



OHandSetting Instruction Manual

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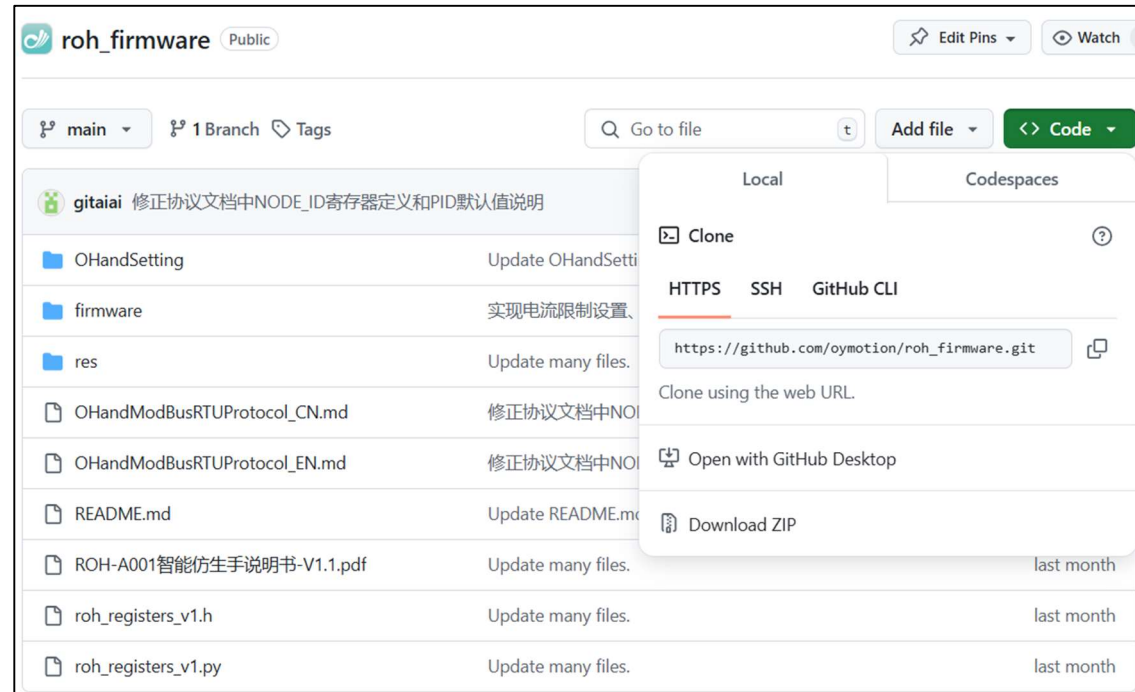
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1. Software Usage and Installation

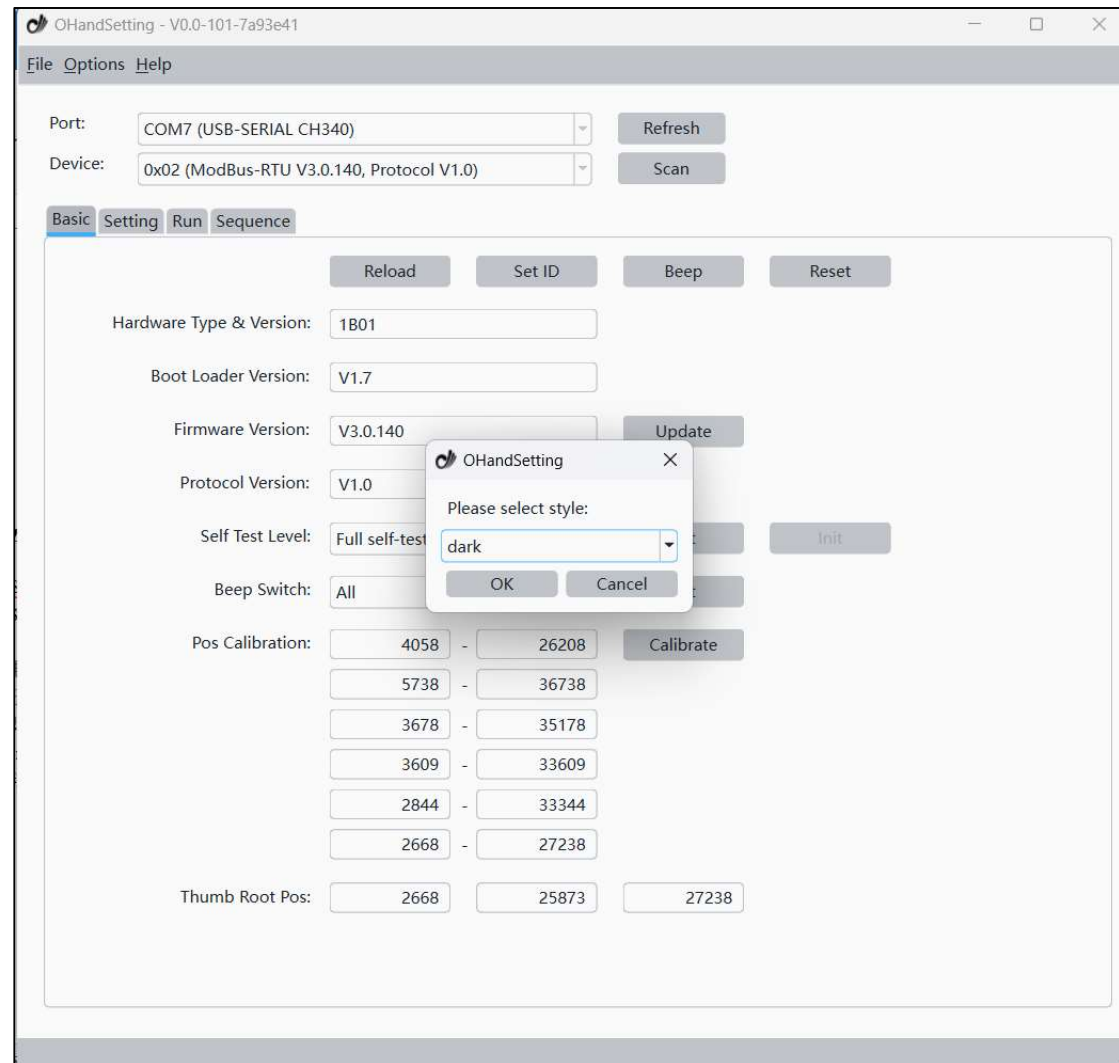
1.1 OHandSetting is a desktop tool designed for OYMotion's ROHand series dexterous hand products to complete firmware updates, position calibration, device ID settings, reading and writing limit current and PID parameters, setting and reading finger angles and speeds, and real-time display of motor current values, among other functions.

1.2 Installation: Open the URL in a browser https://github.com/oymotion/roh_firmware, click on the green "Code" button on the page, then click "Download ZIP" to download the compressed package; or copy the link and use the command "git clone https://github.com/oymotion/roh_firmware.git" in the command window to download (Git Bash must be installed).

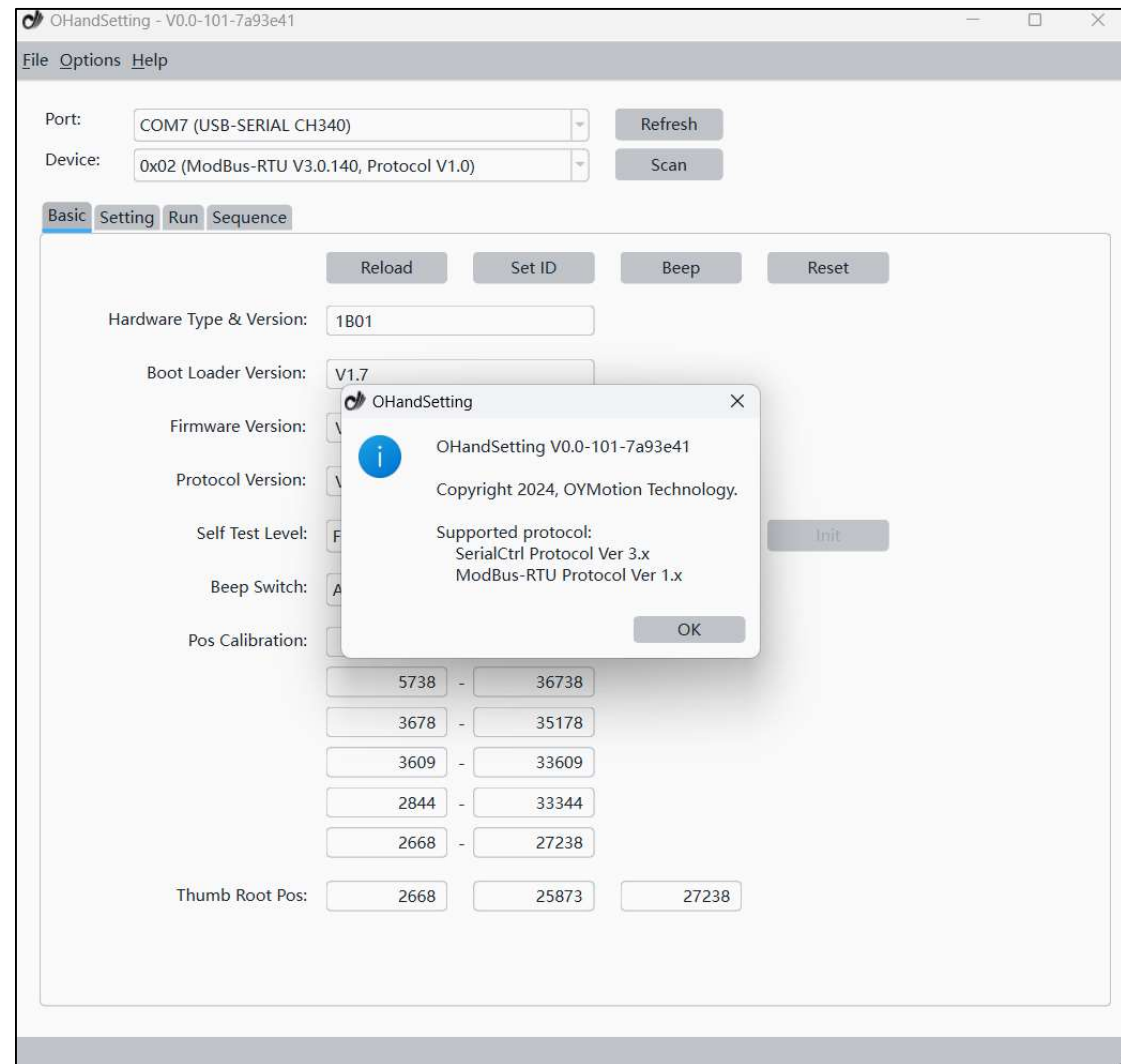


2. Run Software

- 2.1 Launch 'OHandSetting.exe' in directory 'OHandSetting'.
- 2.2 Connect the USB-RS485 module externally, make sure the CH340 driver has been installed on the computer, click 'Refresh' button to recognize the port number.
- 2.3 Turn on the power of the ROHand, wait until the self-test is completed, click on the 'Scan' button to identify the device, when the 'Device' combo box appears in the device information, you can click on the 'Stop' button to stop scanning. When the device information appears in the 'Device' combo box, you can click 'Stop' button to stop scanning.
- 2.4 Click 'Option – Theme' to set the theme color of the interface, there are 'light' and 'dark' mode.

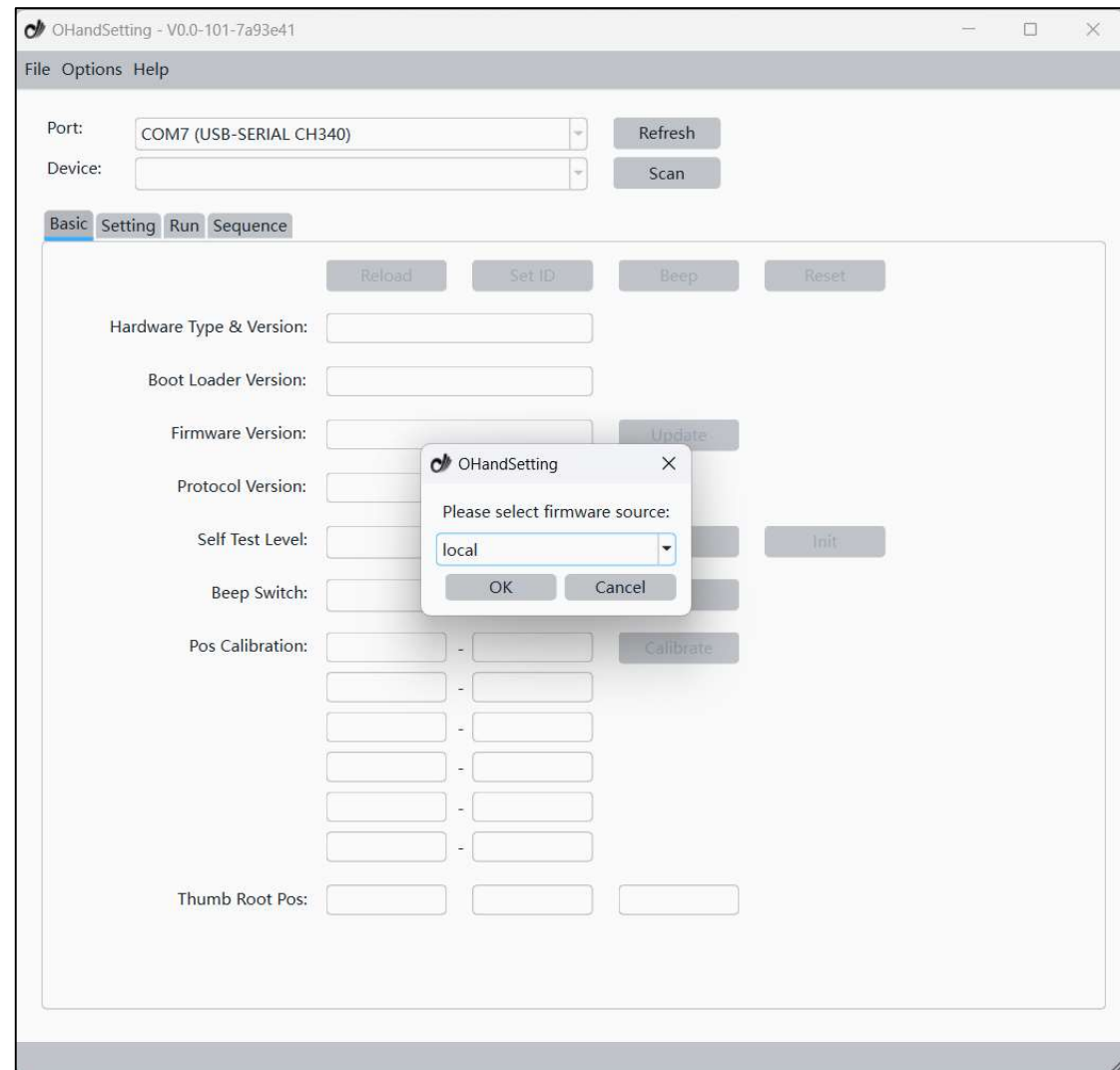


2.5 Click '**Help – About**' to view the software version information and supported protocol versions.

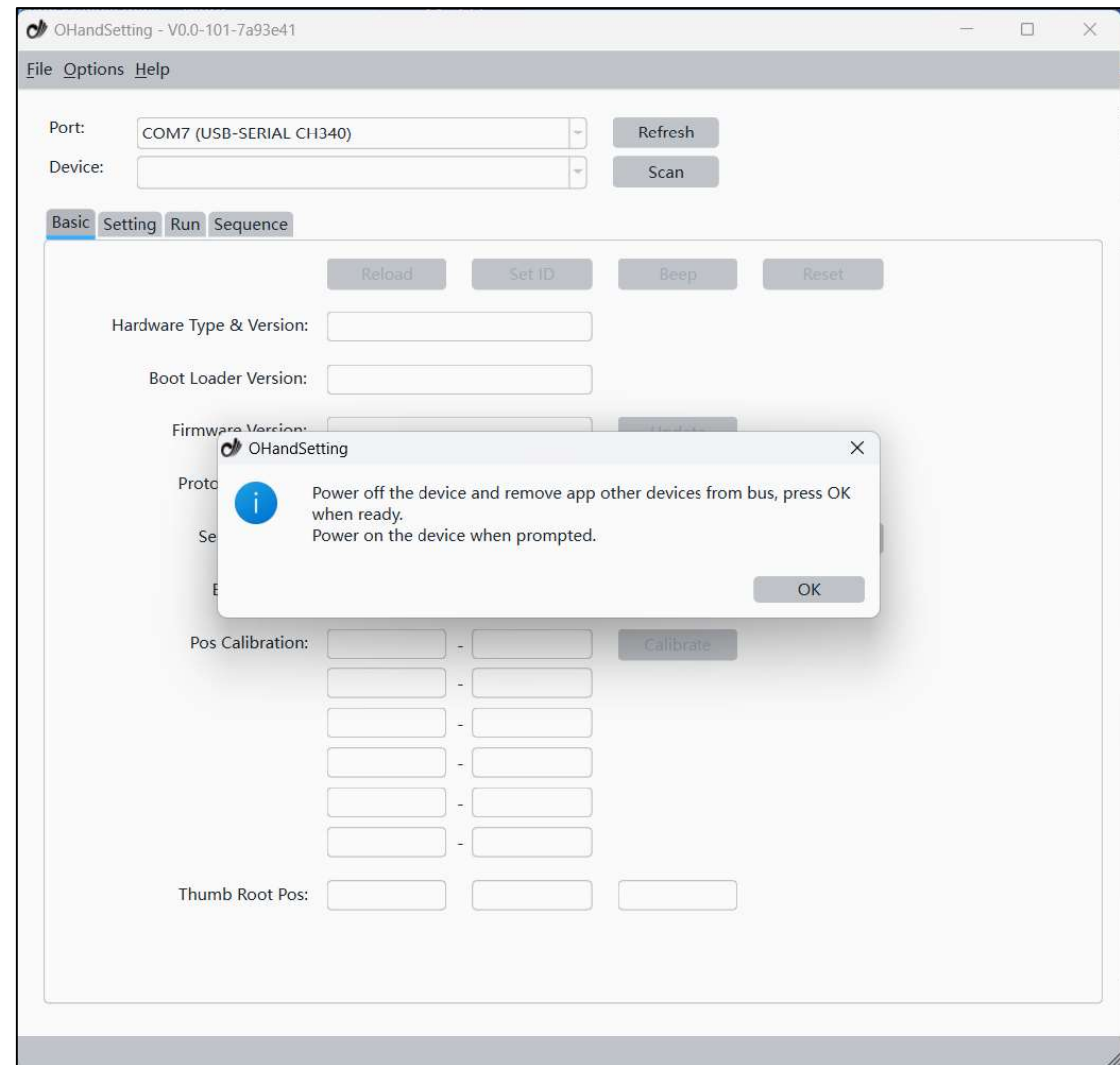


3. Update Firmware

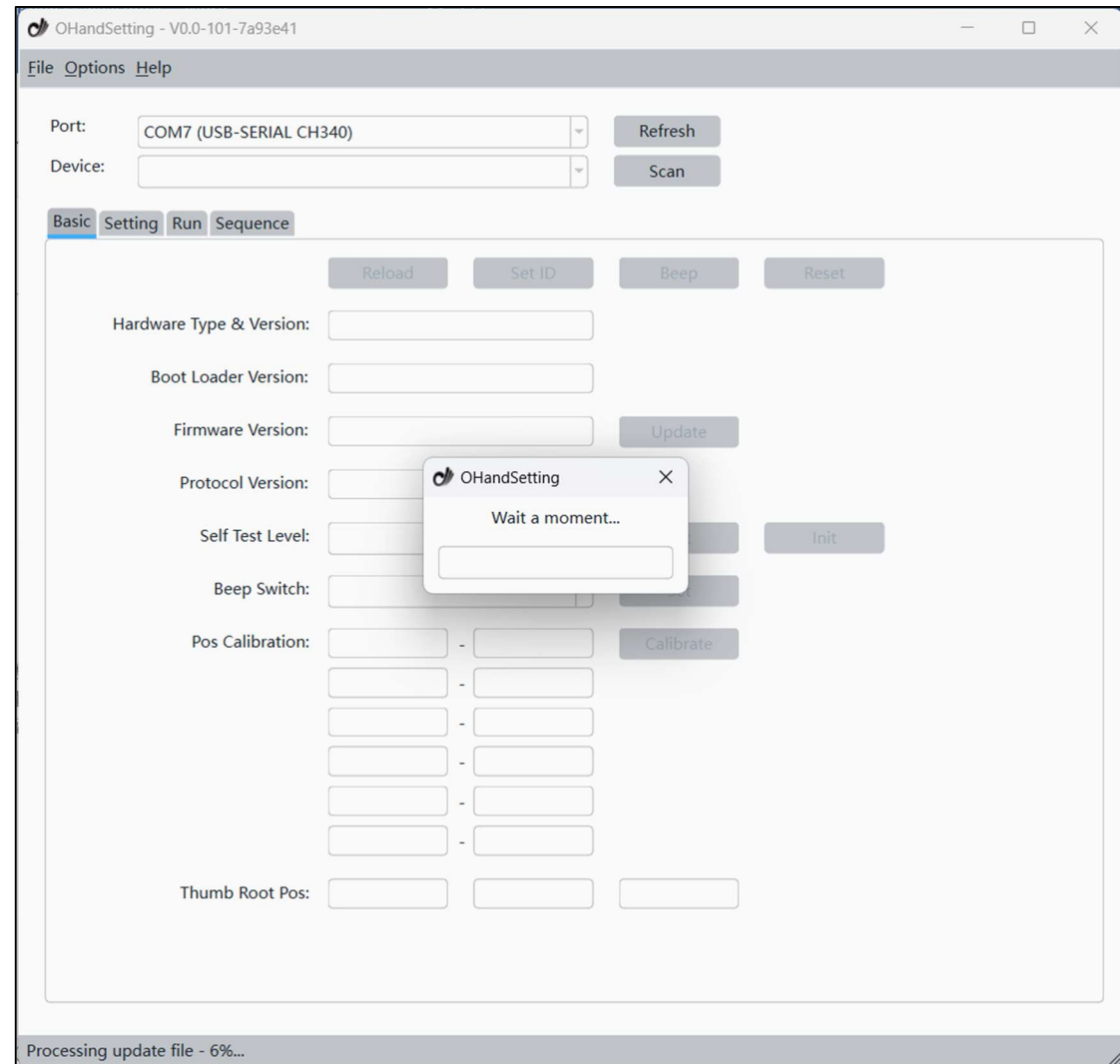
3.1 Enter 'Basic' interface, click 'Update' button, or select 'File - Force Upgrade', it will enter the firmware upgrade mode. Select the local file as the source of firmware, and choose the latest **upd** file in the firmware directory.



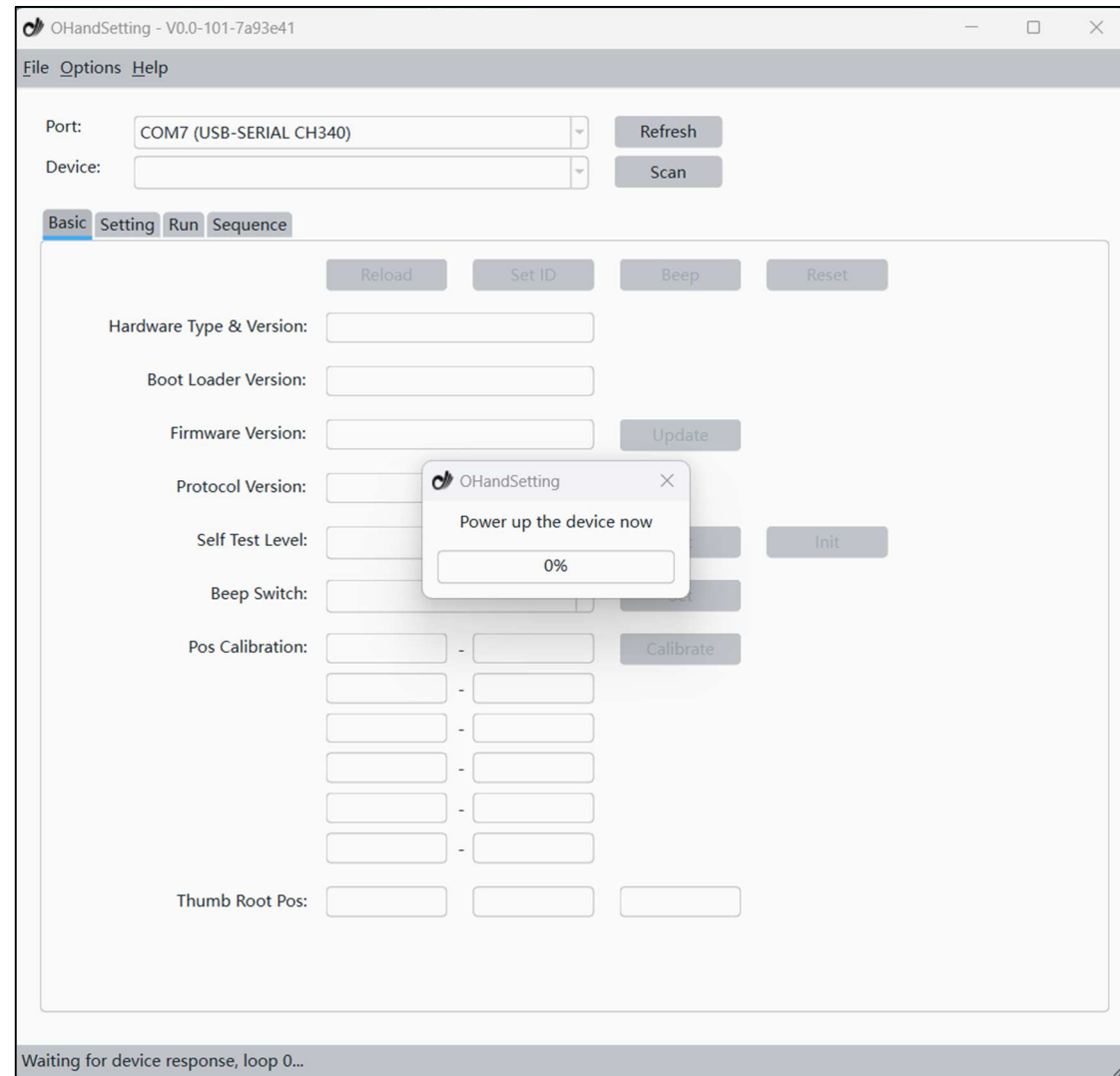
3.2 When prompted, turn off the power to the device and click 'OK'.



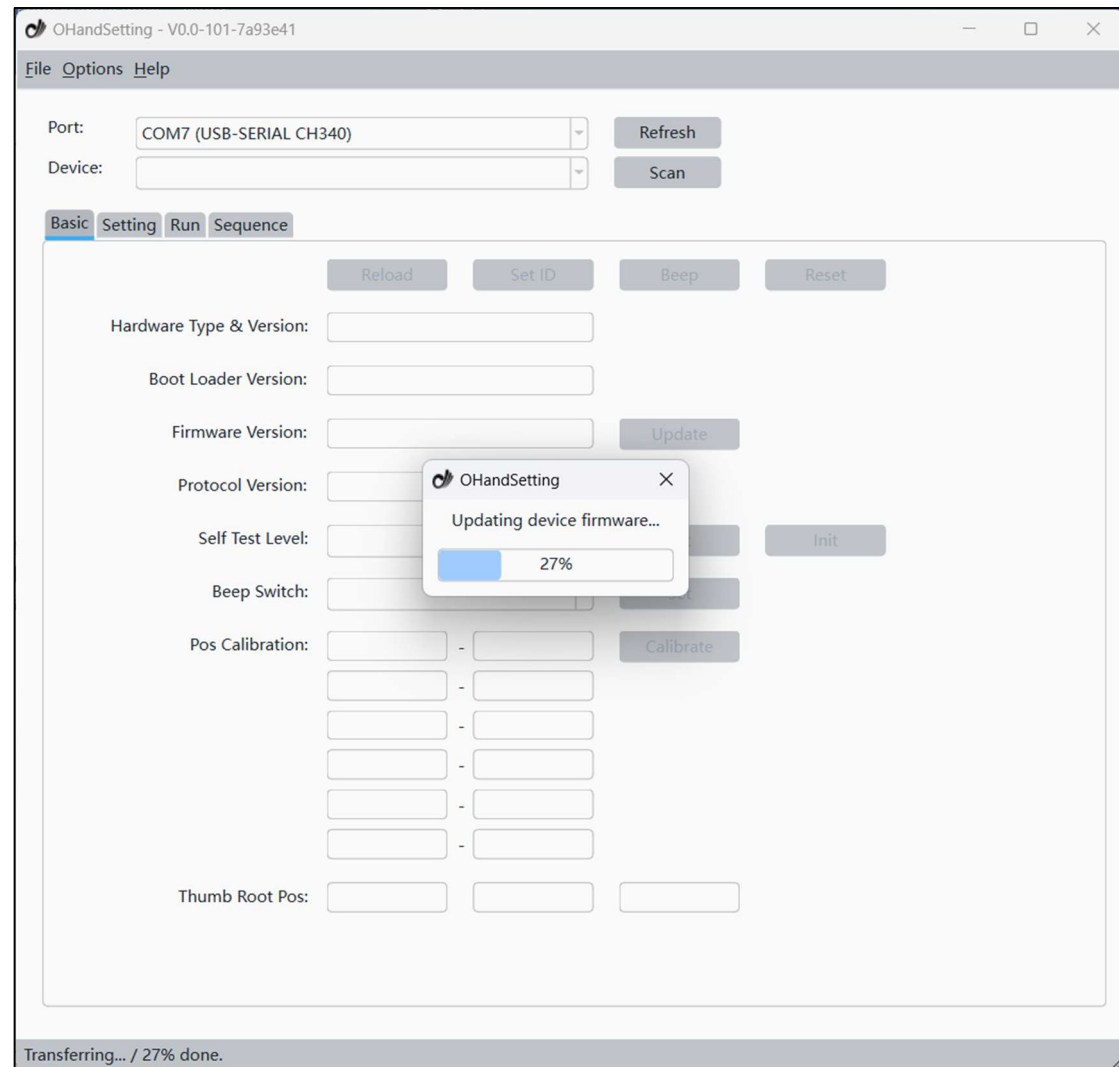
3.3 Wait for the software to process the upgrade file, at this time the progress will be shown in the status bar at the bottom left corner.



3.4 After the upgrade file is processed, you will be prompted to **‘Power up the device now’**, and the status bar at the bottom left corner will show **‘Waiting for device response, loop 0...’**, please power on the device before the **10th** loop, or the upgrade will be failed, and you have to go back to step **3.1** to upgrade again.



3.5 Wait for the upgrade progress to reach 100% to complete the upgrade, after the upgrade is completed, device will reboot , at this time to **scan** the device again, will reload the device information.



4. Basic Information Setting

- 4.1 **Reload:** Reload and display device basic information.
- 4.2 **Set ID:** Set the device ID number, support from **0x02** to **0xFF** (**0x01** is the host), device will reboot after successful setting.
- 4.3 **Beep:** Buzzer sounds for a period of time.
- 4.4 **Reset:** Reboot device.
- 4.5 **Update:** Update firmware, reference to step 3.

The screenshot displays the OHandSetting software interface, version V0.0-101-7a93e41. The window has a menu bar with 'File', 'Options', and 'Help'. Below the menu bar, there are two dropdown menus: 'Port' set to 'COM7 (USB-SERIAL CH340)' and 'Device' set to '0x02 (ModBus-RTU V3.0.140, Protocol V1.0)'. To the right of these are 'Refresh' and 'Scan' buttons. Below the dropdowns are four tabs: 'Basic' (selected), 'Setting', 'Run', and 'Sequence'. The 'Basic' tab contains several configuration sections. At the top are four buttons: 'Reload', 'Set ID', 'Beep', and 'Reset'. The first section, 'Hardware Type & Version', has a text field with '1B01'. The second section, 'Boot Loader Version', has a text field with 'V1.7'. The third section, 'Firmware Version', has a text field with 'V3.0.140' and an 'Update' button. The fourth section, 'Protocol Version', has a text field with 'V1.0'. The fifth section, 'Self Test Level', has a dropdown menu set to 'Full self-test' and 'Set' and 'Init' buttons. The sixth section, 'Beep Switch', has a dropdown menu set to 'All' and a 'Set' button. The seventh section, 'Pos Calibration', has a table of values with a 'Calibrate' button. The table has two columns of values separated by minus signs. The eighth section, 'Thumb Root Pos', has three text fields with values '2668', '25873', and '27238'.

Section	Field/Value	Action
Hardware Type & Version	1B01	
Boot Loader Version	V1.7	
Firmware Version	V3.0.140	Update
Protocol Version	V1.0	
Self Test Level	Full self-test	Set, Init
Beep Switch	All	Set
Pos Calibration	4058 - 26208 5738 - 36738 3678 - 35178 3609 - 33609 2844 - 33344 2668 - 27238	Calibrate
Thumb Root Pos	2668 25873 27238	

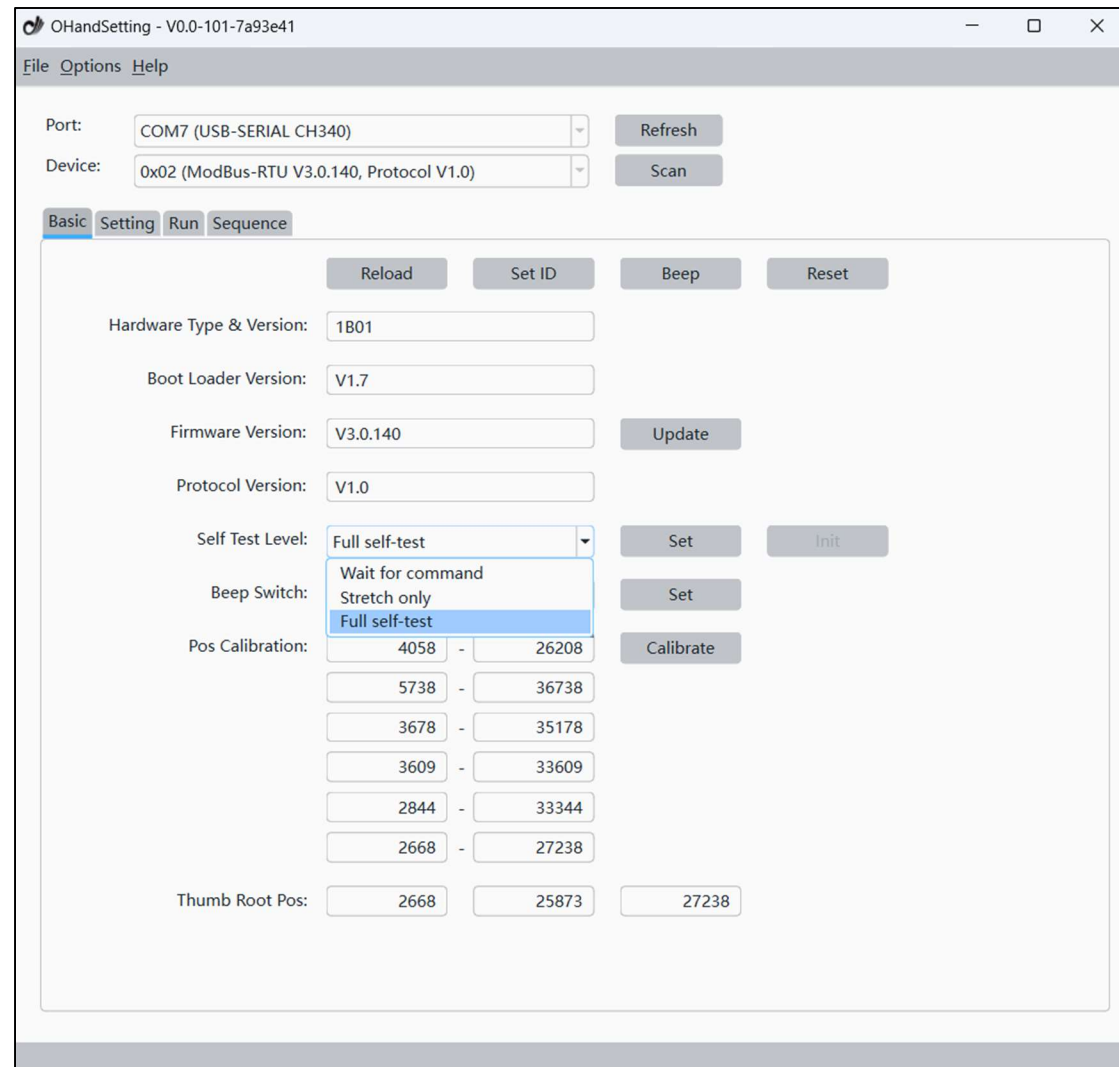
4.6 Self Test Level:

Full self-test — Fingers fully open and fully closed;

Stretch only — Finger fully open;

Wait for command — Wait for the command to start the self-test, and click the **'Init'** button after the setting is successful, then the device will be self-tested.

After selecting it, click the **'Set'** button on the right side, **'Set self-test level succeed'** will be shown on the status bar at the bottom left corner, reboot the device or click **'Reset'** to check it.

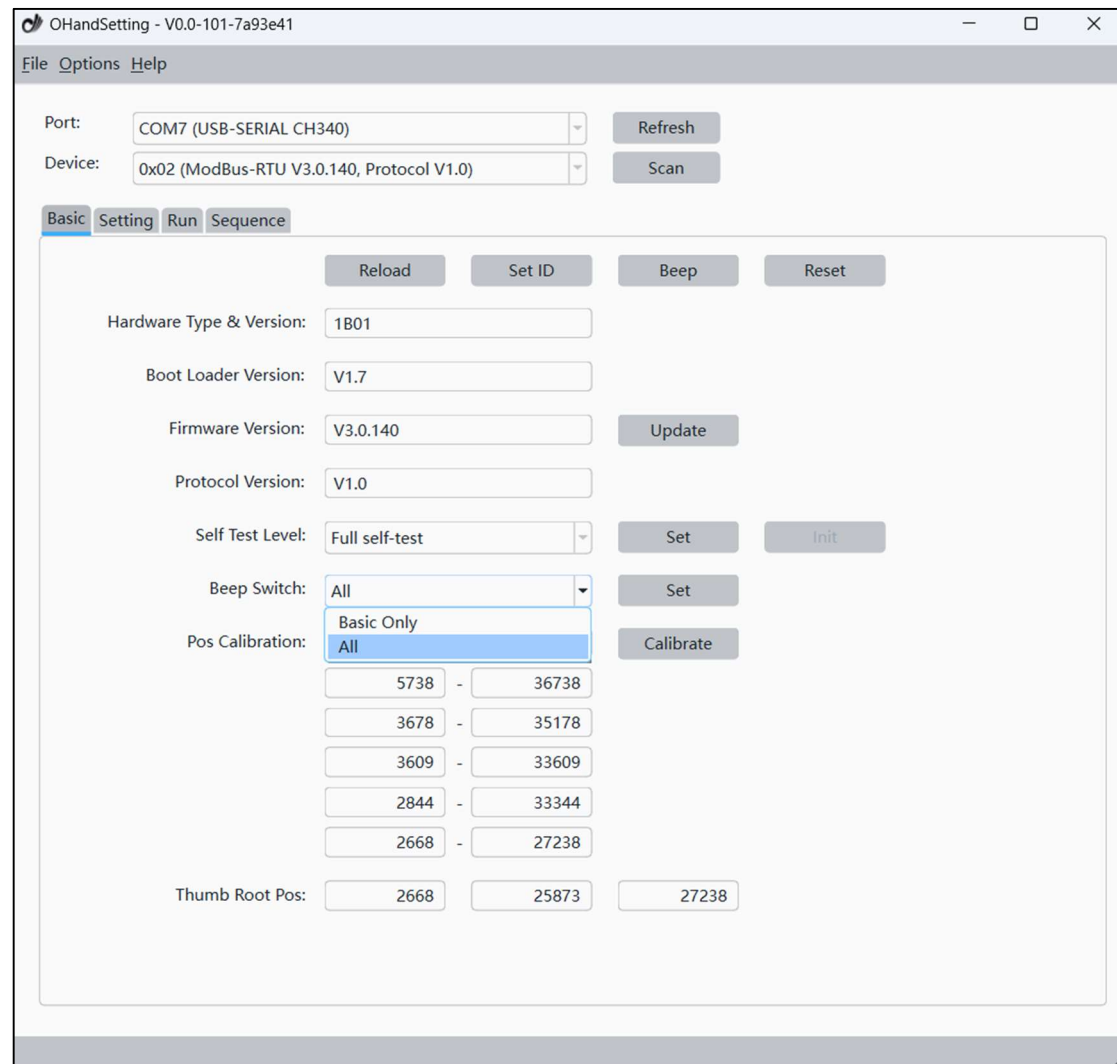


4.7 **Beep Switch:** The switch that sounds the buzzer is divided into:

All — Normal sound;

Basic Only — The buzzer will sound under certain circumstances, otherwise it will not sound.

After selecting, click the ‘**Set**’ button on the right side, the status bar at the bottom left corner will show ‘**Set beep switch succeeded**’, click the ‘**Beep**’ button to check.



4.8 Calibrate: This function is a factory setting, not available to users at this time, and will display calibrate information in the edit box.

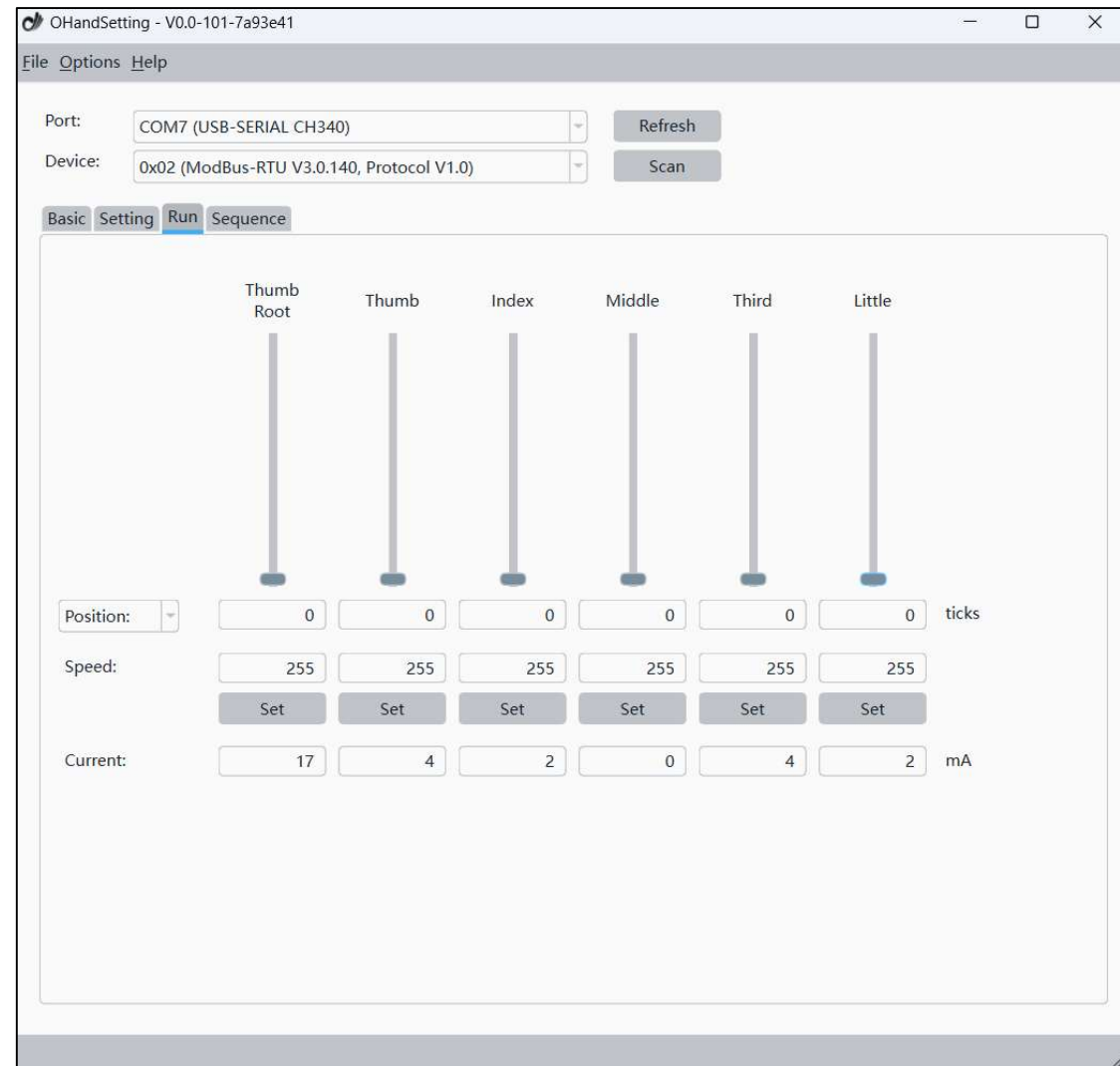
The screenshot shows the OHandSetting software interface. The title bar reads "OHandSetting - V0.0-101-7a93e41". The menu bar includes "File", "Options", and "Help". Below the menu bar, there are two rows of configuration options: "Port:" with a dropdown menu showing "COM7 (USB-SERIAL CH340)" and a "Refresh" button, and "Device:" with a dropdown menu showing "0x02 (ModBus-RTU V3.0.140, Protocol V1.0)" and a "Scan" button. Below these are four tabs: "Basic", "Setting", "Run", and "Sequence". The "Basic" tab is selected. Inside the "Basic" tab, there are several buttons at the top: "Reload", "Set ID", "Beep", and "Reset". Below these are several input fields and buttons: "Hardware Type & Version:" with a text box containing "1B01"; "Boot Loader Version:" with a text box containing "V1.7"; "Firmware Version:" with a text box containing "V3.0.140" and an "Update" button; "Protocol Version:" with a text box containing "V1.0"; "Self Test Level:" with a dropdown menu showing "Full self-test" and "Set" and "Init" buttons; "Beep Switch:" with a dropdown menu showing "All" and a "Set" button; "Pos Calibration:" with a table of values and a "Calibrate" button; and "Thumb Root Pos:" with three text boxes containing "2668", "25873", and "27238".

Pos Calibration:	Value 1	Value 2
	4058	26208
	5738	36738
	3678	35178
	3609	33609
	2844	33344
	2668	27238

Thumb Root Pos: 2668 25873 27238

6. ROHand Control

6.1 **Position control:** Select '**Position**' in the combo box, drag the vertical slider to display the corresponding position value in the edit box below, and the finger will run to the target position after releasing the slider, or write the value within 0 - 65535 (finger from open to closed) in the edit box, click '**Set**' and the finger will run to the target position.



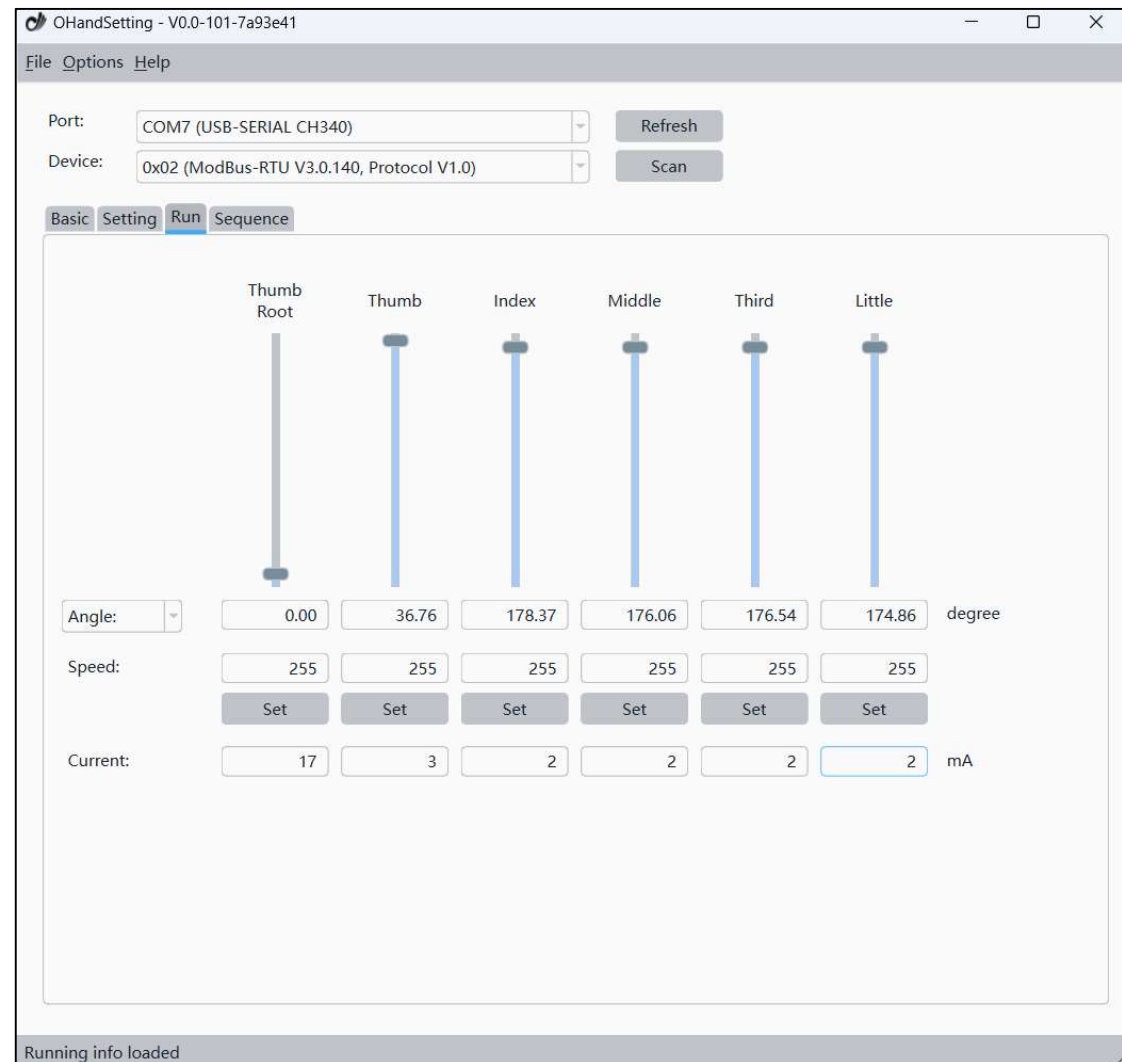
6.2 Angle control: Select ‘Angle’ in the combo box, when you move the vertical slider, the corresponding angle value will be displayed in the edit box below, after releasing the slider, the finger will run to the target angle (when you move it to the maximum or minimum position, you can read the maximum or minimum value of the finger angle from the edit box); or write the target angle value in the edit box, click ‘Set’ and then the finger will run to the target angle. For the definition of finger angle, please refer to protocol directory.

OHandModBusRTUProtocol_EN.md

OHandSerialProtocol_EN.md。

6.3 Speed control: The default value is 255 ticks/s, write the value within 0 - 255 in the edit box and click ‘Set’ to take effect, you can observe the running speed of the finger by position/angle control.

6.4 Current read: After entering the **Run** widget or rescanning the device, the current value collected from the motor encoder will be displayed in real time in the edit box.



7. Action sequence

- 7.1 Action set:** Same to the position control, you can move the vertical slider to control ROHand to a specific gestures. Then click button ‘+’ to store the gesture and set the delay time before running the gesture. Also you can click button ‘-’ to delete the existing data. Click button ‘^’ or ‘v’ to reorder the gestures.
- 7.2 Load and run:** When all gestures are set, click the ‘**Run**’ button and the device will perform the actions in the set order, and click ‘**Stop**’ button to stop running. Click ‘**Save**’ button to save the current action data, the file will be saved in json format. Click ‘**Load**’ button will read the action sequence file and load the gesture data in the form.

OHandSetting - V0.0-101-7a93e41

FileOptionsHelp

Port:COM7 (USB-SERIAL CH340)

Device:0x02 (ModBus-RTU V3.0.140, Protocol V1.0)

Refresh

Scan

Basic

Setting

Run

Sequence

Thumb Root

Thumb

Index

Middle

Third

Little

Position:

0

16294

0

17742

31

29998

ticks

Speed:

255

255

255

255

255

255

Delay:

2000

ms

+

-

^

v

1	3	30001	30000	30000	30000	30000
2	0	20001	0	0	31	0
3	65532	0	0	65535	31	65535
4	0	16294	0	17742	31	29998

Run

Stop

Load

Save

8. FAQs

- 8.1 OHandSetting can control multiple dexterous hands through one USB to 485 module, only need dexterous hands to set different ID (e.g. 0x02 and 0x03), and switch the dexterous hands that need to be controlled in the device drop-down box.
- 8.2 If you can't control the dexterous hand after reconnecting the dexterous hand or restarting after power failure, please refresh the serial port first, and then rescan the device to refresh the device information.
- 8.3 If you can't scan the device information, please try to upgrade the firmware first and then scan it again, if there is no answer from the device during the upgrade process, please check the external line through and through, refer to the FAQs_EN.md document in the FAQs file directory, if you still can't solve the problem, please contact technical support faq@oymotion.com.

9. Contact Details

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Download: www.github.com/oymotion

10.Revision history

Modification date	Version	Revision content
2024.10.30	V1.0	Initial version.
2024.12.05	V1.1	Added action sequence; Modified revision history.