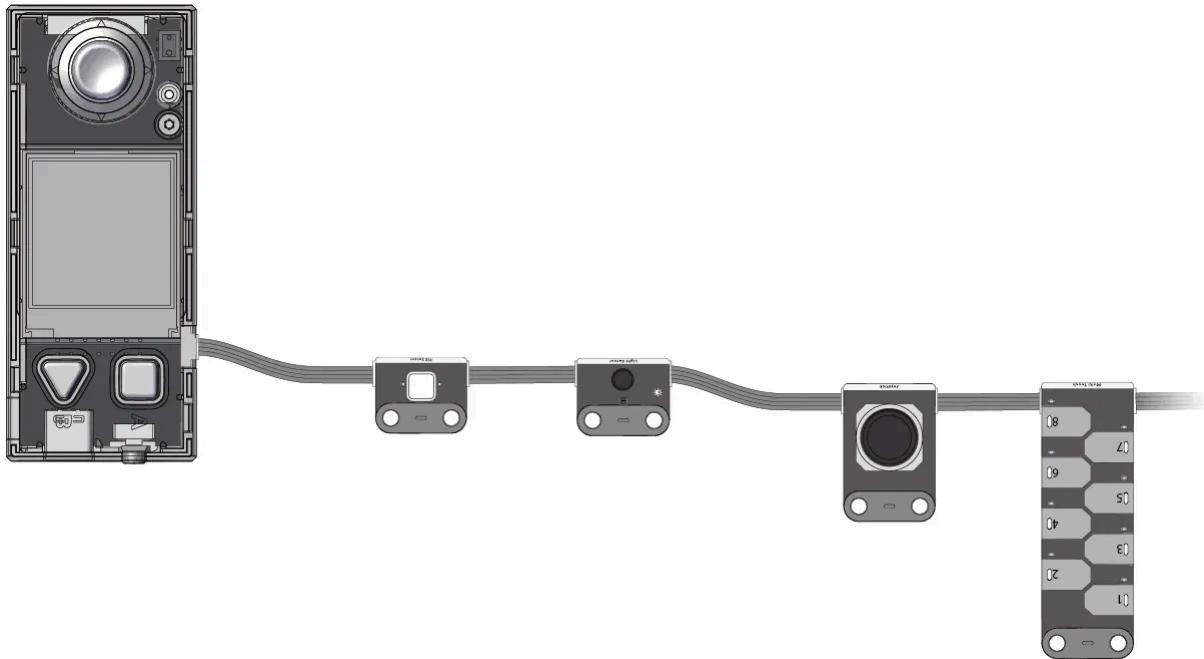
In addition to the mBuild electronic modules, the CyberPi series supports third-party electronic components and parts, for example, Arduino modules.

mBuild electronic modules



Currently, over 30 mBuild electronic modules have been developed, and more modules will be available.

Each mBuild module is equipped with a micro-processing chip, which enables multiple modules to connect to one port in series, as shown in the following figure.

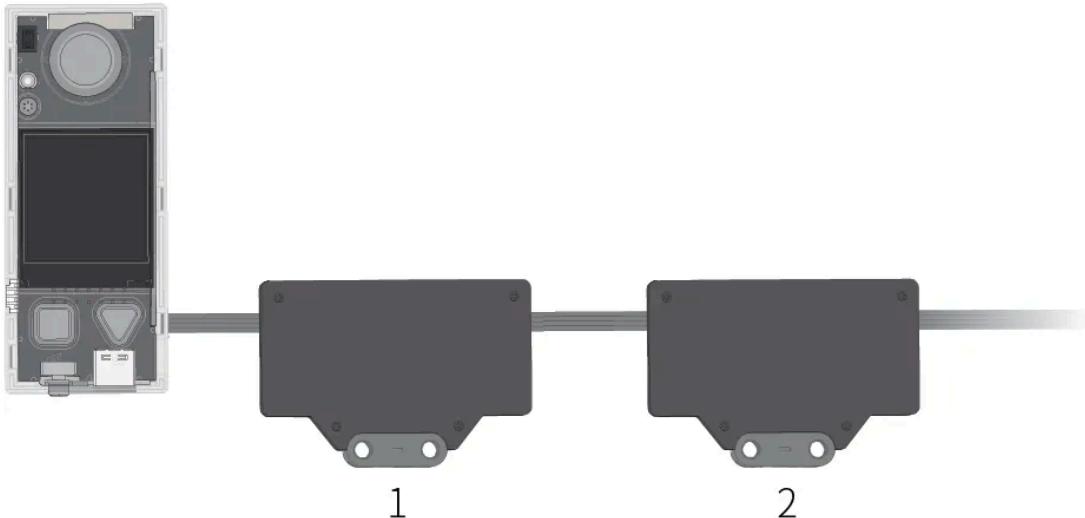


In addition, mBlock 5 can intelligently identify the address of the modules, which simplifies your programming. You don't have to set the information about the address of the modules in programming environment when you add or remove a module.

Intelligent address identification

Example:

Connect CyberPi to multiple LED matrixes

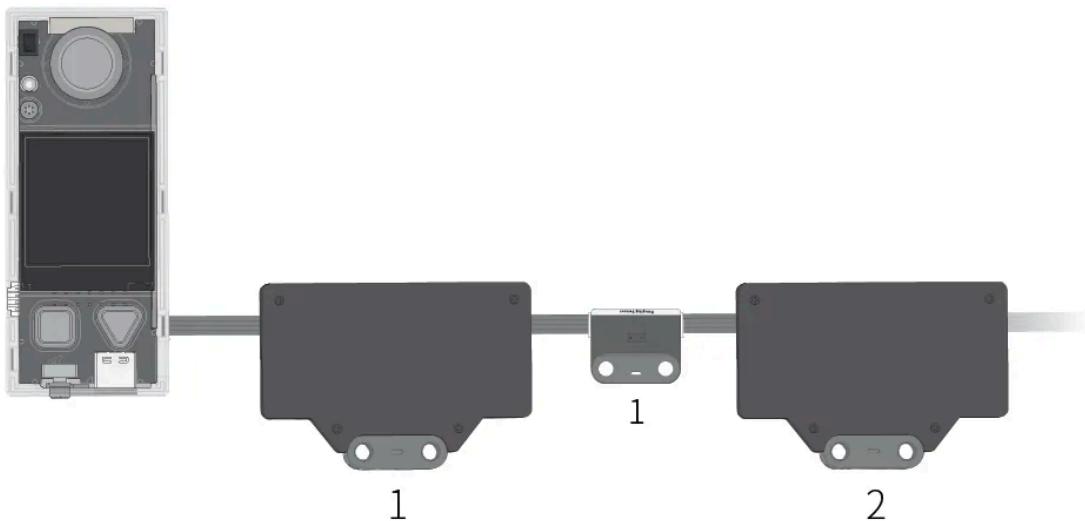


After connecting CyberPi to multiple LED matrixes, you need only to specify the place of an LED matrix among the ones connected instead of specifying the port to which the LED matrix is connected when compiling a program. As shown in the preceding figure, the first LED matrix connected to CyberPi is numbered 1, the second one numbered 2, and so on.



When you press button A on CyberPi, the first LED matrix displays "Hello," and the second one displays "World."

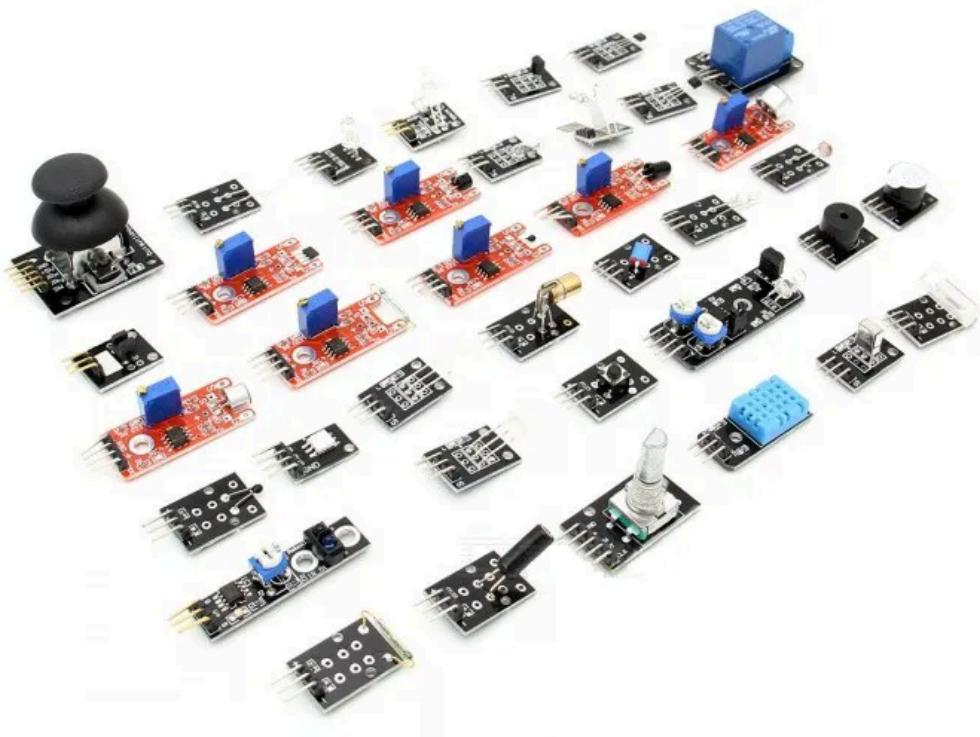
Change the positions of the modules, as shown in the following figure.



The preceding program still works after you add a ranging sensor. When you press button A on CyberPi, the first LED matrix displays "Hello," and the second one displays "World."

For more information, see [mBuild Electronic Modules <http://docs.makeblock.com/diy-platform/en/mbuild.html>](http://docs.makeblock.com/diy-platform/en/mbuild.html).

Third-party sensors



(Source: [Internet](#)

[webpage <https://www.matiot.com/arduino-sensors-37-in-1-set>](https://www.matiot.com/arduino-sensors-37-in-1-set))

The CyberPi series is compatible with multiple third-party sensors. You can read [Open-source Materials <https://www.yuque.com/makeblock-help-center-en/cyberpi/open-source>](#) to understand how CyberPi series products are connected to third-party electronic components or parts.

Motors

Working in combination with the corresponding electronic modules or extension boards, CyberPi can drive multiple types of motors. The following table describes the motors supported by CyberPi.

Supporting	Through mBuild modules	Through Pocket Shield	Through mBot2 Shield	Th C exte
5V TT motor	Yes	Yes	Yes	
5V 9g servo	Yes	Yes	Yes	
6–12V smart servo	Yes	Yes	Yes	
12V encoder motor				Yes
Brushless motor				
Stepper motor				

Other accessories

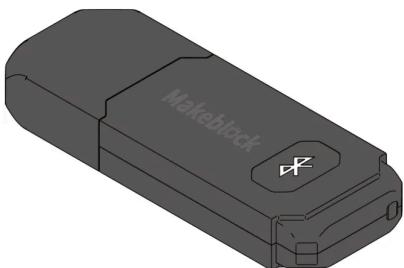
Bluetooth Controller



CyberPi series products can connect to Makeblock Bluetooth Controller to use it as a remote control.

For more information about Makeblock Bluetooth Controller, see [Bluetooth Controller Online Help <https://www.yuque.com/makeblock-help-center-en/bluetooth-controller>](https://www.yuque.com/makeblock-help-center-en/bluetooth-controller).

Bluetooth Dongle

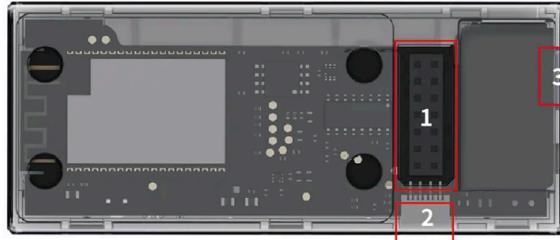


CyberPi series products can connect to PCs by using Makeblock Bluetooth Dongle.

For more information about Makeblock Bluetooth Dongle, see [Bluetooth Dongle Quick Start Guide <https://www.yuque.com/makeblock-help-center-en/mblock-5/bluetooth-dongle-quick-start>](https://www.yuque.com/makeblock-help-center-en/mblock-5/bluetooth-dongle-quick-start).

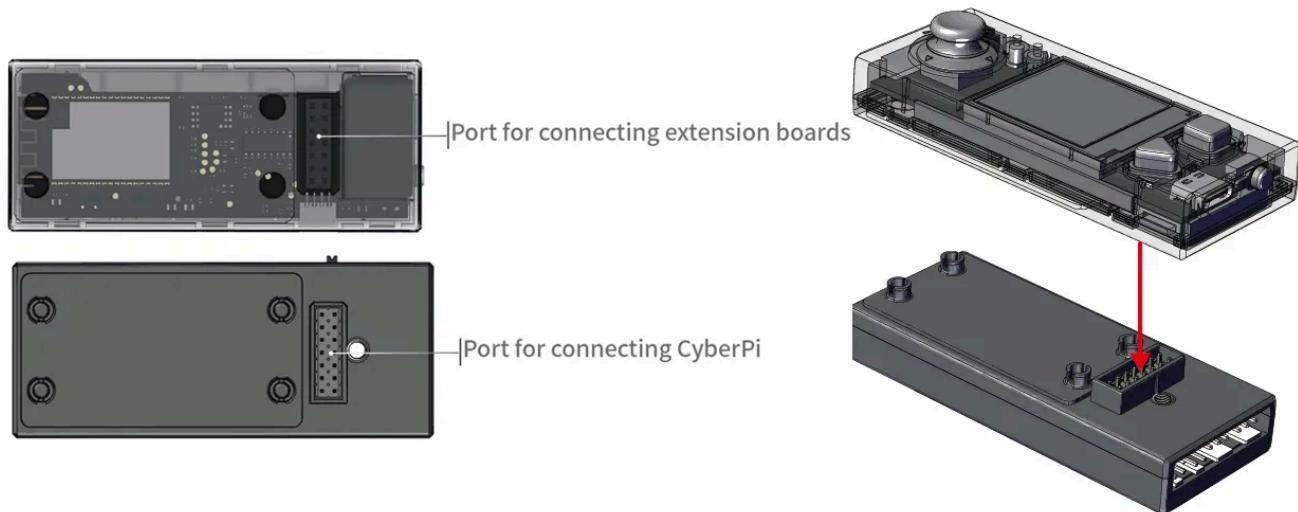
Types of Ports

CyberPi series products are designed with multiple ports, which enable them to easily connect to other electronic components and parts, facilitating the extension of abundant functions.

	Ports	Description
CyberPi	 <p>The CyberPi board features three main ports: Port 1 is a vertical port on the right side, Port 2 is a horizontal port below it, and Port 3 is a Type-C USB port at the bottom right.</p>	<p>1: used to connect extension boards 2: used to connect mBuild electronic modules 3: Type-C USB cable, used to connect to PC</p>
Pocket Shield	 <p>The Pocket Shield has two main ports: Port 1 is a vertical port on the left side, and Port 2 is a horizontal port below it, labeled M1 and M2 for DC motor connections.</p>	<p>1: used to connect CyberPi 2: DC motor ports M1 and M2, used to connect motors; Digital servo port S1 and S2, used to connect servos or LED strips</p>
mBuild electronic module	 <p>The mBuild electronic module has two main ports: Port 1 is a vertical port on the left side, and Port 2 is a horizontal port below it, labeled S1 and S2 for sensor connections.</p>	<p>Used to connect a main control board to other mBuild electronic modules</p>

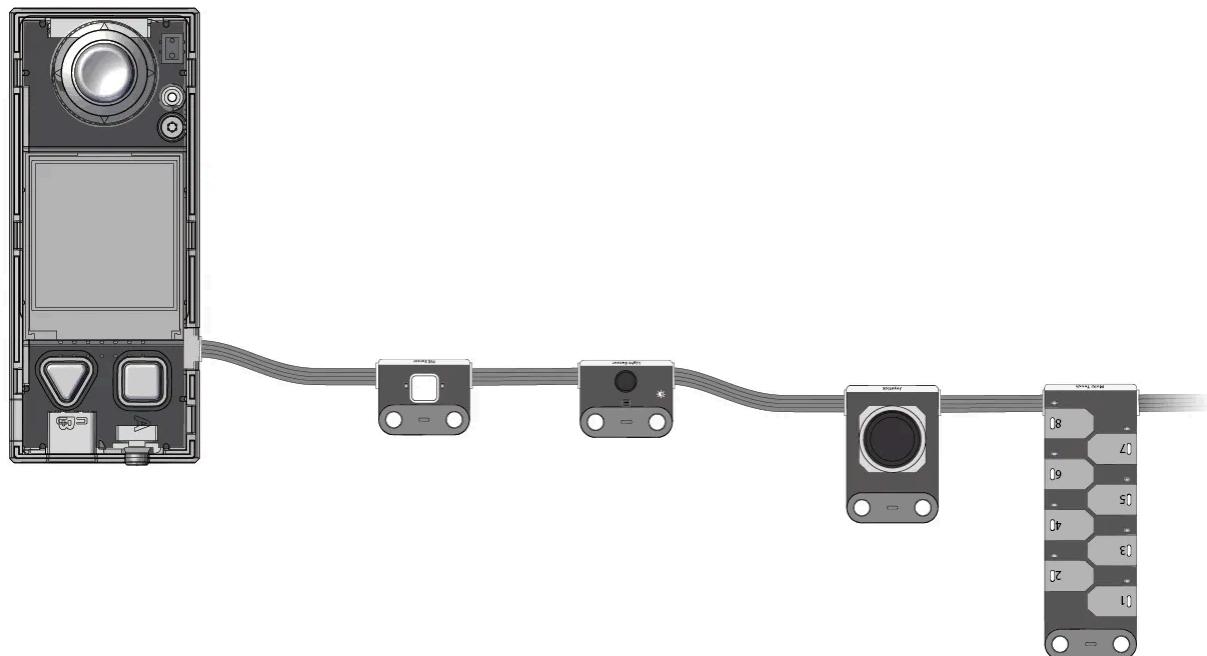
The following provides some common function extension examples:

Example 1: Connecting Pocket Shield to CyberPi



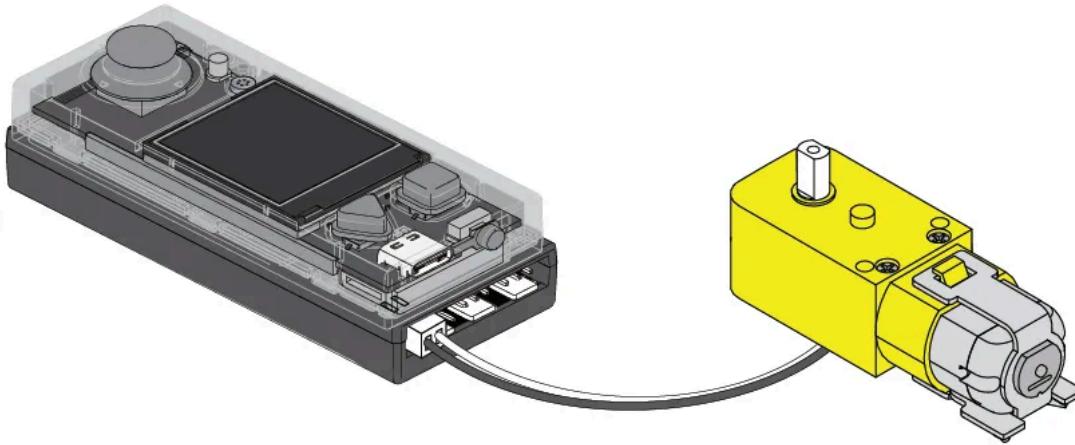
Pocket Shield is equipped with a built-in rechargeable battery that can supply power for CyberPi and provides 2-pin and 3-pin ports that can be used to connect servos, LED strips, and motors, which significantly improves the extensibility of CyberPi.

Example 2: Connecting mBuild modules to CyberPi



mBuild modules are small in size but rich in functions. CyberPi can be connected to multiple mBuild modules in series connection.

Example 3: Connecting a motor to CyberPi through Pocket Shield



CyberPi can connect to multiple types of motors through other modules or extension boards.

Cables

CyberPi series products support multiple types of connection cables, as described in the following table.

Name	Description
Type-C USB cable	Used to connect CyberPi to PCs for power supply or program/command transmission
4-pin cable	Used to connect mBuild modules
3-pin cable	Used to connect Pocket Shield or mBot2 Shield to LED strips
	Used to connect mBuild LED drivers to LED strips
2-pin cable	Used to connect Pocket Shield or mBot2 Shield to DC motors
	Used to connect mBuild motor drivers to DC motors

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