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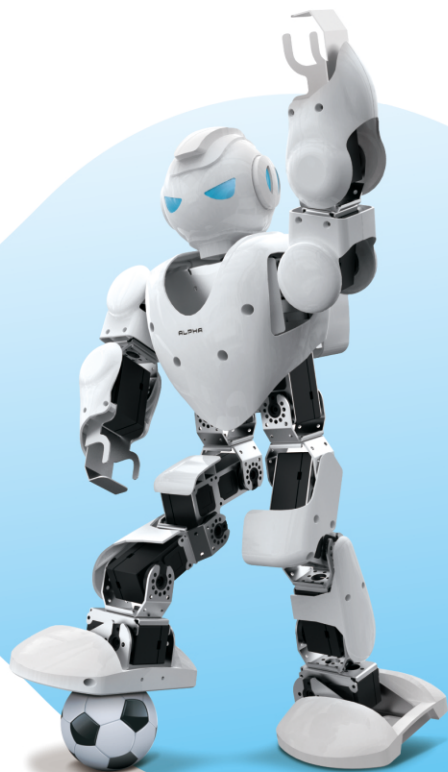


www.ubtrobot.com

User Manual 用户使用手册

阿尔法系列
Alpha Series

优必选智能机器人
Union Brother Technology Robot (UBT Robot)



创造可互动的，帮助人类、服务人类、娱乐人类的机器人

We design interactive intelligent robots to help people,
serve people, and entertain people.

优必选科技
Union Brother Technology

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注意事项 Safety Instructions

尊敬的用户，恭喜您成为阿尔法系列智能机器人的主人！
在开始使用之前，请务必先阅读本说明书！

Dear User(s), Congratulations! You are now an official owner of Alpha, the intelligent robot. Before you begin using Alpha, please read this manual carefully.

1. 建议本产品用户年龄在 12 岁以上。
Alpha is recommended for users over the age of 12.
2. 机器人使用时，勿伸手进机器人的关节活动范围内，以免机器人的误操作而导致不必要的伤害。
To avoid personal injury or damage to Alpha, do not insert your fingers or any other foreign objects into his joints or connectors.
3. 请爱护您的机器人。
Alpha needs your constant love and attention, so remember to treat him with care.
4. 不要自行拆卸机器人，如需维修，请联系售后服务人员。
Never assemble or disassemble Alpha on your own. For repairs, please contact qualified service personnel. (Refer to the "Customer Support" page on the back of the cover.)

5. 保持机器人远离您的脸、眼睛 等部位；远离儿童。
Keep Alpha away from your face and eyes as well as from children.
6. 本产品不防水，远离明火。
Remember, Alpha is not waterproof, and you should always keep him away from an open flame.
7. 请在平整光滑场地运行机器人。
Please operate Alpha on smooth surfaces, as uneven surfaces, inclining or wet floors, or areas with obstacles may stall him or cause him to fall.
8. 调试过程中，如果由于不适当的动作导致关节扭曲，请立即关机并切断电源，以防机器人损坏。
When programming actions and debugging, if Alpha's joints are twisted due to improper programming, please shut down and turn off the power supply immediately as to avoid damage.
9. 机器人关节的伺服舵机为精密产品，允许的情况下，避免做冲击性强的动作。
The servos (motors) of Alpha's joints are precision products. Please avoid all actions that will lead to external shock.
10. 机器人运行时，不可强行掰动关节，以免造成机器人不必要的磨损。
When Alpha is moving or performing an action, do not move his joints with force to prevent his unnecessary wear and tear.
11. 请避免机器人跌落损坏。演示时请提供有效保护，尽量不要将它放在高处边缘，如果机器人因跌落而损坏，公司不提供免费维修。
Please avoid damaging Alpha by dropping him or causing him to fall. Whenever he is moving or performing an action, try to provide him with necessary and effective protection. Do not use Alpha on the edge of a table, stairway, or in any location that may lead to him falling down and being damaged. We do not offer a free repair service for cases where Alpha is dropped or falls down from heights.
12. 伺服舵机里的齿轮是易耗品，长时间使用或过度使用后需要更换。
Gears in the servos are wearable and consumable materials. After long or excessive use, replacements must be made.

13. 电池充电时间约2小时，必须使用本产品配备的专业充电器。
The charging time for the battery is approximately two hours. Only use the included charger or the charger specifically designed for Alpha.
14. 机器人使用过程中如发现伺服舵机过热，先暂停使用，等温度正常后再使用。
Stop using Alpha when the servos overheat and resume once the temperature is normal again.
15. 使用时候请勿用手触摸
Please do not touch Alpha when he is in use.

! 如果发生以下任何情况，请立即切断电源并联系本公司售后。

If any of the following circumstances occur, please shut off the power immediately and contact our customer service:

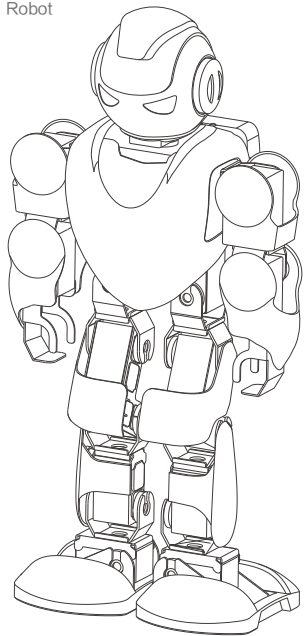
- a. 机器人冒烟或有焦味。
Alpha emits smoke or smells.
- b. 有水或其他异物进入机器人。
Water or other foreign objects penetrate Alpha.
- c. 机器人损坏。
Alpha becomes damaged.

01

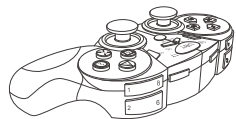
装箱清单

Package Contents

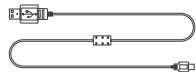
机器人本体 x 1
Robot



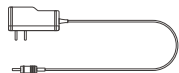
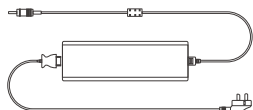
遥控器 x 1
Gamepad



下载线 x 1
Download cable



充电器或适配器 x 1
Charger or adapter



无线模块(选配) x 1
Wireless module (optional)



说明书 x 1
User manual



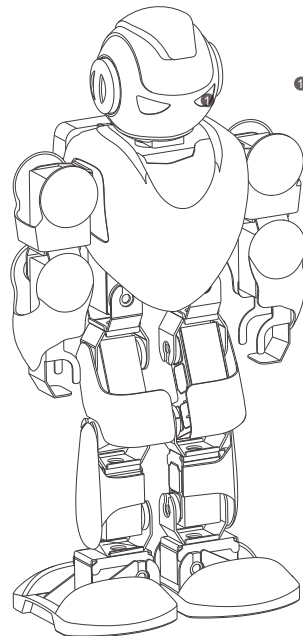
光盘 x 1
CD



02

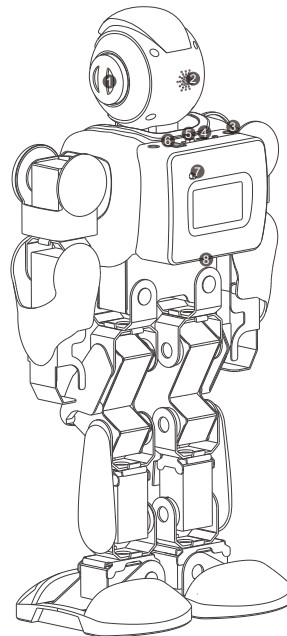
机器人组成

Parts and Components



① 眼睛LED
LED eyes

前侧视图
Front view



① 耳朵LED
LED ears

② 喇叭
Speaker

③ 复位重启
Reset

④ 开关
On/off

⑤ 直流电源输入端
DC input

⑥ 电源
Power

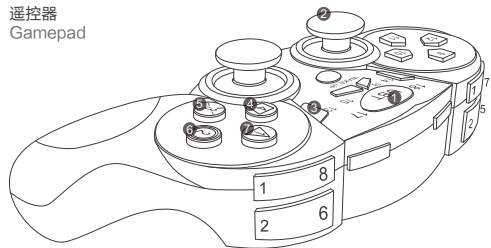
⑦ 电源LED
LED Power

⑧ SD卡
SD card

后侧视图
Rear view

02 机器人组成 Parts and Components

遥控器
Gamepad



- ① 唤醒键
Wake-up
- ② 摇杆键
Thumbstick
- ③ 复位键
Reset
- ④ 动作终止键
Terminate action
- ⑤ 菜单下翻键
Down
- ⑥ 确认键
OK
- ⑦ 菜单上翻键
Up

唤醒键: 遥控器如长时间不使用会自动休眠,再次使用时需长按任意键唤醒。

Wake-up: the gamepad will enter sleep mode if in standby mode for a long time. Press and hold any key to wake it up.

摇杆键: 暂不支持设定快捷键。

Thumbstick: currently does not support shortcut key settings.

无线模块: 与电脑连接后可取代数据线。

Wireless module: can replace USB cable when connecting to a computer.

SD卡: SD卡插入卡槽时字朝外插入。

SD card: words on SD card should face outward when inserted into the slot.

无线模块
Wireless module



Sd卡及套件
SD card and kit



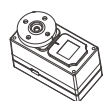
锂离子电池
Lithium ion battery



关节连接件
Joint connector



伺服舵机
Servo actuator



陀螺仪、红外传感器 (选配)
Gyroscope and infrared sensor (optional)



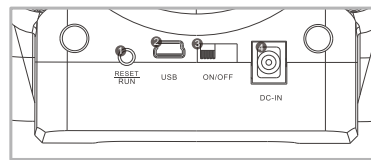
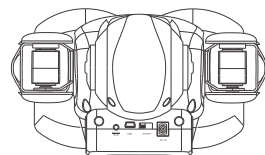
控制器 Controller

控制器在机器人胸腔中,操作按钮在机器人背部。控制器是阿尔法系列机器人的大脑,可以同时控制所有关节协调一致的运动。

The mainboard is stored in Alpha's chest with operation buttons on his back. The mainboard serves as his brain, which controls and coordinates all joints to move simultaneously.

在控制器通过控制面板进行人机交互,控制面板上有外接电源接口、电源开关、程序下载接口和复位/开始按键,其位置如下图所示。

The human-robot interaction is done through the control panel on the mainboard, which contains an external power interface, a power switch, a USB port, and a "Reset/Start" button. Their positions are shown below.



- ① 复位重启
Reset
- ② USB
Universal Serial Bus
- ③ 开关
On/off
- ④ 直流电源输入端
DC input

伺服舵机 Servo actuator

阿尔法系列机器人含有若干个伺服舵机,每个伺服舵机都有固定的编号(ID),各编号对应的关节如图所示。操作对应的伺服舵机可以控制机器人相应关节的转角和速度。

The Alpha series contains a number of servo actuators. Each actuator has a fixed identification number (ID). The ID of the corresponding joints is shown in the following figure and operating the corresponding servo will control the angle and speed of Alpha's joints.

02 机器人组成 Parts and Components

电池 Battery

电池位于机器人腹部,为机器人专用大容量离子电池,内置过充和过放保护电路。

The battery is located in Alpha's abdomen. It is a special large-capacity ion battery with a built-in overcharge and over-discharge protection circuit.

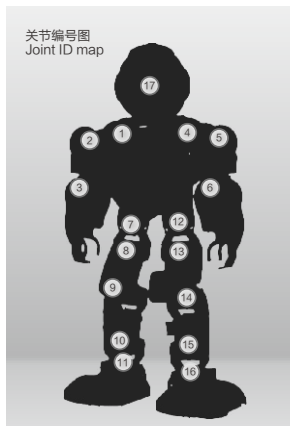
充电 Charging

使用机器人前,请先给机器人充足电。将适配器一端接入机器人标有“DC-IN”的充电口,一端接220V交流电,此时机器人充电指示灯显示红色,表明机器人正在充电。充电结束后,指示灯变为绿色,表示电池充满,请将适配器从机器人充电口拔出,停止充电。充电过程中可以调试机器人。

Before using Alpha, make sure he is fully charged. Insert one end of the adapter to the charging port labeled "DC-IN" and connect the other to a 220 V AC power socket. When the charging indicator turns red, it indicates that Alpha is being charged. When charging is completed, the indicator will turn green, which indicates that the battery is fully charged. Please pull the adapter out of the charging port. Alpha can be debugged when charging.

玩具附带充电器 Accessory charger

- 内置7.4V的电池,不可拆卸及更换,如有损坏应联系服务并进行维修。
- 充电器由成人或在成人监护下使用。
- 定期检查充电器的电线、插头、外壳和其它部件是否损坏,发现损坏时应停止使用,直至修复完好。
- 充电器不是玩具,充电时只能使用标配的充电器(输入100V-240V输出9V 1A)。



- 可用液体清洁玩具(机器人)的表面,清洁前应与充电器断开。

1) 请由成人协助打开产品包装

2) 此产品不能烫煮,请勿接近火源,不能湿布擦拭玩具表面。

电池的安裝: 遥控器使用3节1.5V(AA)电池。需有成人组装。

用螺丝刀旋开电池盖。正确放入电池后,再旋紧电池盖。

电池安全说明: 非充电电池不能充电; 充电电池只能在成人的监护下充电; 充电电池在充电前应从玩具(机器人)中取出; 不同型号的电池或新旧电池不能混用; 电池应以正确的极性放入; 用尽的电池应从玩具(机器人)中取出; 电源端子不得短路。

- Equipped with a built-in 7.4V battery that is non-detachable and irreplaceable. If damaged, please contact our Customer Service Department for repairs.
- The charger should be used by an adult or under adult supervision.
- Regularly check the charger wire, plug, housing, and other components for damage. If damage is found, please discontinue use until repaired.
- The charger is not a toy, and Alpha is only compatible with the recommended charger (100 V-240 V input, 9V 1A output).
- You may use a wet cloth to wipe the surface of Alpha. Please disconnect him from the charger before cleaning.

1) Please ask an adult to assist you when opening package.

2) This product cannot be heated. Please keep Alpha away from an open flame.

Battery installation: Three 1.5 V (AA) batteries are required for the gamepad. An adult is needed for assembly.

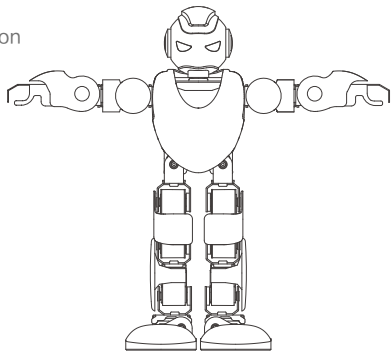
Unscrew the battery cover with a screwdriver. Properly put batteries in place and screw cover back on.

Battery safety instructions: Non-rechargeable battery cannot be charged. A rechargeable battery can only be charged under adult supervision. Rechargeable batteries should be removed from Alpha before charging. Do not use a mixture of different types of batteries or old and new batteries. Batteries should be placed in with correct polarity. Dead batteries should be removed from Alpha. Battery terminals must not become short-circuited.

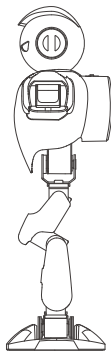
将机器人电源开关拨到“On”位置，机器人眼部LED灯显示蓝色，机器人处于待机状态。按一次复位/运行键，机器人会处于复位状态，保持双脚并拢、双臂伸直的姿势(如下图)，机器人复位时幅度较大，请拿起后背包复位，防止机器人跌倒。此时机器人关节已经带电，不可用力掰动，否则可能会造成关节损坏。第二次按复位/运行键，机器人将开始运行自我介绍的程序，包括语音介绍，唱歌、舞蹈、打功夫等。

By switching power to "On", Alpha's LED eyes will turn blue. This indicates that he is in his standby state. Press "Reset/Start" and Alpha will enter his reset position, which is with his feet together and arms stretched out (as shown below). As the reset position requires large movements, please hold his backpack when resetting to prevent him from falling down. Alpha's joints are locked when in use. Therefore, do not force or press his joints for this will cause damage. By pressing "Reset/Start" once again, Alpha will initialize his introduction program, which includes introducing himself, singing, dancing, performing Kung Fu, etc.

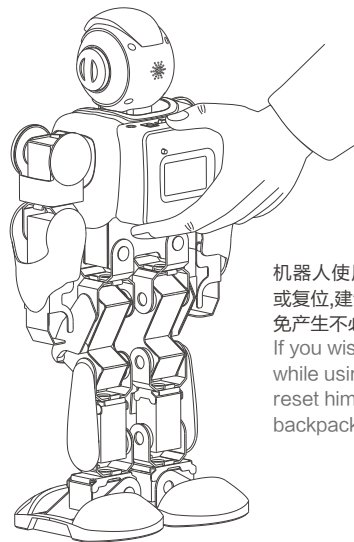
复位姿势图
Reset position



前视图
Front view



侧视图
Side view



机器人使用过程中若要拿起机器人或复位,建议用此姿势握住后背包,以免产生不必要的伤害。
If you wish to pick up Alpha while using him or you wish to reset him, please hold his backpack as to avoid damage.

! 注意
Note

按复位/运行键前，请远离人的脸和眼睛，手指勿伸进关节活动范围内。当机器人非正常工作时立即关闭电源，另外，运行时最好不要放在边缘处，以防机器人从桌面等高处跌落。

Before pressing "Reset/Start", please keep Alpha away from your face and eyes. In addition, do not insert your fingers or any foreign objects into Alpha's joints. Please shut off the power immediately when he is not in his normal operating state. In addition, do not place Alpha on the edge of anything high as to prevent him from falling down and being damaged.

阿尔法系列机器人的控制软件是Game Robot Editor，该软件为优必选科技公司自主开发的机器人3D可视化控制软件。通过简单的程序编辑，可以实现机器人自主运行、遥控操作、语音控制、键盘控制等功能。

The control software for the Alpha series is the Game Robot Editor, which is 3D visual control software developed independently by Union Brother Technology. Through simple editing, Alpha can operate autonomously through a gamepad, a voice control, and a keyboard control.

软件运行环境 Software environment

Game Robot Editor软件需要在windows XP及以上操作系统.NET补丁3.0以上的环境中运行，电脑配置如下：

内存: 512M以上，

显存: 512M以上，

显示器 分辨率 1024*768或以上，

外设: USB接口及键盘、鼠标。

Game Robot Editor is compatible with Windows XP and above, or with .NET 3.0 patch above.

The minimum computer configuration requirements are as follows:

Memory: 512 M or above;

Visual memory: 512 M or above;

Display resolution: 1024 x 768 or above;

Peripherals: USB interface, keyboard, and mouse.

阿尔法机器人安装： Installation of Alpha:

二部分（软件安装+驱动安装）

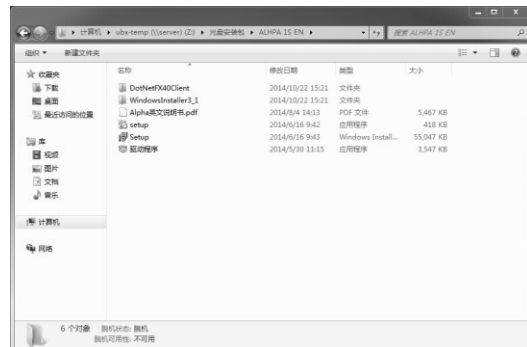
Two Parts (Software installation + Driver installation)

软件安装

Software installation

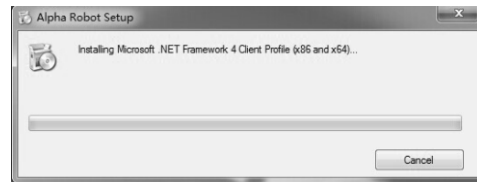
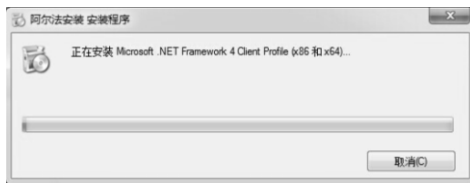
1首先打开光盘文件 双击运行 setup 文件

First, double click the setup file in the installation directory.



2. 安装.NET文件选择“接受”安装。

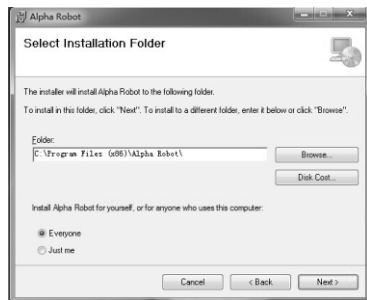
Choose “Accept” to install .NET file.



注：安装完成后提示重启，选择重启，重启后会继续进行阿尔法软件程序安装。未提示的则继续安装。选择安装文件夹位置，这里我们默认目录。

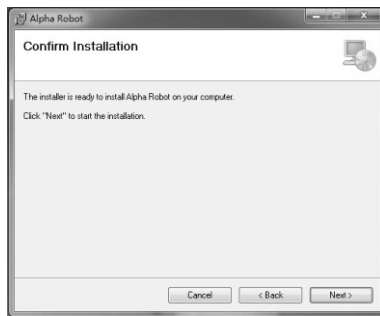
Remark: When the installation is complete, if reboot prompt, restart the computer; Alpha installation will continue after reboot; If no reboot prompt, please continue installation. Select an installation folder, here we use the default directory.





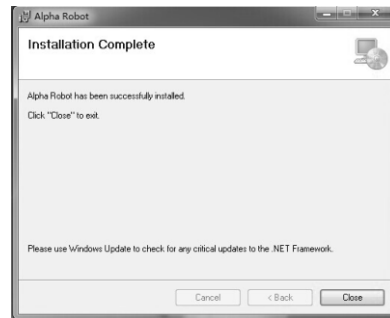
3. 确认安装，点击下一步。

Confirm the installation, click next.



4. 软件安装完成。

The software installation is complete.

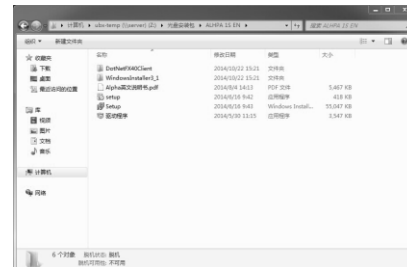


驱动安装:

Driver installation:

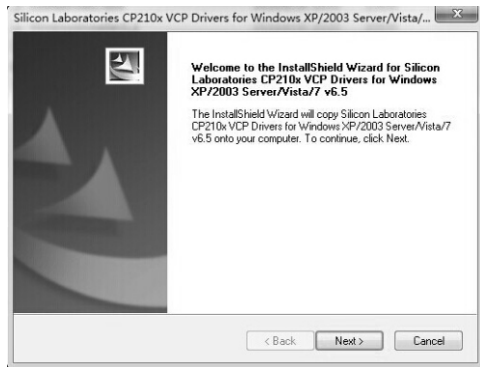
1. 双击“驱动程序软件”。

Double click “Driver”.



2. 安装驱动, 点击下一步。

Install the driver, click “next” .

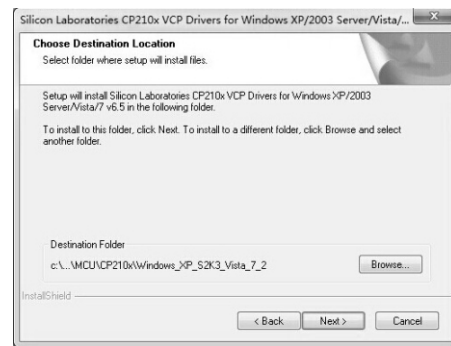


3. 确认安装, 点击下一步。

Confirm the installation, click next.

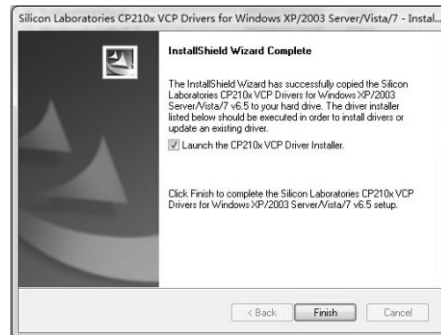
4. 默认安装路径, 下一步

The default installation path, click “next” .



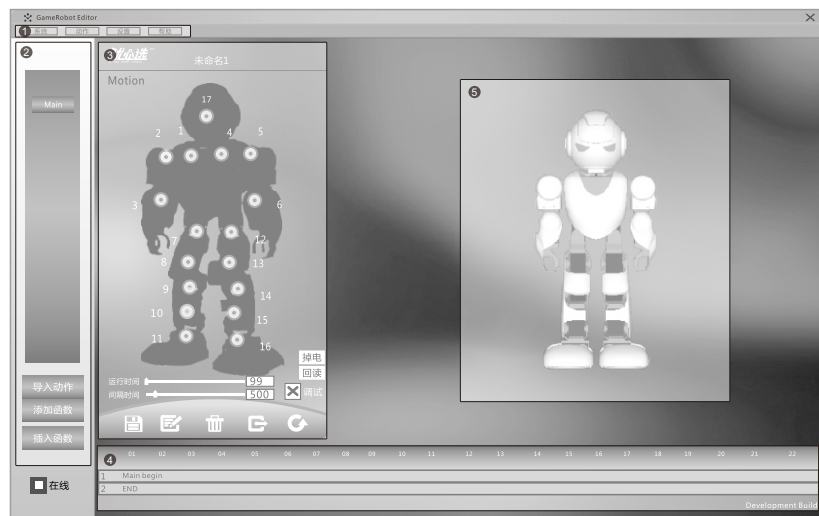
5. 完成安装。

Installation is complete.



软件界面如下图。下设系统、动作、设置3个子菜单，界面包含动作函数栏、姿态编辑区、预览图和动作帧栏。

The software interface is shown below with three submenus: System, Action, and Settings. The interface also contains the following features: Action Function Bar, Pose Editor, Preview, and Action Frame Bar.



1 菜单栏 Menu 2 动作函数 Action Functions 3 姿态编辑 Posture Edit 4 动作帧 Action Frame 5 预览图 Preview

菜单栏

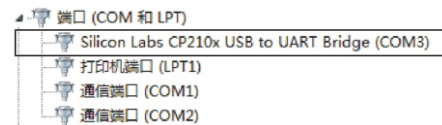
Menu bar

系统

System

串口——串口叫做串行接口，电脑一般有两个串行口，COM1/COM2。当机器人与电脑通过数据线连接后电脑会出现一个端口号，端口号可以在电脑设备管理器中端口选项查看，如下图提示框为COM3。

Serial port: a serial port is called a serial interface. A computer usually has two serial ports, COM1/COM2. When Alpha is connected to a computer through a USB cable, a serial port number will appear on the screen. The serial port number can be viewed in the serial port option under "Device Manager". For example, the serial port shown below is COM3.



再查看机器人操作软件的端口是否与电脑端口号相同，软件的端口可以在系统/串口中查看，按串口后会出现右图窗口，再按上面的提示框选择与电脑对应的端口号。

Next, check whether the port number for Alpha's operating software is compatible with your computer's serial port number. The port of the software can be viewed in the system/serial port. When the serial port is connected, a window will appear as pictured on the right. Then, select the port that corresponds to your computer following the message from above.

因为软件的端口数量只有COM1-8，电脑自动分配的端口号可能超过COM8，若是这样可以设置电脑的端口号确保与软件的端口号一致。

As the number of ports ranges from COM1-8, your computer may automatically distribute ports that are more than COM8. Therefore, it is better to set the port number manually to ensure that the software port number is compatible with your computer's port number.

动作
Action

新建——新建一个编辑文件。
New: create a new file.

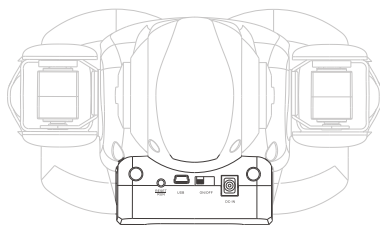
打开——打开一个已编辑好的文件。
Open: open an existing file.

保存——保存当前的编辑文件到默认的文件夹。
Save: save the current edited file to the default folder.

另存为——另存文件到其它路径。
Save as: save the current file to another folder.

下载到主文件——下载机器人的默认动作通过机器人后背控制器按键"控制"。
Download action to main file: download the default action using the "Reset/Start" button on the mainboard, which is located on Alpha's back.

下载控制文件——下载机器人的动作通过外部控制器控制,如手柄、键盘、语音。
Download control file: download Alpha's action through an external controller (such as a gamepad, keyboard control, or voice control).



机器人后背控制器
Controller on Alpha's back

设置
Settings

舵机——设置伺服舵机的角度来调整伺服舵机运行中的范围、初始状态和偏差值。
Servo: set the angle of the servo rudder to adjust the range of servo operation, its initial mode, and deviation value.

手柄——可以对手柄的按键赋予特定的动作。
Gamepad: set up the gamepad to control Alpha.

键盘——通过键盘控制机器人的运行。
Keyboard: control Alpha's operation through a keyboard.

语音——设置对应的口令让机器人运行。
Voice: set up corresponding voice commands to control Alpha.

模型——设置自己所需调试的机器人型号。
Model: set Alpha's model.

手柄控制
Gamepad

编辑/下载控制文件, 将编好的控制文件下载到机器人。
Edit/download control file, Download configured control file to Alpha.

a 配置手柄命令
Configure gamepad commands

单击“设置”下拉菜单, 选择“手柄”; 在弹出的菜单中选择“按键”下拉菜单, 选择要配置的按键命令, 如9。
Click the "Settings" drop-down menu. Then, select "Gamepad". Next, select "Button" from the drop-down menu. Finally, select the button that you wish to configure (e.g. "9").

b 配置对应动作
Configure corresponding action

在对应的“动作”下拉菜单中选择对应的动作程序, 如“forward”。
In the "Action" drop-down menu, select the corresponding action program (e.g. "Forward").

c 下载配置文件
Download configuration file

配置好所有手柄命令后, 单击“下载”按钮, 程序将会下载到机器人。
After configuring all gamepad commands, click the "Download" button. Then, the program will be downloaded to Alpha.

05 软件界面及操作 Software Interface and Operation

- d 使用手柄控制
Using gamepad control
- 重新启动机器人，按下“复位/运行”按钮，机器人处于复位状态。按下刚才配置的按钮，如9，机器人将执行刚才配置的对应的动作。
To restart, press the "Reset/Start" button. Then, Alpha is in reset mode. Next, press the button that you just configured (e.g. "9"). Alpha will execute the corresponding action that was just configured.

- 键盘控制
Keyboard control
- 机器人除能按程序自主运行外，还可通过键盘、遥控器和语音控制。通过键盘控制时，首先必须将无线通讯模块接在电脑上，确保无线通讯模块能与机器人正常通讯。
Apart from autonomous operation, Alpha can be controlled through a keyboard, a gamepad, as well as your own voice. When controlled by a keyboard, the wireless communication module must be connected to a computer as to ensure it is functioning properly with Alpha.

- a 编辑控制文件
Edit control file
- 参照编辑动作方法编辑动作文件，完成后在“动作”下拉菜单中选择“另存为”，将所编辑的动作文件保存为一个控制文件，如“Action.tab”。
How do I reference an edited action Once you have finished editing an action file, select "Save as" from the "Action" drop-down menu. Then, save the edited file as a control file (e.g. "Action.tab").

- b 下载控制文件
Download control file
- 点击“动作”下拉菜单，选择“下载控制文件”，在弹出的对话框中选择已经编辑好的控制文件，如“Action.tab”，将该控制文件下载到机器人。
Click the "Action" drop-down menu. Then, select "Download control file". Next, select the configured control file from the pop-up box (e.g. "Action.tab") and download it to Alpha.

- c 配置键盘命令
Keyboard command configuration
- 单击“设置”下拉菜单，选择“键盘”；在弹出的菜单中选择“按键”下拉菜单，选择要配置的按键命令，如W。
Click the "Settings" drop-down menu. Then, select "Keyboard". Next, select the "Key" drop-down menu. From there, select a key that you wish to configure (e.g. "W").

- d 配置对应动作
Configure corresponding action
- 在对应的“动作”下拉菜单中选择对应的动作程序，如“Action”。
In the "Action" drop-down menu, select the corresponding action, (e.g. "Action").

- e 下载配置文件
Download configuration file
- 配置好所有键盘命令后，单击“开启”按钮，程序将会下载到机器人。
Configure all keyboard commands. Then, click "Open". The program will be downloaded to Alpha.

- f 使用键盘控制
Using keyboard control
- 重新启动机器人，按下“复位/运行”按钮，使机器人处于复位状态。按下刚才配置的键盘按钮，如W，机器人将执行刚才配置的对应的动作。
Restart Alpha by pressing "Reset/Start". Alpha is now in reset mode. Press the key that you just configured (e.g. "W"), and Alpha will execute its corresponding action, which was also just configured.



05 软件界面及操作 Software Interface and Operation

- 语音控制**
Voice control

编辑/下载控制文件，将编好的控制文件下载到机器人。
Edit/download control file, Download configured control file to Alpha.
- a 配置语音命令**
Configure voice commands

单击“设置”下拉菜单，选择“语音”；在弹出的菜单中选择“识别字”下拉菜单，选择要配置的按键语音命令，如“前进”。
Click the "Settings" drop-down menu and select "Voice". Then, from the "Key" drop-down menu, select the voice commands to configure (e.g. "Forward").
- b 配置对应动作**
Configure corresponding action

在对应的“动作”下拉菜单中选择对应的动作程序，如“forward”。
Select the corresponding action in the "Action" drop-down menu (e.g. "Forward").
- c 下载配置文件**
Download configuration file

配置好所有语音命令后，单击“下载”按钮，程序将会下载到机器人。
After configuring all voice commands, click "Download" on the program that you want to download to Alpha.
- d 修改语音命令**
Modify voice commands

程序缺省提供了“前进”、“后退”等的语音识别命令，如果需要修改该语音命令，在“更改字”栏中输入需要修改的语音命令字，在对应的动作栏中选择对应的动作，最后保存。
The program provides default voice recognition commands (e.g. "Forward" and "Backward"). If you need to modify a voice command, input new voice commands in the "Change Key" bar. Then, select the corresponding action and save.

e 使用语音控制 Using voice control

重新启动机器人，按下“复位/运行”按钮，机器人处于复位状态。将无线通讯模块插在电脑的USB口，确保机器人与电脑通讯正常。对着麦克风发布刚才配置的语音命令如，“前进”，机器人将执行刚才配置的对应的动作。
Restart Alpha by pressing "Reset/Start". Then, Alpha is in reset mode. Insert the wireless communication module onto the computer's USB port to ensure that communication between Alpha and your computer is normal. Next, give the voice command that you just edited through the microphone (e.g. "Forward"). Alpha will then execute the corresponding action you just configured.

! 注意 Note

语音控制需要在比较安静的环境中进行，说语音命令时请用标准普通话，否则易造成误识别，机器人将没有反应或误动作。
Voice control needs to be set up in a relatively quiet environment. Please speak standard English when setting voice commands (otherwise, your voice may not be recognized, Alpha may not respond, or he may operate incorrectly).

模型选择

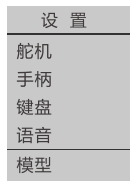
Model selection

要机器人完成用户设定的各种动作，必须先通过Game Robot Editor 进行动作编辑，将编辑好的动作保存并下载到机器人后才能执行。在动作编辑前，先用外接电源给机器人供电，并打开电源开关，然后用下载线连接机器人下载口和电脑USB口。

To make Alpha complete various tasks, you must first edit his actions through the Game Robot Editor. Then, you must save and download the edited file to him. Before editing his actions, connect Alpha to the external power supply, switch his power on, and connect the download port to your computer's USB port via the download cable.

本软件适合的机器人模型有多种。开启“Game Robot Editor”后，如果发现实际机器人与预览区的模型不一致，可以在菜单栏中点击“设置”进行“模型”设置。在弹出的对话框中选择模型“阿尔法”，保存退出。在预览区的机器人将变成与实际机器人一致。

This software is compatible with many types of robot models. Open the Game Robot Editor. If you find that your actual robot model is inconsistent with the one in the preview area, click "Settings" in the menu bar to set up the "Model". Select the model type "Alpha" in the pop-up box, save, and exit. The robot model in the preview area will be consistent with your real robot model.



点击上方方框会出现右图的选项，选择所需模型。

Click "Model" and the box on the right will appear. Then, select the correct model and press "Save".

动作函数区

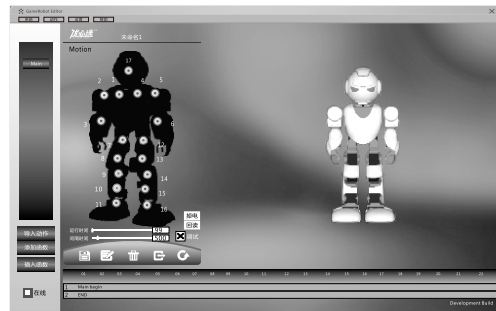
Action function area

动作函数：用一个名称代替一个动作表以便编辑。动作函数区列出所有函数名。该栏还包括导入文件、添加函数、和插入函数3个功能按钮，“ 在线”是软件与机器人连接的开关。

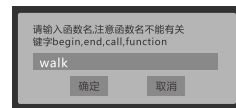
Action function: use a name instead of an action list to edit. List all the function names in the action function area. The function area includes three function buttons: Import File, Add Function, and Insert Function. " On Line" is a switch to connect Alpha to the software.

一套动作可以单独命名为一个函数，本软件中已经集成了常用动作库函数，如前进、后退等动作库函数。在动作中使用函数，首先点击左下角添加函数按钮。如右图所示。

A set of actions can be named as one function. A library of frequently used action functions has been integrated into the software (e.g. "Forward" and "Backward" functions). If you wish to use these functions, first click "Add" on the bottom left corner.



在弹出的对话框中输入函数名如walk，如下图所示。Enter the name of the function (e.g. "Walk") in the pop-up box as shown below.



按“确定”后函数名将显示在“Main”函数列表中。Click "OK", and the function will be displayed in the "Main" function list.

函数调用 Call the function

如需调用函数，在函数列表中选择该函数，然后在动作帧栏中选择要插入的位置，最后单击“插入函数”，被选函数将被插入到指定动作帧栏中。

When calling the function, select the function from the function list, and choose the position in the action frame column to insert the function. Click "Insert", and the selected function will be inserted into the specified action frame.

如果一个动作程序中有多个函数调用，当双击某一函数名可以在动作帧区定位到该函数被调用的位置。

If an action program needs to call several functions, double-click the function name. Then, you can position this function in the positioning frame.

动作库里有已经编好的基本动作,如前进、后退、左转、右转等。用户在调用函数时可以自由组合所需的一套动作。

The action library contains basic action movements that have already been configured, such as forward, backward, turn left, turn right, etc.

When calling the function, you can freely combine different sets of actions as needed.

姿态编辑区

Pose editing area





姿态编辑区介绍

Introduction of pose editing area

该编辑区主要是编辑当前机器人动作姿态。

在该区的机器人上有含编号的机器人关节，分别对应实际的机器人的关节，可以按照箭头方向操作机器人的关节转角值或者直接输入关节转角值，在机器人预览区机器人会根据关节转角做相应的变化。

单击“[撞电]”按钮时，机器人关节将不带电，在不超越关节机械限制的情况下可以用手自由的扳动，用户可以将机器人摆成各种不同的姿势。

当编辑好一系列动作后，可以使用“保存”将该动作序列保存在电脑上；需要对某一个动作帧修改时，先选择该帧动作，点击“编辑”按钮进行编辑；如果需要删除该帧动作，选择该帧后，点击“删除”按钮直接删除；如果需要再添加一帧动作，先编辑好该动作，然后选择要添加的动作的位置，点击“添加”按钮，该动作将添加到指定动作的后面。

动作时间: 完成某个动作所需时间，建议100ms以上。





间隔时间: 两个动作之间的间隔时间。

“重置”: 恢复到默认动作。

The editing area is for editing Alpha's current pose.

In this area, the robot's joints are numbered to correspond respectively to Alpha's actual joints. Use the arrows to change the joint angle value or input a joint angle value, and the robot will respond to the pose change in the preview area according to the value.

Click the power off button "[OFF]", and Alpha's joints will no longer be active. Now, he can be moved manually as long you do not exceed his joint angle limits. Alpha can be placed into a variety of different poses.

When finished editing a series of actions, click "Save" () to store the action sequences in the computer. If you need to change a certain action frame, select the frame action, and click "Edit" () to edit. If you need to remove a frame, click "Delete" (). If you need to add a frame, first edit the action. Then, select the position to add the action and click "Add" (). The action will be added to the specified action.

Action running time: time required to complete an action. Recommended running time is more than 100 ms.

Interval: the time interval between two actions.

"Reset" (): return to the default action.

动作编辑

Action editing

动作编辑有2种方式，一种是针对每个关节进行编辑，一种是回读方式编辑。建议进行复杂动作编辑时用回读方式编辑，对简单动作可以针对每个关节进行逐一编辑（实际操作请参考九、实例演示）。


There are two ways of action editing. One is to edit each joint one by one. The other is to edit by reading back. We recommend editing by reading back for complex actions and using a single joint edit for editing simple actions (for the actual operation, please refer to Chapter IX. Demos).


对每个关节进行逐一编辑

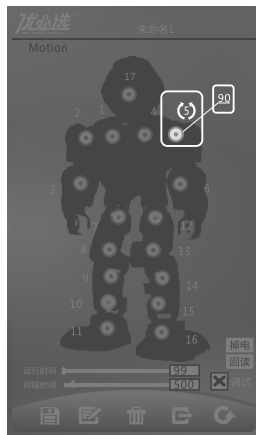
Editing joints one by one

在左边机器人姿态编辑窗口，按箭头方向顺时针或逆时针调节每个关节的旋转方向，可以看到右边机器人姿态预览窗口的机器人姿态会随着变化，如果此时实际机器人也通过数据线与电脑连接，机器人也会相应的与预览窗口的虚拟机器人姿态保持一致。

In the pose editing area on the left side of the window, when adjusting each joint's rotation direction clockwise or counterclockwise, you can see the pose of the robot in the preview area on the right is changing accordingly. If Alpha is now connected to the computer via a USB cable, he will assume the pose shown in the preview window of his virtual self.

当调节到满意的动作位置后，在动作帧窗口选择要添加的位置，点击添加按钮.


When satisfied with adjustments to his action, select the position in the action frame window and click "Add" .




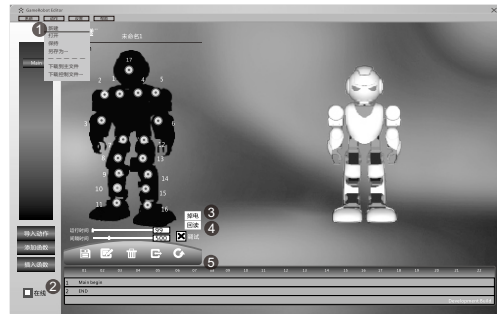
按箭头方向调节或者直接输入关节转角值

使用回读功能编辑动作

Use read back to edit action

打开动作编辑软件Game Robot Editor如下图，在“动作”下拉菜单中选择“新建”开始动作编辑。在“动作帧”栏点击要加入的位置2；然后单击“掉电”按钮3；此时机器人关节可以自由扳动，将机器人扳到希望的姿势；单击“回读”按钮4；再按“添加”添加一行动作序列，该动作序列被添加到指定的动作帧后。单击刚才添加的动作序列，右边的预览虚拟机器人将会显示所希望的姿态。双击则实体机器人会执行此操作，如下图所示。

Open the action editing software Game Robot Editor as shown below. Select "New" in the "Action" drop-down menu to start the action editor. Choose "Position 2" in the "Action Frame" bar. Then, click "Off" (button "3") to power off Alpha. Now, Alpha can move. Then, maneuver Alpha's joint to the required pose. Click "Read back" (button "4"). Then, press "Add" () to add a set of action sequences, which are added to the rear of the designated action frame. Click the action sequence that you just added. The virtual robot on the right will display the desired pose. By double-clicking, your Alpha will perform the action as shown below.



如果觉得部分关节不满意，可以在左边的编辑窗口重新编辑该关节后保存。

每一个动作帧对应机器人的一种姿态，机器人连续连贯的执行多种姿态就会形成一套动作。If you are not satisfied with any edited joint, you can re-edit the joint on the left side of the window and then save it.


Each action frame corresponds to a certain robot pose. When Alpha performs a sequence of various poses continuously, a set of coherent actions will be formed.


预览图区介绍
Preview area

预览当前动作姿态。双击动作帧行内的任意一帧动作，虚拟机器人将显示该帧的机器人动作状态，按住鼠标中键可以对模型进行移动，右键可以旋转模型。

Preview current action: double-click any action in an action frame. The virtual robot model will display its static action state. Hold down the middle button of the mouse to move the model and use the right button to rotate the model.

动作帧区介绍
Action frame area

该栏显示机器人各个关节伺服舵机的转角位置，当要添加动作帧时先要选择一行动作帧，按“”时会自动在下一行添加。

This column shows the angular position of each servo joint. When adding an action frame, first select a sequence of actions and then click "Add" () to automatically add the next line.

! 注意
Note

在带电状态下不可强行掰动机器人关节，伺服舵机的转角范围为 -90° ~ 90° ，由于结构限制禁止将伺服舵机转到超过结构限制的角度，否则会损坏伺服舵机。

Do not move Alpha's joint with force when he is powered on. The range of the servo angle is -90° to 90° . Due to structural constraints, do not exceed the limit of servo angle, for such actions will damage the servo actuators.

程序下载
Downloading

编辑完动作以后，必须先保存，然后在“动作”下拉菜单中选择“下载到主文件”命令下载，下载完成后会弹出“下载完成”对话框。

After editing an action, you must first save it. Then, select "Download to Main File" in the "Action" drop-down menu. "Download Completed" will pop up when the download is complete.

程序下载完成后，先关闭电源开关，拔下下载线。重新启动机器人，按下“复位/运行”键，机器人进入复位状态，再次按下该键，机器人运行刚才下载的程序。

When the download is complete, first turn off the power. Then, unplug the download USB cable. To restart, press "Reset/Start", and Alpha will enter reset mode. Next, press the button again, and Alpha will run the program that was just downloaded.

! 注意
Note

按复位/运行键前注意，小心机器人夹手，请远离人的脸和眼睛，小心机器人动作碰到人。另外，运行时最好不要放在边缘处，谨防机器人从桌面等高处跌落。

Before pressing "Reset/Start", use caution as to avoid being pinched by Alpha's joints. Please keep your face and eyes away from him and avoid personal injury when executing his actions. In addition, do not place Alpha on any high surface edges (such as the top of a desk) to prevent him from falling down and being damaged.

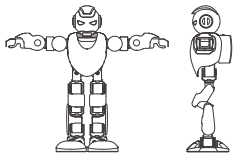
07 动作校准 Action Calibration

由于新装伺服舵机之间存在一定的差异，各个伺服舵机的90度复位都难以保证绝对的标准。所以软件中提供了更方便的伺服舵机校准功能：“动作校准”。利用该功能，即使安装的伺服舵机套件有一定的误差，也可使用动作库里的标准动作。

As certain differences exist between newly installed servos, the 90° reset position of each servo is hard to guarantee as the absolute standard. Therefore, the software provides a convenient calibration function for the servo actuator called "Action Calibration". With this function, even if errors appear in the servo installation, standard actions can still be used from the action library.

开机启动 拨动开关后，按一下运行键，使机器人运行默认的初始动作表。

Powering on With the main power switched on, press "Reset/Start" and Alpha will then run through his initial default actions.



! 注意 Note

如果所有伺服舵机通电后处于90°位置，机器人的初始位置没有达到或无限接近以上示意图，意味着你在某个地方装偏了，在这种情况下，要使用标准动作库，就要使用舵机校准的功能。

When all servos are in their 90° position upon powering on, if Alpha's initial position still does not reach or approach close to the above diagram, then it means that something has loaded incorrect. In this case, the calibration function must be used in order to use the standard actions in the action library.

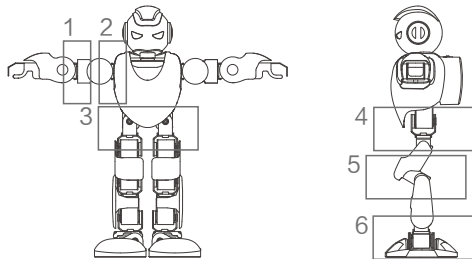
认识机器人默认动作标准 Understanding standard default actions

当机器执行默认动作后，标准的机器人应该要符合以下几点：

- 1: 前臂保持整体水平，不出现向上或下的方向；
- 2: 手臂保持整体水平，不出现向上或下的方向；
- 3: 腰部整体保持竖直，两腿不出现向内或外摆；
- 4: 胯部保持对齐，左右膝盖护壳不出现明显偏差；
- 5: 膝盖保持对齐，护腿整体与胯部关节同一直线竖直向下，左右护腿不出现明显偏差；
- 6: 踝关节保持对齐，脚底板处水平位置，左右脚底板不出现明显偏差。


When Alpha performs default actions, his default pose should conform to the following standards:


1. His forearms are kept horizontal, not upward or downward;
2. His arms are kept horizontal, not upward or downward;
3. His waist is fully kept upright, and his legs do not swing inward or outward;
4. His hips are fully aligned with his left and right knee guards exhibiting no obvious deviation;
5. His knees are aligned, leggings and hip joints are kept downward in a straight line, and left and right legs exhibit no obvious deviation;
6. His ankles are aligned, the soles of the feet are at horizontal level, and the soles of his left and right foot exhibit no obvious deviation.



07 动作校准 Action Calibration

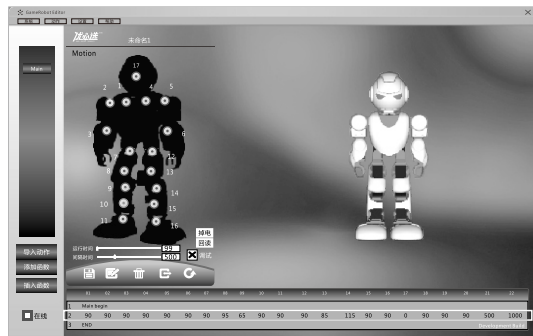
运行机器人软件 Run the software

运行机器人软件后，先选择动作帧首行再按右图片里方块提示框的“添加帧键” ，添加默认动作。

After beginning the software, first select the first line of the action frame according to the right picture box message and click "Add Frame" () to add the default action.

添加默认的动作表后，然后点击该行，使虚拟图形运转至默认位置,如下图：

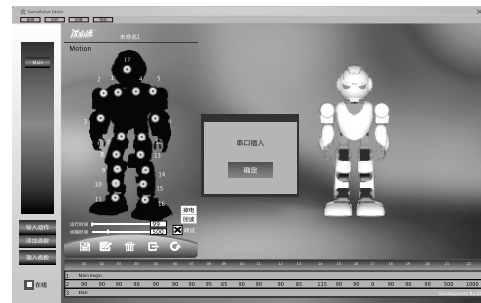
After adding the default action list, click on a row to make the virtual graphics return to their default position as shown below:



机器人连接电脑软件 Connect Alpha to software

插入机器人的数据线后，软件里会有如下图的提示“串口插入”，然后按下确定键。

When the USB cable is inserted into Alpha, a pop-up will appear saying "Serial Port Inserted". Press "OK".



发送指令到机器人 Send commands to Alpha

双击刚才添加的默认动作表（方块提示框），使机器人激活默认动作表,左手扶机器人，以防机器人跌倒。注意手扶的位置，前章已有介绍。

Double-click the default action list just added (as shown in the block boxes highlighted below) to enable the robot to activate the default action list. Meanwhile, hold Alpha with your left hand to prevent him from falling. Use caution when placing your hand around Alpha as discussed in the previous chapter.

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22
1	Main begin																					
2	90	90	90	90	90	90	90	95	65	90	90	85	115	90	90	0	90	90	90	500	1000	
3	END																					

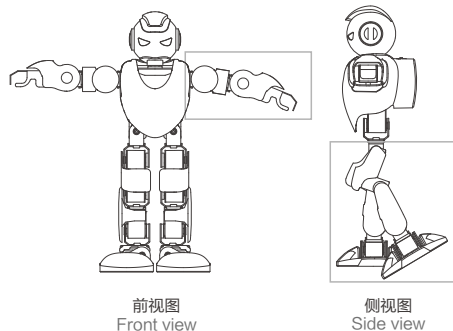
Development Build

07 动作校准 Action Calibration

判断机器人的舵机关节偏差 Analyzing deviation in Alpha's servo joints

假设机器人执行命令后，机器人出现以下误差：

When executing commands, imagine that Alpha has the following errors:

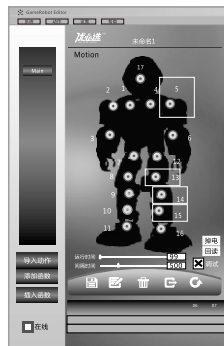


跟标准的默认动作对排查，可以看出图片里的机器人左手，左脚均出现偏差。

通过机器人软件的伺服舵机地图，可以看出需要调节的舵机关节可能有以下几个：5号舵机，13号舵机，14号舵机，15号舵机。

Compared with standard default actions, it can be seen that his left hand and left foot obviously deviate as shown in the picture.

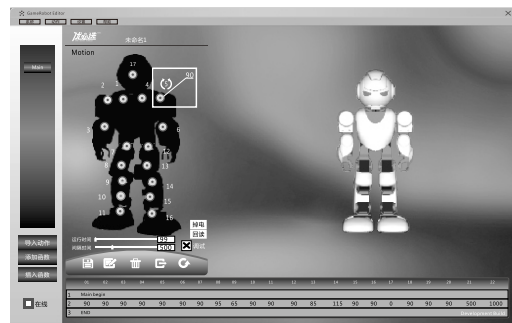
Referring to the servo map, the following servo joints need to be adjusted: No.5, No.13, No.14, and No.15.



微调舵机关节偏差 Fine-tuning deviation in servo joints

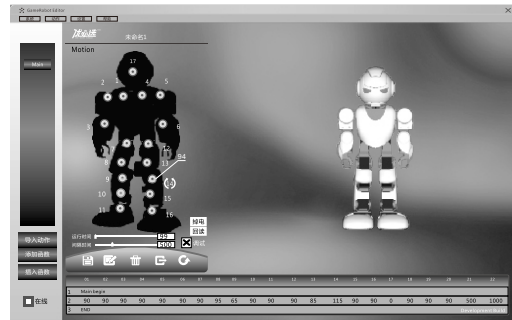
微调可能偏差的舵机(方块提示框内按钮)，直至每个舵机关节都符合机器人的默认标准。

Finely tune servos with possible deviation (the button in the outlined box) until each servo joint is in line with those of Alpha's default standards.



微调校准每个关节后，按下图片里方块框提示框的“添加帧键”添加新的动作帧。

When finished fine-tuning and calibrating each joint, click "Add" from the outlined box in the picture to add a new action frame.



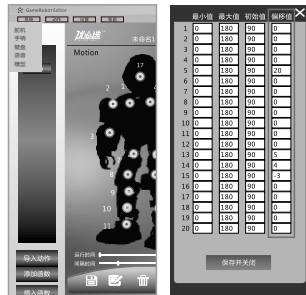
07 动作校准 Action Calibration

判断机器人的舵机关节偏差 Analyzing deviation in Alpha's servo joints

观察两个动作帧里每列的差值，其差值就是该机器人的校准偏置值。
偏差值的计算：用新添加的动作帧，减去默认的动作帧，其结果大于零，则为正偏差，结果小于零则为负偏差。

Observe the difference between the two actions in the action frame of each column. The difference is Alpha's deviation value for calibration.
Calculation of the deviation value: subtract the default action frame from the newly added action frame. If the result is greater than zero, then it is a positive deviation; if the result is less than zero, then it is a negative deviation.

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22
1	Main begin																					
2	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	0	90	90	90	90	500	500
3	90	90	90	90	110	90	90	90	90	90	90	90	95	94	87	90	0	90	90	90	500	500
4	END																					



设置偏差值 Deviation settings

点击菜单栏的设置键，弹出下拉菜单，选择舵机选项，进入舵机设置界面。把刚才计算出的偏差值填入舵机设置的偏移值框内（正偏差不添加符号，负偏差则添加符号）。

然后按保存并关闭按钮，退出设置舵机菜单，并把新添加的动作帧删去。Select "Motor" from the "Settings" drop-down menu and enter the "Motor Settings Interface".

Enter the value of deviation just calculated in the offset value box (no symbols before positive deviation and a minus sign is added before a negative deviation).

Then, click "Save", and "Close". Exit "Motor" from the "Settings" drop-down menu, and delete the newly added action frame.

08 实例演示 Demos

动作例子:抬起左手 Action Demo: Lift Alpha's Left Hand

启动机器人软件Game Robot Editor, 使用专用数据线正常连接电脑与机器人。软件会提示“串口插入”，选择确认键。此时，机器人与软件已经连接。

把机器人的开关拨到“On”再按下复位键，让机器人复位，此时用户可以在姿态编辑区通过关节控制机器人。（如出现无法控制机器人，可以查看十一、常见问题2）

Start the Game Robot Editor. Connect your computer to Alpha using the specialized USB cable. When the software displays the message "Serial Port Inserted", click "OK". Now, Alpha and the software are connected.

Turn Alpha "On" and then press "Reset/Start" to reset Alpha. Alpha is now being controlled through a servo joint control in the "Pose Editing Area". (If you are unable to control Alpha, please refer to Chapter XI, Troubleshooting, Question 2)

在软件上选择“Main begin”开始行，如下图
Select the starting line "Start" as shown in the following diagram:

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22
1	Main begin																					
2	END																					

按添加键 ，添加机器人默认动作
Click "Add Frame" () and add the default action.

接下来有两种方法可以编辑姿态：
Then, there are two methods to edit Alpha's pose:

08 实例演示 Demos

一、直接使用姿态编辑区

1. Use the pose-editing area directly

观察机器人，得知控制机器人左手抬手关节为5号舵机，抬手的方向为逆时针，鼠标左键按住5号舵机旁的逆时针箭头调节关节角度至150°，或直接输入转角值150°。

On Alpha, notice that the servo joint responsible for lifting his left hand is No. 5 and that the lifting direction is counterclockwise.

Click the arrow next to No. 5 with the left mouse button to adjust the joint angle to 150° or directly enter the angle value 150°.

二、使用回读功能编辑

2. Use the read-back function

双击5号关节的光圈，激活单个关节回读功能，或者单击动作函数区里的“回读”按钮，激活全身回读功能。激活回读功能后，此刻可以扳动机器人的关节，把机器人左手抬高，完成后再双击光圈或点编辑区里的“回读”，就可以是把调节完的姿态回读到预览图上。

Double-click the glowing dot that appears for No. 5 to activate the read-back function for a single joint. Alternatively, click "Back" in the action function zone to activate the whole read-back function. When the read-back function is activated, Alpha's joints can be maneuvered. Lift Alpha's left hand. Then, double-click the glowing dot or click "Back". This allows the edited pose to be read back in the preview area.



完成后，调节时间参数，运行时间与间隔时间各设1000ms，
When complete, adjust the time parameters. Then, set the operation time and the interval time as 1000 ms each,





再按添加键，添加该动作至主动作表中。

Next, click "Add". This will add the action to the main action list.

Order	Angle	Time	Interval	...
1	90	50	90	90
2	90	50	90	90
3	90	50	90	90
4	90	50	90	90
5	90	50	90	90
6	90	50	90	90
7	90	50	90	90
8	90	50	90	90
9	90	50	90	90
10	90	50	90	90
11	90	50	90	90
12	90	50	90	90
13	90	50	90	90
14	90	50	90	90
15	90	50	90	90
16	90	50	90	90
17	90	50	90	90
18	90	50	90	90
19	90	50	90	90
20	90	50	90	90
21	90	50	90	90
22	90	50	90	90
23	90	50	90	90
24	90	50	90	90
25	90	50	90	90
26	90	50	90	90
27	90	50	90	90
28	90	50	90	90
29	90	50	90	90
30	90	50	90	90
31	90	50	90	90
32	90	50	90	90
33	90	50	90	90
34	90	50	90	90
35	90	50	90	90
36	90	50	90	90
37	90	50	90	90
38	90	50	90	90
39	90	50	90	90
40	90	50	90	90
41	90	50	90	90
42	90	50	90	90
43	90	50	90	90
44	90	50	90	90
45	90	50	90	90
46	90	50	90	90
47	90	50	90	90
48	90	50	90	90
49	90	50	90	90
50	90	50	90	90

假如觉得手抬的不够高，可以点击该行，然后把5号关节的角度设置为170度，然后按修改键  修改动作，当你觉得不想抬左手，可以选择抬左手的动作行，然后按删除键 ，就可以把刚才选择的动作行删除，同样按照上面的方法，可以调节右手向上抬的动作表，然后添加到动作帧区。调动作时防止机器人的两个动作之间发生碰撞。

If the hand has not lifted high enough, then click on the row, and set No. 5's angle value to 170°. Then, click "Edit" () to make changes to the action. When you do not feel like lifting Alpha's left hand, choose the row for lifting the left hand. After that, click "Delete" (). The chosen action will then be deleted. Likewise, the right hand can also be edited in the same way as the above-mentioned method. Add the action list to the action frame area. Collision between two actions should be avoided when adjusting a series of actions.

调完你自己想要的动作后，可以保存文件，若使用手柄控制机器人，该动作表须另存到机器人的安装目录的默认路径为 (X:\Program Files\优必选机器人) tmp文件里，命名为a，以备使用，然后通过数据线下载到机器人上。

After you are finished editing, save the file. If using a gamepad to control Alpha, then the action list must be saved as a TMP file in the default installation directory (X:\Program Files\ UB Tech robot) with the name "a". Use a USB cable to download the file to the robot.

08 实例演示 Demos

设置手柄控制设置表 Setting command list for gamepad

对照手柄控制表, 假如要手柄5号键控制抬左手, 可以选择手柄设置里的5号按钮, 再选择动作a, 然后保存, 再按下载, 就可以通过数据线下载到机器人上, 重启机器人后, 再使用手柄, 方法一:按下5号键就能激活刚才的a动作。方法二:手柄上的1/3号键可以通过上下翻选择所需的页数, 如刚才定义的5号键在第10页, 只需按下翻键10次再按2号确认键即可执行a动作。In terms of the command list for the gamepad, if you wish to use the button "5" on the gamepad to lift the left hand, select the button "5" on the list of gamepad settings, and then select action "a". Click "Save" and "Download". The file is then downloaded to Alpha through a USB cable. After that, restart him to use the gamepad.
Method 1: Press the button "5" to activate the "a" action that was just edited; or
Method 2: Press the button "1" or "3" on the gamepad, which corresponds to "Up" and "Down", respectively, to select the page that was just defined. Button "5" is on located on P10. Then, simply press "Up" 10 times. Continue by pressing button "2", which is set as the "OK" button, to execute the "a" action.



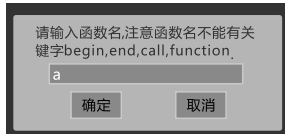
! 备注 Note

第_页表示上下翻所对应的页数, 默认从第一页开始,第十四页对应的是13号键默认为复位、第18页对应的是唤醒键, 不可以自定义。
No. _ page indicates the corresponding page when pushing "Up" and "Down"; the default page is P1; P14 is set as button "13", which is the "Reset" button; and P18 is set as the "Wake-up" button. These are default buttons and cannot be modified.

函数的应用 Apply function

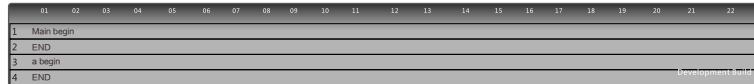
添加函数 Add function

新建动作表后, 按下添加函数按钮, 然后命名子函数, 例如可以命名a
When a new action list is set up, press the "Add Function" button and name the sub function (e.g. "a").



编辑子函数 Editing sub functions

首先双击函数区的子函数a, 把a添加到动作帧区, 如下图, 可以看到 abegin END, 点击 abegin到绿色, 进行子函数a 的动作编辑。根据上面介绍, 可以把抬左手的动作添加到函数a中。编辑完成后, 子函数a 就可以代替抬左手的动作。
Double-click the sub function "a" in the function zone and add "a" to the action frame. As shown in the following figure, we can see "abegin END". Click "abegin" and it instantly becomes green. Now, edit the sub function "a". Thus, the action for lifting the left hand can be added to the function "a", and the sub function "a" is now the action for lifting the left hand.



快速定位 Rapid positioning

当你新建太多的子函数时, 可以双击左侧函数表里的某个函数的按钮 (如a), 动作帧区会快速定位到此函数在动作帧区的位置, 以便修改此子函数。
When you create many new sub functions, you can double-click the button of a sub function in the function table on the left (such as "a"). The action frame will rapidly locate this function in the action frame area in order to modify the sub function.

删除函数 Delete function

当你新建的子函数想删除时, 可以双击函数区的子函数, 在动作帧区快速定位此子函数, 选择子函数的begin选项按删除键, 就可以把此函数删除掉。
When you wish to delete a newly set sub function, double-click the sub function in the function area to rapidly locate this function in the action frame area. Then, select "Begin" in the sub function. Click "Delete" to delete this function.

08 实例演示 Demos

再新建一个子函数，然后命名为b，按照上面同样方法，把编辑好的抬右手的动作添加到函数b中。

Set a new sub function named "b" following the above method. Then, add the edited action for lifting the right hand to function "b".

编辑主函数 Edit the main function

编辑完子函数之后就可以编辑主动作表，首先选择动作帧区的表头Main begin，然后在动作函数区中选择a函数（抬左手），按下面的插入函数，就可以把子函数a添加进主动作表中，在动作帧区中选择"Call a"行，左边函数区里选择子函数b，按下插入函数，就可以把b函数插入到a函数的下面。保存文件，再通过数据线下载动作表到机器人身上，主动作表可以先执行函数a（抬左手），在执行函数b（抬右手）。

After editing the sub function, edit the main action list. First, select the header "Start" in the action frame area. Then, select function "a", which is the function for lifting the left hand, in the action function area. Click "Insert Function" below to add the sub function "a" to the main action list. Next, select the "Call a" line in the action frame area. After that, select function "b" in the function area on the left. Click "Insert Function" to insert function "b" below function "a". Save the file, and download the action list to Alpha through a USB cable. Function "a" (lift left hand) is executed first, followed by function "b" (lift right hand).

文件存储位置 File location

action: 存放机器人动作表的文件夹。

configs: 存放机器人配置的文件夹。

music: 存放机器人mp3的文件夹(mp3的文件名需与相关联的动作表同名), SD卡需从机器人拔出后通过读卡器在电脑上下载MP3文件。

例如: 按手柄1号键控制a动作, 相对于mp3的文件也必须命名为a.mp3。

Action: storage of action list folder.

Configs: storage of Alpha's configuration folder.

Music: storage of Alpha's MP3 folder (MP3 file name shall be the same as the associated action list name),

Download the MP3 files to a SD card, which should be ejected from Alpha, to the computer via a card reader.

For example, when pressing the button "1" on the gamepad to control action "a", the corresponding MP3 file must be named "a.mp3".



action



configs



music

09 快捷键列表 List of Shortcut Keys

Alpha机器人操作说明

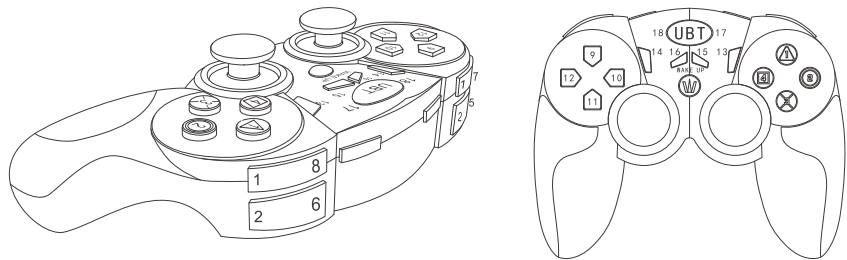
Quick Guide to Operate Alpha

- 一、打开开关，按一下复位键。让机器人进入复位状态。
- 二、拿到遥控器后，中间的UBT键为遥控器激活键，长按5秒，激活遥控器。
- 三、按下4号键，清除页数，通过1号键或3号键翻页选择想要执行的动作，选好后按2号键执行动作。每一页对应一个动作程序。
- 四、如果想暂停动作，可以按4号键停止动作。13号键为复位快捷键，按13号键进行复位。
- 五、再按一次4号键可以清除页数。可重新开始选择页数。

1. Switch power to "On", and press "Reset/Start", Alpha is in reset position.
2. Using the gamepad. The "UBT" button in the middle of the gamepad is the activation key, long press it for 5 seconds, to activate the gamepad.
3. Press Button 4, which is the key to remove pages; Press Button 1 or 3 to choose action, then 1.
4. press Button 2 to confirm your selection. Each page corresponds to an action program. Press Button 4 to stop action. Press Button 13 to reset.
5. Press Button 4 again to clear pages, then choose page.eet are at horizontal level, and the soles of his left and right foot exhibit no obvious deviation.

手柄对应按键说明

Description of corresponding keys



动作列表

List of Shortcut Keys

翻页次数 Scrolling Times	对应演示程序 Corresponding Demonstration Program
1	前进 Forward
2	快速左移 Fast Shift Left
3	后退 Backward
4	快速右移 Fast Shift Right

5	自我介绍 Self Introduction
6	右出拳 Right Hand
7	木马屠城记 (故事) Helen of Troy (Story)
8	左出拳 Left Hand
9	左移 Move Left
10	江南Style(舞蹈) Gangnam Style (Dance)
11	小苹果 (舞蹈) My Little Apple
12	右转 Turn Right
13	waka waka(舞蹈) Waka Waka(Dance)
14	(空) (Empty)
15	俯卧撑 Push-up
16	后倒下翻身 Backward Somersault
17	前倒下翻身 Forward Somersault
18	初始化 Initialization
19	刻舟求剑 (故事) Carve on gunwale on a moving boat (Story)
20	Sorry Sorry(舞蹈) Sorry Sorry(Dance)

1: 控制软件不能正常运行?

答: a、未安装软件的驱动环境, 打开光盘重新安装软件及软件的.net framework 3.5驱动环境。
b、电脑系统有错误, 重新启动电脑。

Problem 1. The control software does not run normally.

Reason 1. The software-driven environment is not installed properly. Please insert CD to reinstall software and software-driven environment .NET Framework 3.5.

Reason 2. There is a computer system error. Please restart your computer.

2: 启动机器人后, 不能与电脑正常连接?

答: a、缺少机器人CP210X的驱动, 打开光盘重新安装合适的驱动程序。
b、机器人的下载线接口接触不良, 重新接插或换USB数据线。

Problem 2: When starting Alpha, the connection to the computer is abnormal.

Reason 1. Alpha is missing a CP210X driver. Please insert CD to re-install the appropriate driver.

Reason 2. Alpha's download cable interface is poorly connected. Please re-insert or change the USB cable.

3: 机器人启动后不能复位?

答: a、电池电压不足, 请充电。
b、机器人没有下载复位程序。
c、个别舵机线有松动或出现短路现象, 检测舵机线有无接好或磨损。

Problem 3: Alpha cannot reset after being started.

Reason 2. Alpha was not downloaded with the reset program.

Reason 3. Some of the servo cables are loose or have short-circuited. Please check whether servo cables are properly connected or still functional.

4: 机器人开机复位后, 有个别关节不能工作?

答: a、个别舵机线有松动或出现短路现象, 检测舵机线有无接好或磨损。
Problem 4. When the robot is reset, some of the joints cannot work?

Reason 1. Some of servo wires are loose or short-circuit, check whether the servo cables are properly connected or still functional.

5: 机器人连接电脑后, 不能控制与下载程序?

答: a、机器人的下载线接口接触不良, 重新接插或重新换USB数据线。
b、机器人程序崩溃, 重新启动后再下载。
c、电池电压不足, 请充电。

Problem 5. When Alpha is connected to a computer, he cannot be controlled or cannot download programs.

Reason 1. Alpha's download cable interface is poorly connected. Please re-insert or replace the USB cable.

Reason 2. Alpha's program has crashed. Please restart the robot and download again.

Reason 3. The battery voltage is low. Please charge it.

6: 机器人下载程序后, 不能正常工作?

答: a、电池电压不足, 请充电。
b、个别舵机线有松动或出现短路现象, 检测舵机线有无接好或磨损。
c、程序语法问题。

Problem 6. After downloading a program, Alpha does not work properly.

Reason 1. The battery voltage is low. Please charge it.

Reason 2. Some of servo cables are loose or have short-circuited. Check whether the servo cables are properly connected or still functional.

Reason 3. There is a problem with the program's syntax.

7: 手柄控制不了机器人?

答: a、手柄电池不足, 更换电池。
b、手柄进入休眠, 长按任意键以启动手柄。

Problem 7. The gamepad cannot control the robot.

Reason 1. Battery is running out. Please replace the battery.

Reason 2. The gamepad is in sleeping mode, Press any key to start the gamepad.

8: 无线下载器不能与机器人连接?

答: a、无线下载器与电脑接触不了, 发现不了端口。

b、无线下载器与机器人距离过远, 不能响应。

Problem 8. The wireless module cannot be connected with the robot.

Reason 1. The wireless module download cannot connect with the computer and cannot find the port.

Reason 2. The distance between the wireless module and Alpha is too far to communicate.

9: 机器人舞蹈不稳定?

答: a、伺服舵机关节未设置偏移值, 具体如何设置偏移值请查看章节八、动作校准。

b、电量不够。

c、伺服舵机已经老化, 需要更换。伺服舵机属于消耗品, 在长时间的磨损下, 齿轮之间的间隙会加大, 达到寿命时需要更换。

Problem 9. Alpha's dance is unstable.

Reason 1. The offset value of the servo joints was not set. Please refer to "Chapter VIII. Action Calibration" on how to set the offset value.

Reason 2. There is not enough power.

Reason 3. The servo is aging and needs to be replaced. Servos are consumables and are worn down over time. The gap between gears will increase with age. Therefore, the servos need to be replaced when it is time.

10: 开机后机器人无法运行

答: a、SD卡接触不良。

b、伺服舵机连接线有问题。

Problem 10. The robot cannot run when started.

Reason 1. SD card is experiencing contact failure.

Reason 2. There is a problem with the servo cables.



Warranty Card 保修卡

用户资料

Customer information

产品型号:

Product model

产品编号:

Product series no.

顾客姓名:

Consumer name

购买日期:

Date of purchase

联系方式:

Contact

保修记录

Customer information

保修日期 Warranty date	故障及处理方法 Description of failure and resolution method	完成日期 Completion date	顾客签名 Consumer signature

全国统一售后服务电话: 0755-83474428

National customer service line: 86-755-83474428



保修条款

Warranty terms

一、购买产品，请认真填写此卡，仔细阅读以下保修条款，以确保产品得到有效保修。

1. 用户在购买产品时认真保管此卡，并请销售商盖章确认。
2. 保修时需同时提供本保修卡。
3. 本保修卡所填资料属实，否则无效。
4. 产品整机保修期为一年(易耗品除外，如何服舵机、电池、连接线)，在保修期内如产品发生故障，属原器件品质不良或生产问题，本公司提供免费维修及部件更换。

二、下列原因造成产品损坏不能正常使用,不在保修范围内。

1. 未按照说明书使用造成的损坏。
2. 一切人为或意外造成的产品损坏。
3. 未经本公司认可的维修,改装或产品封口贴纸破裂者。
4. 产品表面外壳的老化,碰伤或划痕。

三、保修期满后，本公司仍提供维修服务，但需用户支付相应费用。

I. Please carefully fill out this card when purchasing Alpha. Read the following warranty terms carefully to ensure the product warranty is effective.

1. Please keep this card in a safe place when purchasing products, and ask for the seller's stamp for confirmation.
2. The warranty card is required when requesting service repairs.
3. Please ensure that the warranty card information is true; otherwise, it is invalid.
4. Product warranty period is one year (except for consumables such as servo, battery, and cable). Consumers have the right to receive free repair service within one year from the purchase date in case of product failure. However, if the product failure occurs due to a natural disaster or by the fault of the consumer, free repair service will not apply even within the one year and the consumer will be charged an appropriate repair service fee.

II. Consumers will be charged for the services rendered even within the one-year period under the following circumstances.

1. Failure caused by not following product instructions.
2. Failure due to mishandling by the consumer including, but not limited to:
 - Failure due to erratic power or faulty power supply;
 - Failure due to foreign matter inside the product;
 - Failure or damage due to external shock or from being dropped;
 - Damage or loose parts due to disassembly by the consumer;
 - External damage or deformity caused by corrosive liquid, paints, thinners, benzene, and etc.Any other failure caused by an external event or mishandling by the consumer and not by the defect in the product;
- Failure due to a natural disaster;
- Exchange of normal consumable parts, such as the battery.
3. Failure caused by service not approved by the company, product modification, or broken product seal.
4. Aging, dents, or scratches on the surface of the product.

III. When the warranty period expires, the Company will still provide repair service, subject to an appropriate fee.

