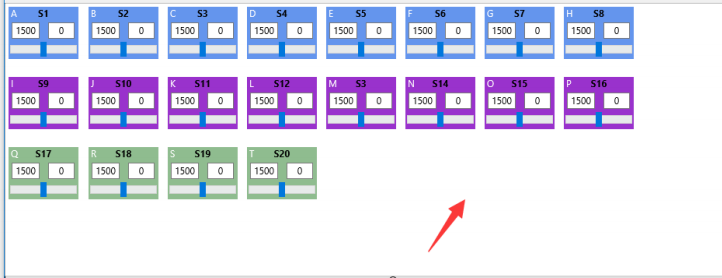
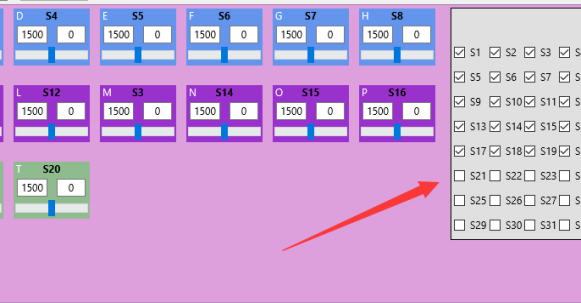
#### Brief description of the software

1 ， Adjusting the servo layout in the software interface



In the middle of the software, double click the computer mouse, then the color of the blank space will change to color, at the same time will appear 32 Tick box for 32 servos



Once the background has changed color, you can move the position of the servos, and the checkboxes on the right side of the software can show or hide the corresponding servos.

The checkbox on the right side of the software allows you to show or hide the corresponding servos.

Once adjusted, double click on the blank space to exit edit mode.

There are several common layouts in the context menu.



Right-click menu description:

Set as reference state: it is to set the current debugging state as a reference state (not used by common users, see Article 15 for details).

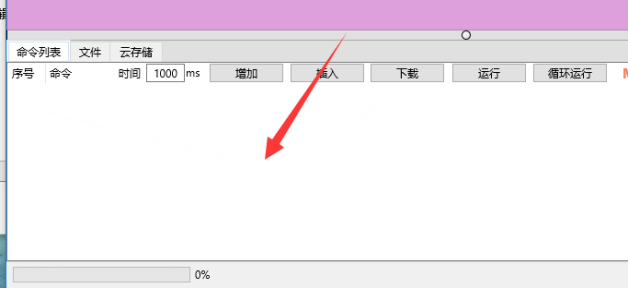
Restore to reference state: it means to restore the reference state set before.

2 ， File association

After the association operation, users can directly double-click to open the edited robot action file (.tox file) of the software, instead of opening the software first and then the file. tox file, instead of opening the software first and then the file.

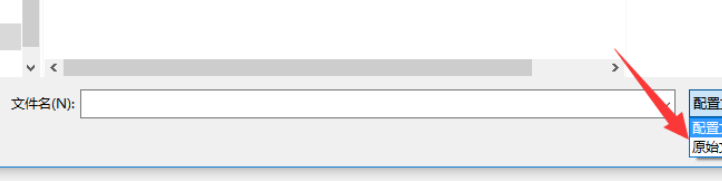
This operation requires administrator privileges, so please right-click to run the software as administrator, and then do the association.

3 ， Importing .txt files from older versions of software



Drag and drop the file into the list below the software with your mouse (must be a full-valued action group file, does not support (must be full-value action group files, relative-value action group files are not supported) (Drag-and-drop may not work on some computers, so please use the next method)

Alternatively, the menu at the top of the software---File---Open---Select File (choose Original File.txt in the lower right corner).



4 ， Save file

At the top of the software, menu, File, Save.

This will save the layout of the servos in the software, and all the commands in the command list below the software

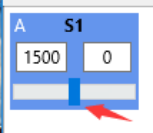
5 ， Editing Action Groups

Connect the servo to the control board, and then connect the servo power supply to the control board (servo power supply must be connected separately, USB cannot be used to power the servo). (the servo power supply must be connected separately, USB can't supply power to the servo)

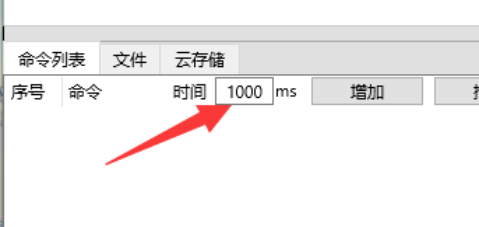
(Servo three wires, orange is the signal line, towards the inside of the control board, brown ground line, towards the outside of the control board) (servo power supply voltage, this please check your own servo parameters, each servo is different, can not ignore this problem, power supply problems have serious consequences.)

Then open the computer software - select the corresponding COM port, if it is a USB interface, the baud rate can be arbitrary, and then then connect to the computer.

Then drag the slide bar of the corresponding offline

 (This is servo S1, marked on the board.）

Adjust the servo to your desired position and set the corresponding time at the bottom of the software.

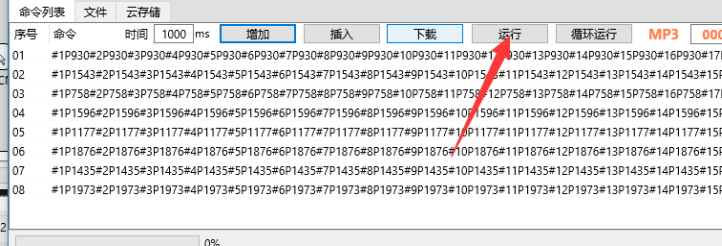


Then click "Add" next to it, it will generate a command for that state, and insert it to the last line of the command list. (A command is similar to a "picture", while an animation is a lot of pictures, played one by one according to the set time, to have an animation effect, this place is also the same, one by one command, according to the time you set, one by one, running, will form a coherent action.）

The above is to adjust the position of one servo, if you need to adjust many servos, the method is the same, you just need to adjust all the servos one by one to the appropriate position, and then set the time, and then click on "Add" once, then you can generate a command containing all the servos.

Then click "Add" once, and you can generate a command which contains all the servos' positions.

6 ， Online debugging of numbered actions



After you have finished editing the action you want, you can run it on your computer to see if you are satisfied with the action you have debugged. If you are satisfied, you can download it to the control board, or save it to your computer (menu at the top of the software, File, Save). If you feel that a certain line is not satisfied, you can select this line, and then drag the slider again to adjust the position of the servo, and then click the "Modify" button, you can modify the position of the servo. If you are not satisfied with a certain line, you can select it, then drag the slider again to adjust the position of the servo, and then click the "Modify" button to modify it to the current state.

7 ， Download Action Sets

Download the many lines of commands you have added to the control board. Downloading has two meanings, downloading and packing.

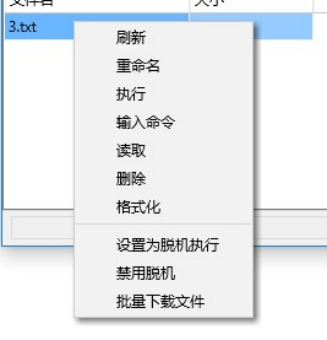
Downloading means downloading to the control panel.

Packing is to pack many lines of commands into one action group.



There will be a prompt number after the download. After downloading, all you need to do is know the number and execute it.

8 ， Where to look at the downloaded file, and other related operations



At the bottom of the software, go to the Documents page.

Then right click on the blank space and select Refresh in the menu will refresh the file list.

You will need to wait a few seconds while it refreshes.

Refreshing also means getting a list of the files inside the control panel.

Other menu descriptions:

Rename, you can modify the name of the file, file suffix .txt Do not modify, just modify the . The number in front of the .

The number indicates the action group number.

Execute, is to execute the action inside this file.

Input commands, you can input other commands, such as the execution of multiple action groups, input #1G #2G #3GC1, such as.

Read, you can read the contents of the file.

Delete, deletes the file.

Format, is to restore the factory settings.

Set to offline execution, is to set this action group to offline execution, offline execution means that the control board will be executed after powering up.

will be executed after powering up, which simply means "boot execution”

Disable Offline , is to disable the offline execution of the previous settings.

Batch Download File , available only for batch users, only some control panel versions have this feature.

9 ， Execute the action group after the download

In the file list, select the file, then right-click it, and then select Execute, and in the pop-up interface, enter the number of times to be executed, ranging from 1 to 999. in the pop-up interface, the range is 1-999 times.

10 ， Setting up offline action groups

In the file list, select the file, then right-click it, and then select Set as Offline Execution, in the pop-up interface, enter the number of times to execute. In the pop-up interface, enter the number of times to be executed, the range is 1-999 times.

After setting, you need to restart the control panel to execute it (because the set action group will run only after the control panel is restarted). (because the set action group will be executed only after the control board is restarted)

11 ， Read file。(Valid for USB connection only)

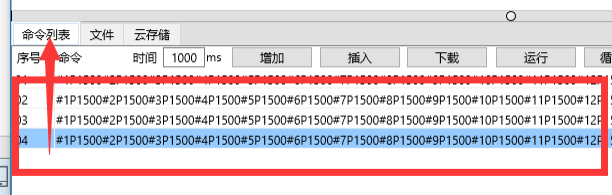
Selecting a file allows you to read out the file that was downloaded in. The time required for reading depends on the length of the action group.

During the reading process, the data is displayed one by one on the right side.

After reading, you can click



That is, the data read out, displayed here, easy to edit again.



12 ， Documentation - Formatting

（Formatting is equivalent to restoring factory settings）

In the file list, right-click - Format. This action deletes all action groups downloaded to the control board. This will delete all action groups downloaded to the control panel and restore the control panel settings to the factory default settings.

13 ， Operation of the MP3 module。（Requires connection of MP3 module）

Connect the cables according to the MP3's instructions.



The box next to MP3 in the picture above is for entering the name of the mp3 file, which must be a 4-digit number. (The instructions for MP3

(the instructions for MP3 are in the book)

Next is the play button, which plays the mp3 file with the filename on the right.

The V button next to it inserts the play command into the last line of the command list.

Next is the Stop button, which stops MP3 playback.

The next V button inserts the stop command into the command list.

14 ， software setup

Menu at the top of the software, Tools, Settings

Delay Send: The range is 10-1000 in milliseconds, which means that when you drag the slider bar of the software, the software will delay the time you set to send the command, this is because some computers have low configuration, dragging the slider bar will be very sensitive, and if you send the data right away, the computer may crash, not to mention that the communication between the computer and the control board is not that fast. The default is 10. The default is 10, if the computer software reacts slowly when you drag the slider, you can set it to a larger value. value.

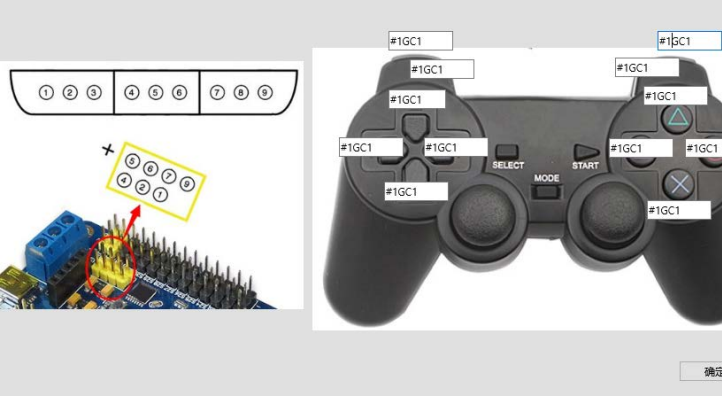
Serial Port 1 Baud Rate Setting, this serial port is the TXD and RXD of the yellow pin next to the USB, set its Baud Rate. Set the baud rate of this serial port.

For serial port 2 baud rate setting, this serial port is the TXD and RXD of the black 5P pin next to the buzzer, set its baud rate. Set the baud rate of TXD and RXD next to the buzzer.

Bottom left of the setup page, Read All Settings, this button will read all settings from the control board. (including handle commands and baud rate)

15 ， handle setting

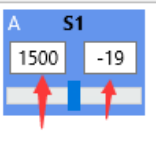
Software Top Menu, Tools, PS2 Handle



For the time being, only 12 keys can be set up, and the input format is #1GC1 (this means execute action group 1 1 time, 1G is action group 1, C1 is execute once). (This means that action group 1 is executed 1 time, 1G is action group 1 and C1 is executed once).

The action group must be the one you downloaded to the control panel, and the file corresponding to 1G is 1.txt.。

16 ， Relative motion of the rudder（Also known as fine-tuning）



The value in the left box is the pulse of the servo pulse signal, ranging from 500 to 2500.

The value in the right box is the relative pulse value, ranging from -2000 to 2000 (this value can be ignored by normal users).

Relative values are valid with respect to the reference state, for example, if you set the robot in a fully standing state as the reference state, if you have N robots, the reference state of these N robots is standing, but the actual angle of the servo is not the same (mounting error), however, when the robot moves, its relative motion is the same, for example, the robot's relative motion of 30 degrees, the 30 degrees is relative, and each robot is the same. This 30 degrees is relative and is the same for every robot. So all you need is the relative value.

The use of relative value is convenient for For mass production users, the specific operation procedure is as follows:

1, with a robot, the robot will be fully standing state set as the reference state, and then debug the robot all the dance, and then will be debugged to save the action file to the computer, as a .tox file format. (At this point, we call (at this time, it is called the master version of the movement)

2, then connect the new robot to the computer, then adjust the new robot to a fully standing state, then reset it to the reference state, and then use the software to open the robot's movement files (.tox file), then the robot's movements will be saved in .tox file format. Then the software will open the motion file (.tox file) of the robot that has been debugged before, and then the debugged motion can be used on the new robot directly.

3, before using the previous action file, each robot must be tuned to the same reference state for the new robot, and set the state to the same reference state. reference state and set that state to the reference state.。

17 ， software upgrade

The software will be modified from time to time, or add new features, or fix bugs.

Please keep yourself using the latest version, the software will automatically detect the upgrade by default, users can also enter the menu on the top of the software, Help, Upgrade, to manually detect the upgrade.

The software will automatically detect the upgrade by default, users can also enter the menu above the software, Help, Upgrade, to manually detect the upgrade.

18 ， About the software in other languages

The top menu of the software, Tools, Language, allows you to select the appropriate language.

**The software is a general-purpose software, some functions on the software may not be able to use on your hardware, this is a normal phenomenon. Please refer to the hardware instructions for details.**

mass produce：



Tox file usage.

The user opens the tox file, all complete with parameters.

To use the tox file in mass production, proceed as follows:

1 , open the tox file.

2 , After opening the file, adjust the robot's state and adjust the robot's reference state. Then set the reference state

3 , then right click and load the file as a relative value, and that's it (meaning you just set the reference state of the robot, then reload the file, but just load his relative value)