



Shenzhen Maker Works Technology Co., Ltd

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www.makeblock.com



: @Makeblock



: @Makeblock

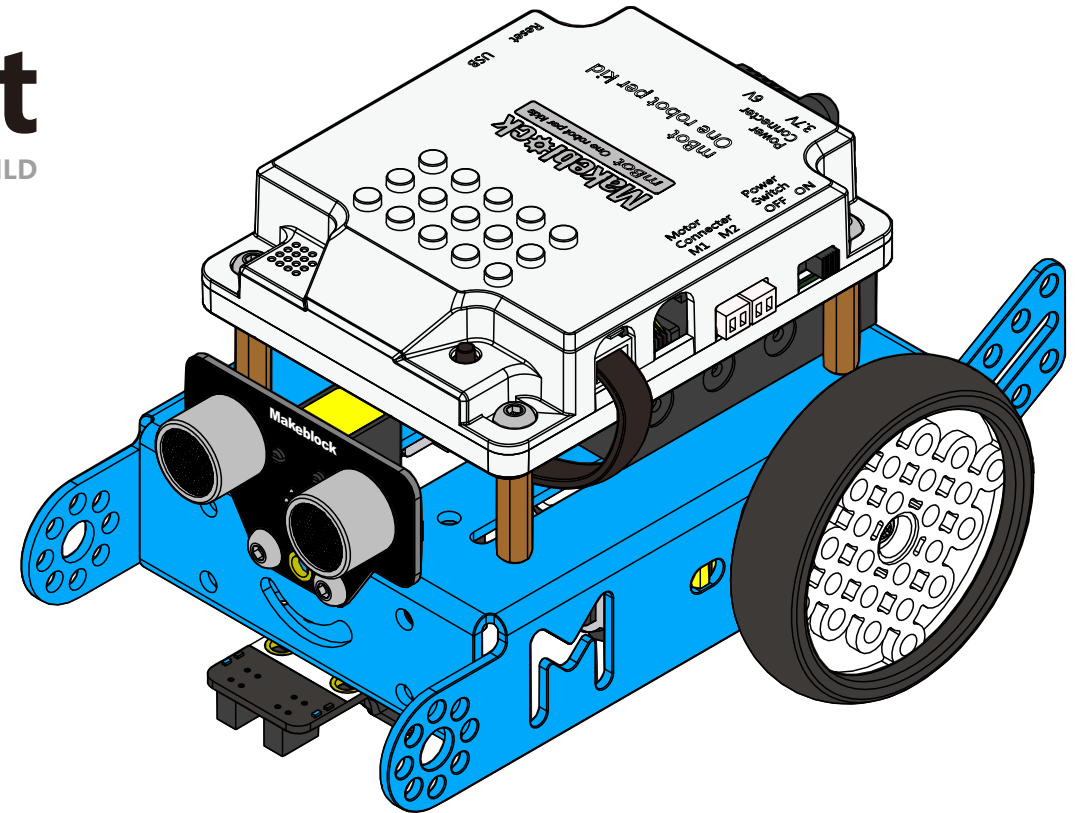


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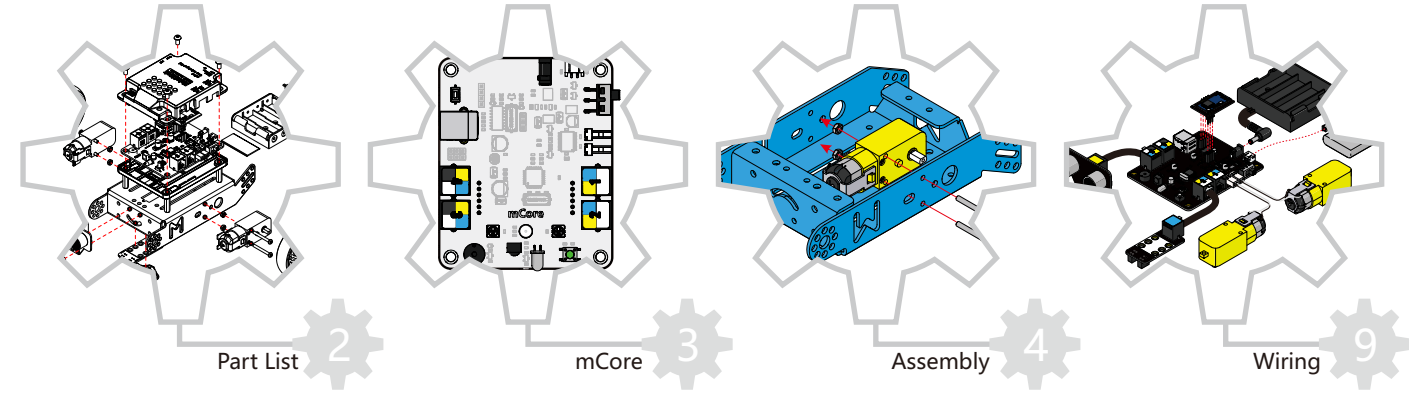
mBot

ONE ROBOT PER CHILD

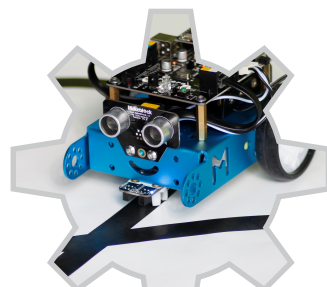


Contents

mBot is an educational robot for beginners to learn STEM (Science, Technology, Engineering, Mathematics) and experience the charms of mechanics, electronics, control system and computer science.



WARNING: CHOKING HAZARD - Small parts. Suggested for children over 12 yrs.



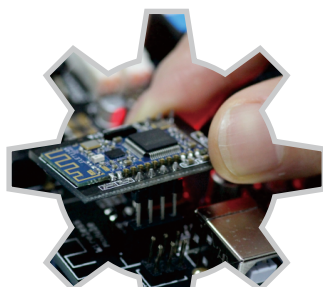
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Wireless Communication

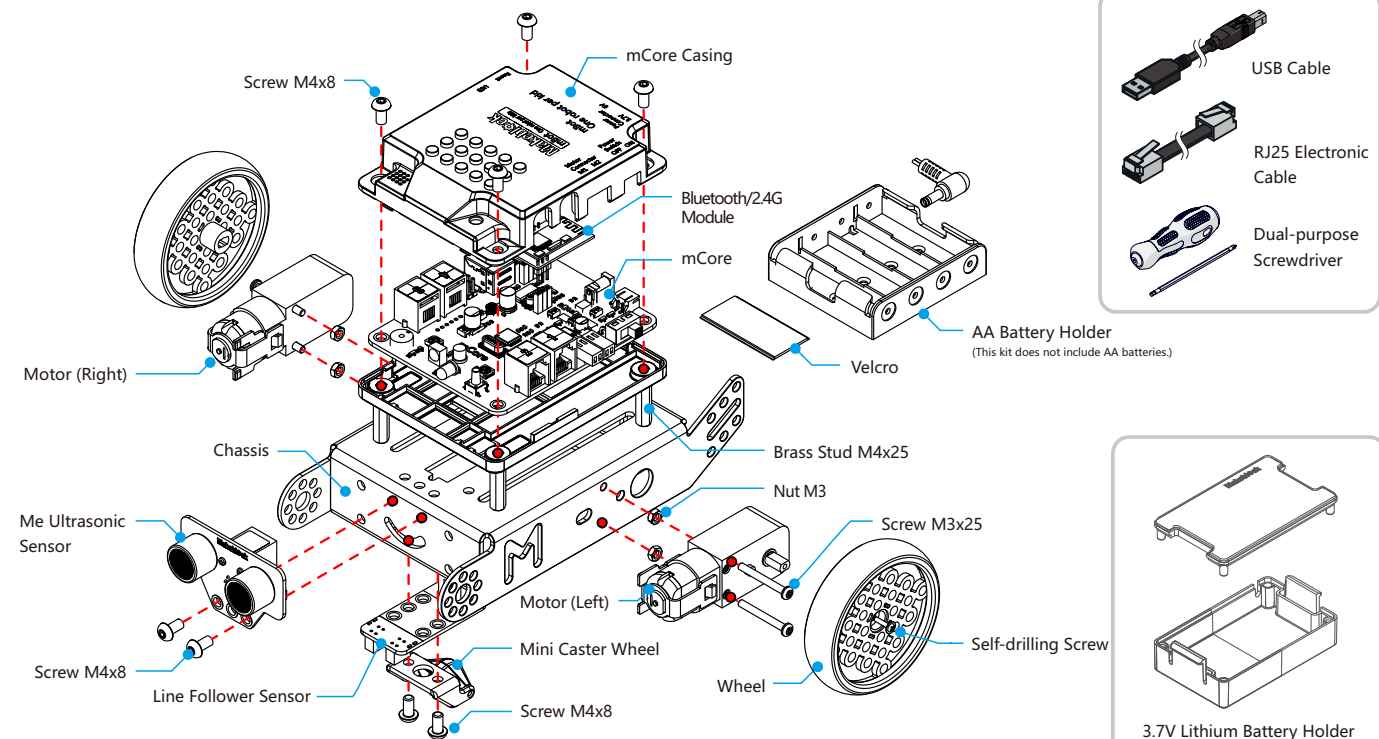
13



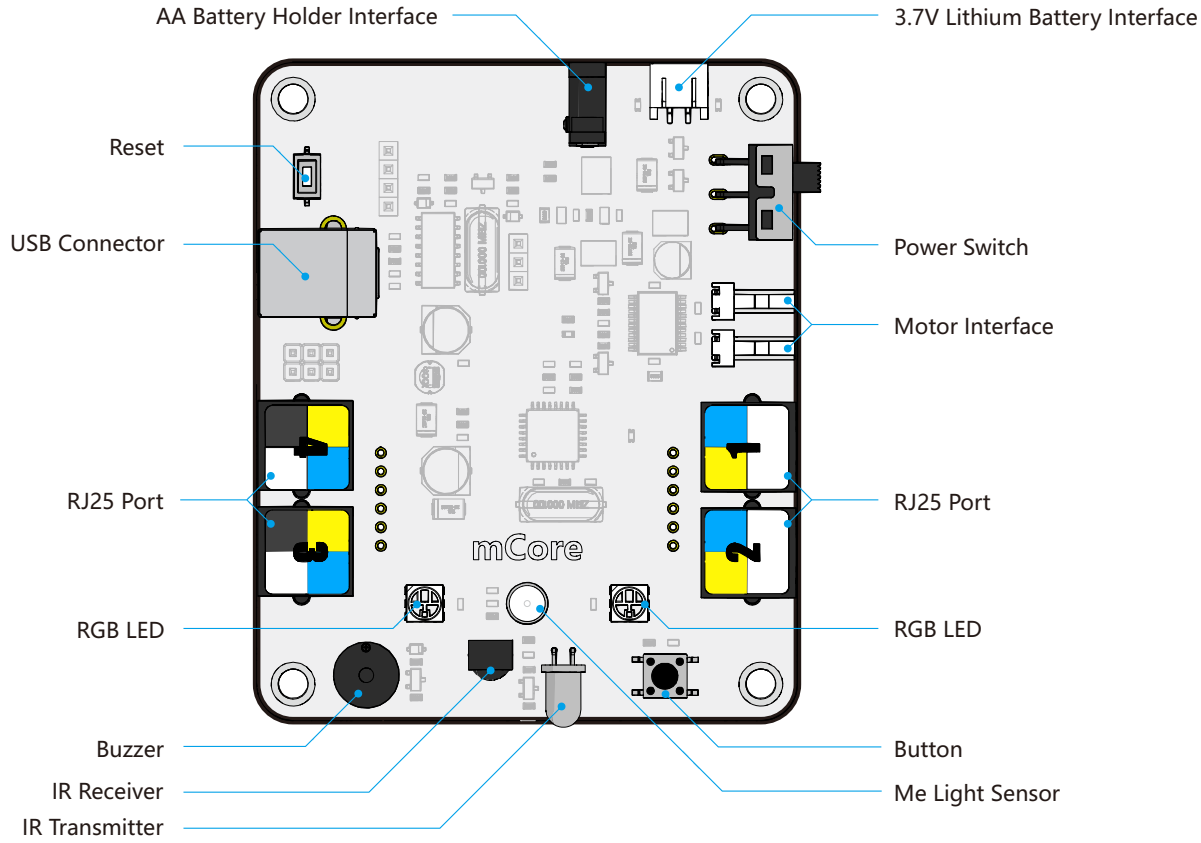
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Part List

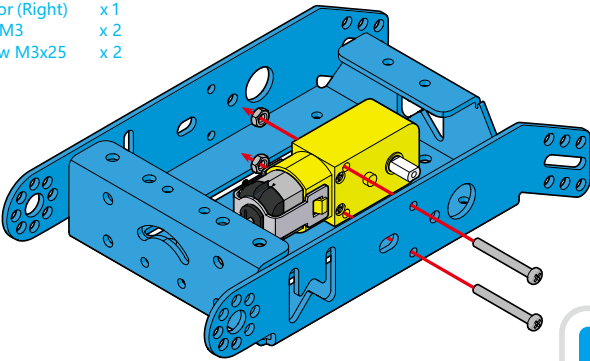


mCore

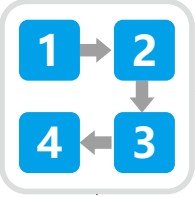
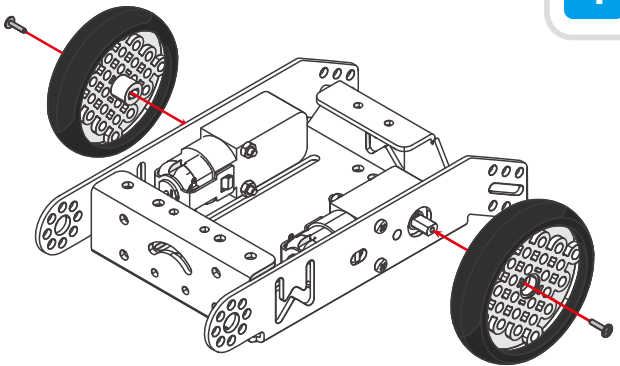


Assembly

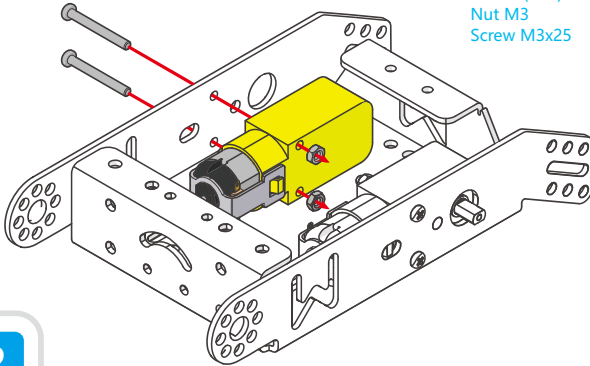
- Chassis x 1
- Motor (Right) x 1
- Nut M3 x 2
- Screw M3x25 x 2



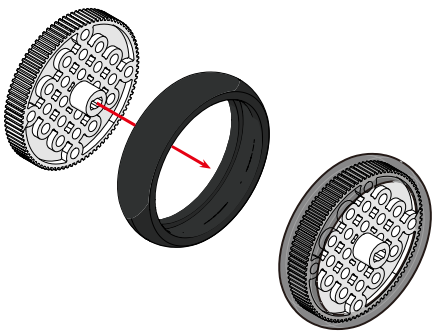
- Self-drilling Screw M2.2x9 x 2



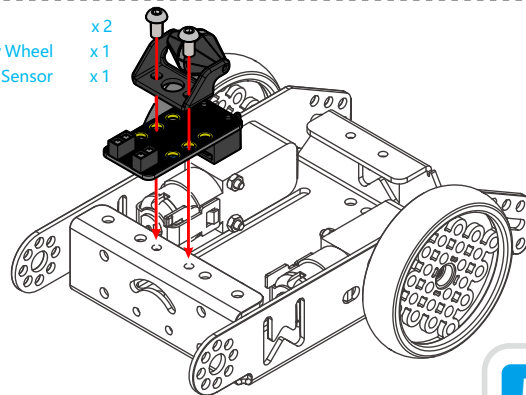
- Motor (Left) x 1
- Nut M3 x 2
- Screw M3x25 x 2



- Wheel x 2

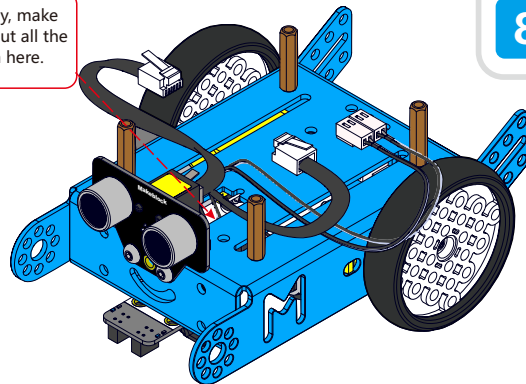


Screw M4x8 x 2
Mini Auxiliary Wheel x 1
Line Follower Sensor x 1

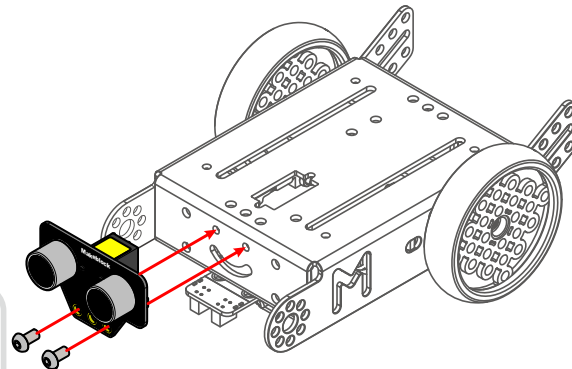


5 → 6
8 ← 7

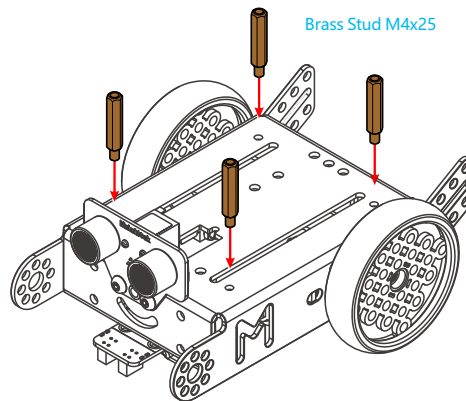
After assembly, make sure to take out all the wires through here.



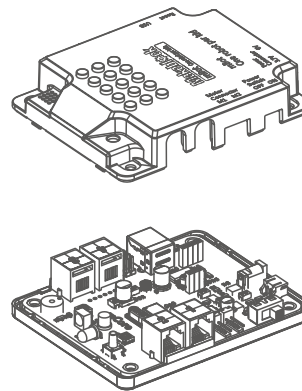
Screw M4x8 x 2
Me Ultrasonic Sensor x 1



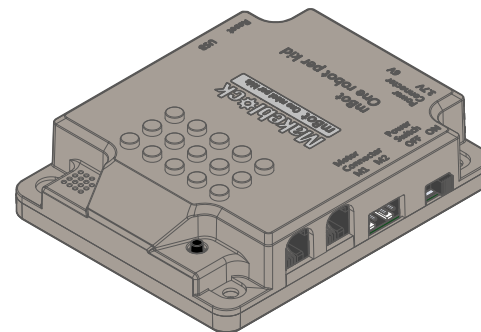
Brass Stud M4x25 x 4



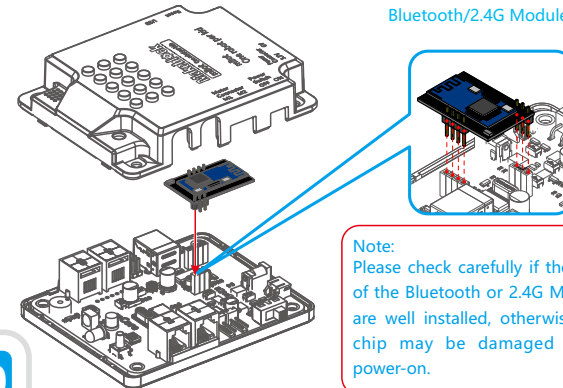
mCore Casing x 1
mCore x 1



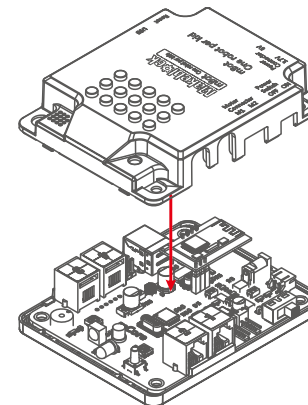
9 → 10
12 ← 11



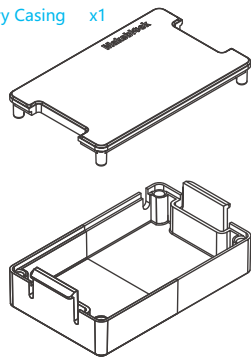
Bluetooth/2.4G Module x 1



Note:
Please check carefully if the pins of the Bluetooth or 2.4G Module are well installed, otherwise the chip may be damaged upon power-on.

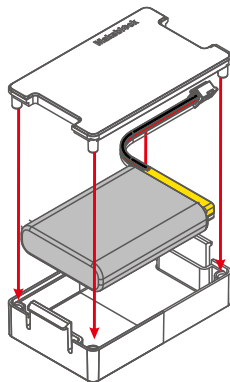


3.7V Lithium Battery Casing x1



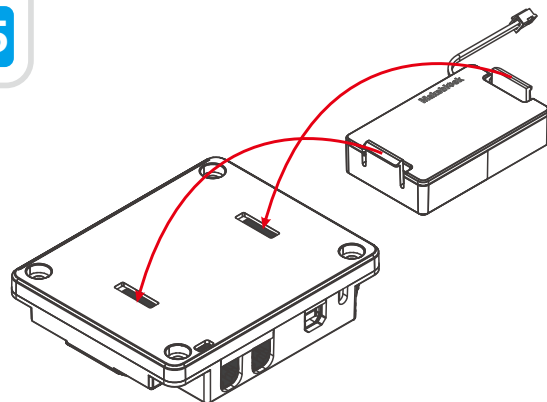
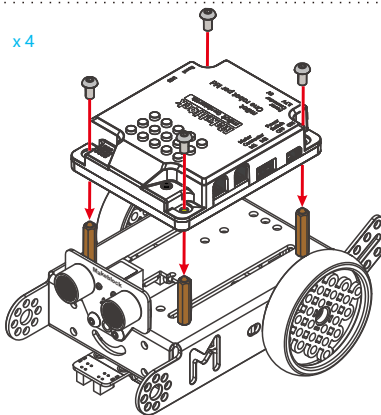
Note:
If you use AA battery holder,
please skip step 13, 14, 15,
and 16.

3.7V Lithium Battery x1

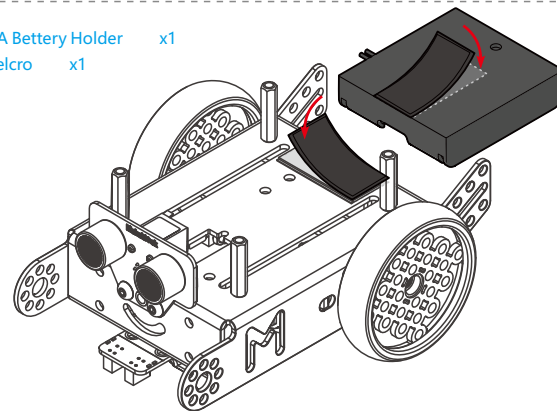


13 → 14
16 ← 15

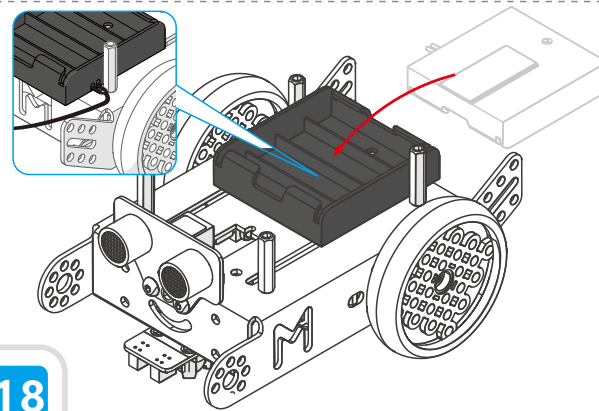
Screw M4x8 x 4



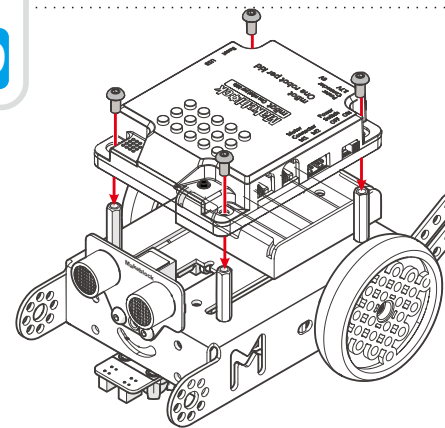
AA Battery Holder x1
Velcro x1



17 → 18
20 ← 19

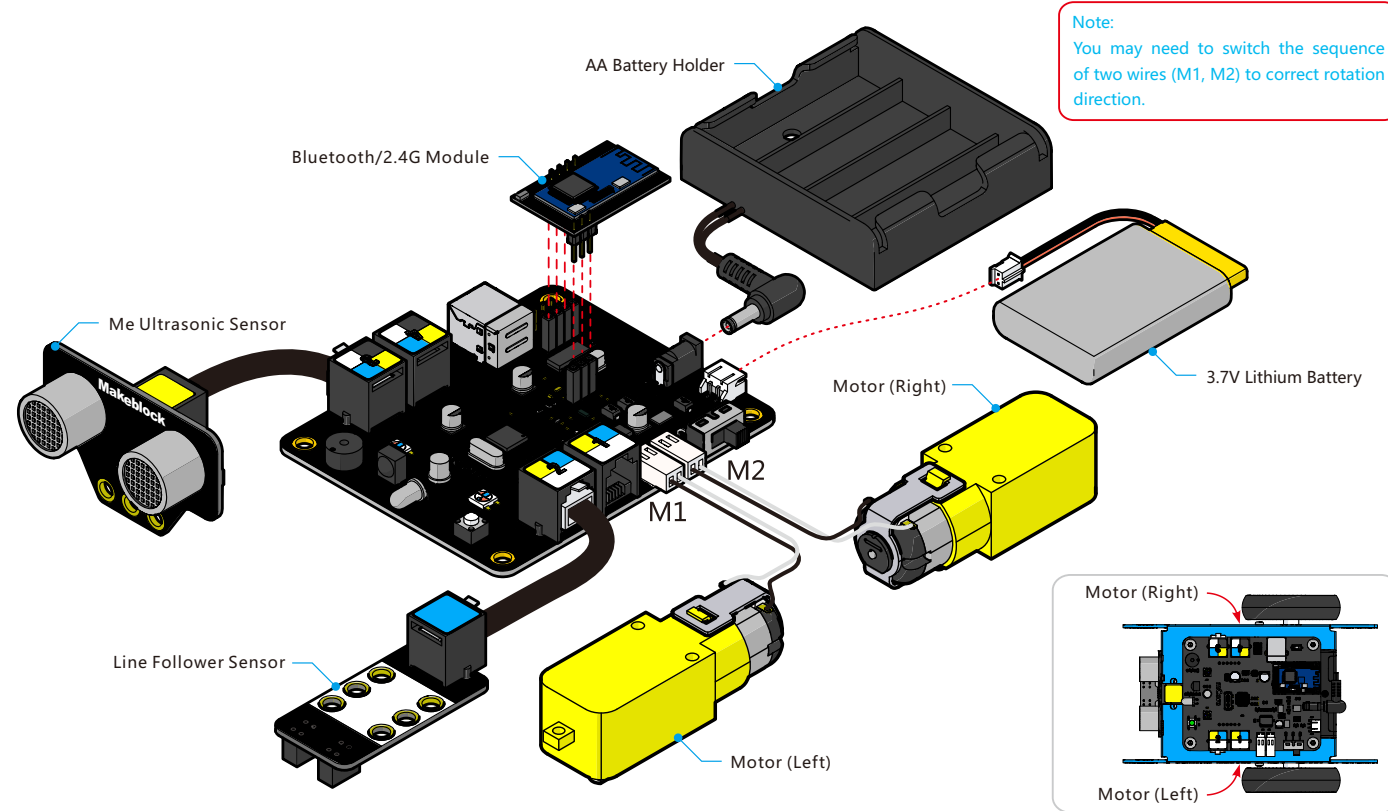


Screw M4x8 x 4



Please wire the electronic modules after assembly.

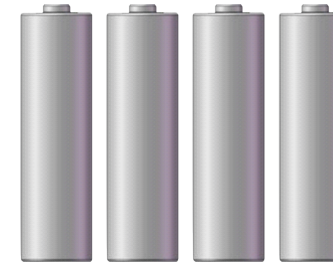
Wiring



Batteries Suggestion

mCore Voltage Range: 3.7V DC-6V DC. There are two options for the power supply:

Option 1:
4 x AA batteries (Not included)



Option 2:
3.7V Lithium Battery (not included) with standard 2.0 interface. It supports on-board charge via USB cable.



Factory Setting

Now it's time to test your mBot after it's fully assembled.

mBot has three pre-set modes: **IR control mode**, **obstacle avoidance mode** and **line-following mode**.

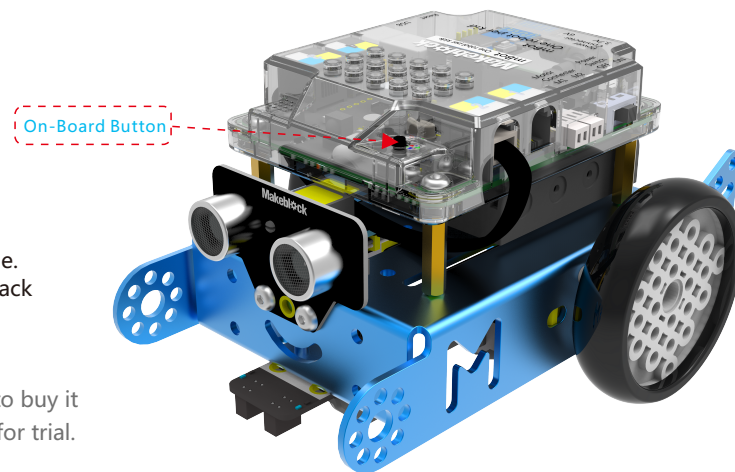
When first power on mBot, it will be under IR control mode (default mode) and the on-board RGB LED display white. Now you can use the IR controller to start controlling mBot. In addition, you can also download APP to control the Bluetooth version mBot.

Without App or IR controller, you can also test mBot just by pressing the on-board button.

When pressing the on-board button:

- If the RGB LED displays green, mBot will start obstacle avoidance mode. Place mBot on a flat ground, it will avoid walls and obstacles automatically when moving.
- If the RGB LED displays red, mBot will start line-following mode. Place mBot on a line-following map, it will move along with black line automatically.

Note: the IR controller is not included in this kit, you may need to buy it on our website. It is suggested to play mBot on the flat ground for trial.



Graphical Programming

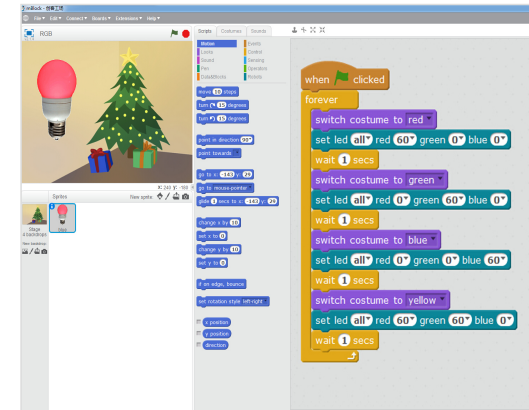
1. Introduction to mBlock

mBlock is a graphic programming software developed based on Scratch 2.0 for the hardware interactions, which can help you read the sensor's value, control the output of hardware modules and program the robot in a quick way.

Quick Guide for mBlock:

<http://learn.makeblock.com/mbot-get-started/>

Download Link: <http://learn.makeblock.com/mbot-resource-download/>

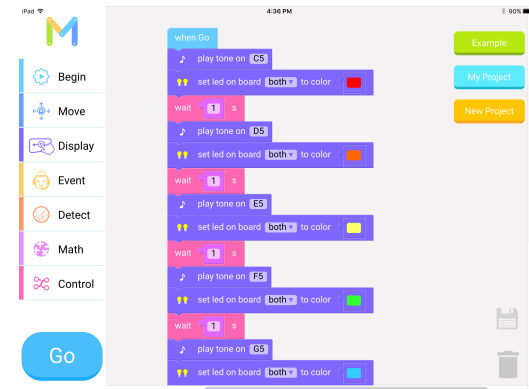


2. Introduction to mBlockly

mBlockly is a graphic programming software designed for iPad users. With mBlockly, you can easily realize many interesting interactions.

Download:

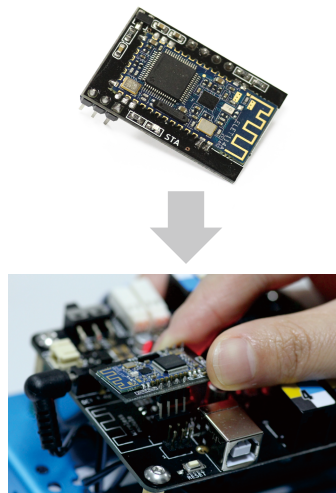
Search "mBlockly" in App Store and download it now!



Wireless Communication

1. Introduction to Bluetooth Module

The Bluetooth module is designed specially for mCore with the support of Bluetooth 2.0 and 4.0. It is suitable for both individual users and family. It can be matched with Android or iOS smartphone to control mBot, and also can be matched with computers (support Bluetooth communication) to realize wireless programming.

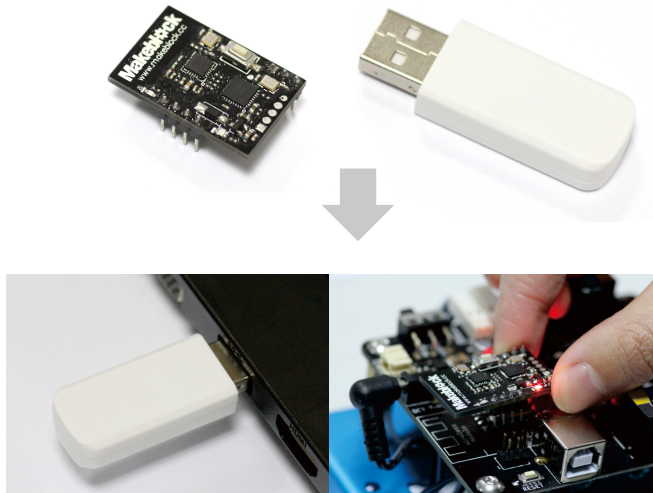


More detailed tutorials:
<http://learn.makeblock.com/mbot-get-started/>



2. Introduction to 2.4G Module

The 2.4G module includes two parts: 2.4G wireless serial-USB for computers, 2.4G wireless serial-module for mCore. It uses the same technology as the wireless mouse and is very suitable for classroom. No driver and pairing needed.

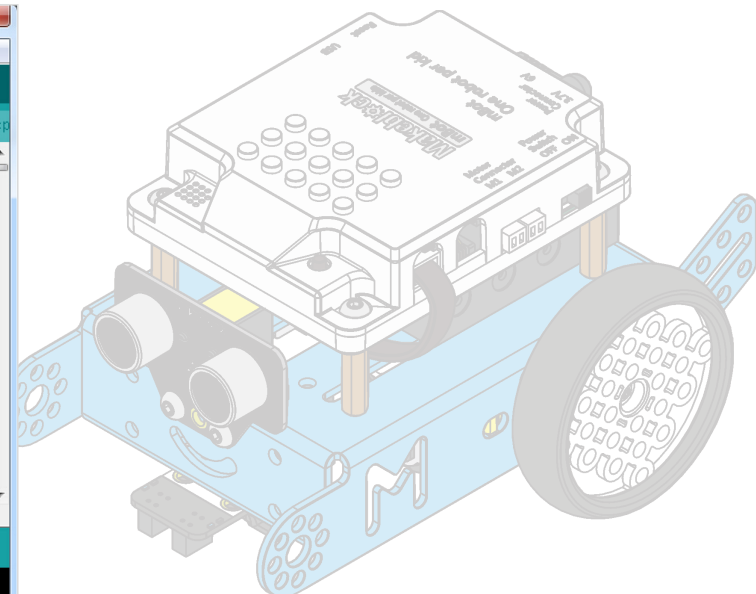
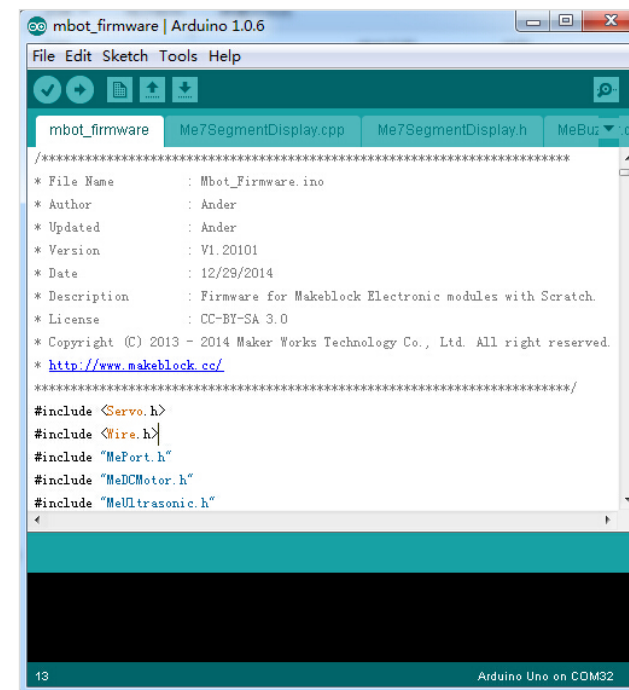


More detailed tutorials:
<http://learn.makeblock.com/mbot-get-started/>

Arduino Programming (C Language)

mBot also supports Arduino C language programming. Arduino is an open-source electronics prototyping platform based on flexible, easy-to-use hardware and software.

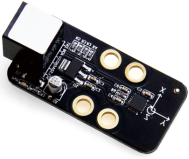
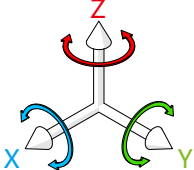
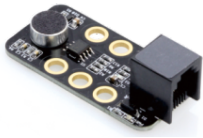




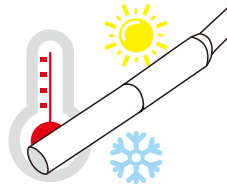

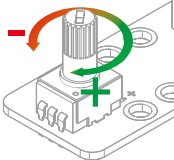

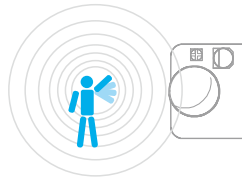

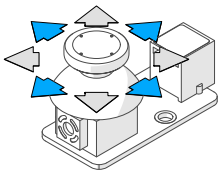
The Arduino software consists of a development environment (IDE) and the core libraries.



For more information, please visit:
<http://learn.makeblock.com>



Electronic Modules on Makeblock--Further Exploration

	Me 3-Axis Accelerometer and Gyro Sensor can measure the moving location of the objects, e.g., detecting bumps for sumo robots.			Me Sound Sensor can measure the volume. It can be used in some sound interactive projects, such as an voice operated switch.	
	Me 7-segment Serial Display includes a 4-digit nixie tube to display data, e.g. speed, time, score.			Me Temperature Sensor Module can measure the temperature, with the measurement range from -55°C to 125°C.	
	Me Potentiometer can convert rotary motion to an analog input which can be used to control the speed of a mobile robot, the brightness of RGB LEDs, or others.			Me Passive IR Detector Module can detect the infrared radiation from human or animals within 6 meters.	
	Me Joystick can control the moving direction of objects.		For more information, please visit www.makeblock.com .		