

PingPong Cube
User Manual

Introduction

PingPong Cube is base module for PingPong Robot, which enables user to make various robots by connecting with various links and materials.

Cube has a main board which has bluetooth module, stepper motor and various sensors. Also, Cube has 6 holes for connection to links on 6 faces on Cube, so that any shape of robot can be assembled whatever user imagine. User can make standards robot model with Cube and links and any robot model what they want to realize. User can play with "PingPong Robot " App. or IR remote controller. PingPong App. enables user to make any motion, and motion-schedule for the robot model. PingPong is on update to come up with software education using Scratch, Entry, Blokerly etc.

- The shape, specification and components can be changed without notice in future.
- There might be an error in this manual.

Specification

Bluetooth Ver.: Bluetooth BLE 4.0

Radio Frequency : 2.4GHz~2.483GHz

Communication Length: Maximum 10m

Support OS: Android, iOS, Windows

Size: (cube) 36x36x36 mm

Weight: (cube) 46g

Sensors: Proximity sensor 1 pair, Accelerometer& Gyro sensor 1EA, Piezo buzzer 1EA, Stepper motor 1EA, Color LED 2EA, Origin detect sensor 1 EA, Magnetic connector 1pair(Male/Female), Extension port(for servo motor and IR receiver block)



1. PingPong App Installation

1-1 Search in the Google Play Store and in the Apple App Store for "PingPong robot". Please also check that your smartphone or tablet's software is updated. To run smoothly our Apps require Android 5.0+ and iOS7+ and Bluetooth 4.0 (for iOS this is the case with iPod Touch 5+, iPad 4+ and iPhone 4s+). If you are using an older operating system you might not be able to see the Apps in the App store or you might not be able to download it.

2. PingPong robot introduction

2-1 Mode

What kind of mode PingPong have?

PingPong has two modes for control. PingPong can be controlled on "PingPong Robot" App with smart device. PingPong is controllable with IR remote controller also, without helping of any smart device.

2-2 Model

What kind of robot model PingPong have?

PingPong has dozens of basic models, whatever you choose you can assemble within 1 minute. In App control mode, prepare the Cubes and links for you selected model and connect to "PingPong Robot" App and assemble the robot finally enjoy the robot. For IR remote control mode, just attach IR receiver block to any Cube and assemble the Cubes to make the selected robot and enjoy them.

We are going to release 3D data for Cube to Link connection and protocol of Cube in future, so anyone can make their own robots, control and enjoy their imaginations. Please look forward to hundreds of PingPong models in future.

2-3 Assembly

How can I assemble specific robot model on PingPong

Each robot model on PingPong can be assembled within 1 minute. In assembly view, user can easily realize the model refer to 5 kinds of figure on Cube faces, such as circle, triangle, rectangle, star, heart icon.

2-4 Activity

About Joystick/button control activity.

Every PingPong model has joystick/button control activity. They can enjoy the robot controlling by joystick/button interface on the "PingPong Robot" App or keypad buttons on IR remote controller.

About drawing and dancing activity.

Some of PingPong model has drawing and dancing activity. The robot models which have wheels can move rectangle, triangle, circle, star, heart and some models can draw following the lines that user drew on the App.

Some models can dance synchronized with the music played in App.

About motion maker activity.

Most of PingPong model have motion maker activity. At easy mode, user can make motion schedule each robot model by sequence of activity icons for the model. For hard mode, enable user to make their own motion planning by setting the detail motion of each Cube.

App control mode



1. Prepare Cubes and turn on



2. Start "PingPong Robot" App and choose robot model.



3. Assemble the robot model



4. Enjoy with smart device

IR control mode



1. Prepare Cubes and attach IR receiver to one of them



2. Turn on Cubes and set the model number by IR controller



3. Assemble the robot model



4. Enjoy with IR remote controller

3. How to use PingPong robot

3-1 Module

I have just received my PingPong building kit but cannot turn on the Cube.

While designing the packaging we placed special attention on a safe transport of the different modules. However, on the most strenuous or long journeys it might happen that the Cube turns on and thus uses up its charge of energy. When you unpack your product you might have to connect the Cube to the charger to start to play. Your Cube fully recharges within an hour so you don't have to be too patient.

My Cube froze and does not react. What shall I do?

Press the button on the Cube for 5 seconds to reset your Cube. Turn it back on and the problem should be solved.

My Cube makes a sound and does not react. What shall I do?

Press the button on the Cube for 5 seconds to reset your Cube. Turn it back on and the problem should be solved.

The PingPong function does not seem to work upon receiving my PingPong. What shall I do?

Your PingPong Sets come with a basis version of our firmware. To fully use all functions of your building kit, download the 'PingPong Robot' App and open it. As soon as you connect the App with the Cube you will see that the App updates the firmware on the Cube automatically. Now all functions are available to you.

Why are the modules not moving in the Play Mode?

It is possible that the module is not enough power or buletooth disconnection. Please make sure that the color LED on Cube is blinking in red color or the blue LED on the Cube is blinking. On red color blinking, the battery on the Cube is running out, so please charge the Cube. If the blue color blinking, the bluetooth is disconnected, please restart the App and reboot all Cubes.

Are there any external blocks to add to my PingPong kit?

PingPong has two external blocks such as IR receiving block and servo motor block. We are currently working on a DC motor block and various sensor blocks which will be available soon. We'll keep you updated on our website.

4. Service information

Technical Q&A E-mail : tech@irobotfactory.net

Technical Q&A Telephone : +82-2-556-2239

Manufacturer homepage : www.irobotfactory.net

Nubmer :

Company : Robot Factory

Model Name : PingPong Cube (IOT Smart Toy Robot)

Manufacturer (Country) : Robot Factory Co. Ltd. (South Korea)

ADDRESS: 1st Fl. HyungWoo Bldg UnNam 9Gil 28, SeoChoGu, Seoul, Korea
DATE OF MANUFACTURER: 2019. 12.

www.irobotfactory.net

Contact e-mail.

About damage or fault on product : as@irobotfactory.net

About technical question : tech@irobotfactory.net

About general question to Robot Factory : gna@irobotfactory.net

About job opportunity on Robot Factory : job@irobotfactory.net

About sales or distribute partner contact : sales@irobotfactory.net

5. Extra information for Cubes

5-1 Charging

How long does the battery last and how long until it is fully charged?

The playtime of each Cube will last up to 1 hour. The Cube's battery needs less than an hour to recharge completely. Cubes can be charged in serial by magnetic charging connectors. In serial charging mode, the charging time depends on the number of Cubes and the current limit of AC adapter. The standard PingPong AC adapter enable to power 3A/5V, it will take within 1 hour to be fully charging for 6 Cubes in serial.

Why is my Cube not charging?

Is it possible that you did not correctly connect the cables and the charger? Please check that the power connector and AC adapter are correctly connected.

Why does the LED-light on the Cube not indicate the charging status?

The Cube can only be charged with the charger provided. Please don't connect any other chargers or adaptors.

5-2 Firmware Update

Do I need to update the firmware on the modules?

We are constantly improving the firmware on our PingPong products. As soon as you connect the 'PingPong Robot' App with your Cube, the firmware is updated automatically. It might take a few seconds but then you will be able to use your modules as before.

After a firmware update my modules are not recognized anymore. What can I do?

If your modules are not recognized correctly or not at all, you will have to repeat the firmware update. Turn off the App, turn off the Cubes and turn both back on again. Now the firmware is updated again automatically and you should be able to use your modules as before.

5-3 Trouble Shooting

I have a technical problem that is not listed here.

Please contact us gna@irobotfactory.net and we'll do our best to help you. If you did not answer by e-mail. please check your Spam filter and Spam settings in case you have not heard from us yet.

FCC Information to User

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution

Modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Compliance Information : 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