

LHandPro Software User Manual

Table of Contents

- [Software Introduction](#)
- [System Requirements](#)
- [Installation Guide](#)
- [Quick Start](#)
- [Feature Details](#)
- [Frequently Asked Questions](#)
- [Technical Support](#)
- [Version Updates](#)

Software Introduction

LHandPro is a professional upper computer control software specifically designed for the company's DH116 and DH2015 dexterous hands. It integrates device debugging, real-time control, and parameter configuration to provide users with a complete dexterous hand control solution.

Software Version: v1.1.4 **Release Date:** October 29, 2025 **Developer:** Shenzhen Ling Qiao Drive Control Technology Co., Ltd.

System Requirements

Operating System

- Windows 10/11 (x64)

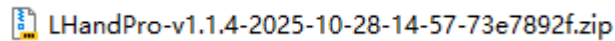
Hardware Requirements

- Processor: Intel i5 or equivalent performance processor
- Memory: 8GB RAM (16GB recommended)
- Storage: 500MB available space
- Display: Resolution 1920×1080 or higher

Installation Guide

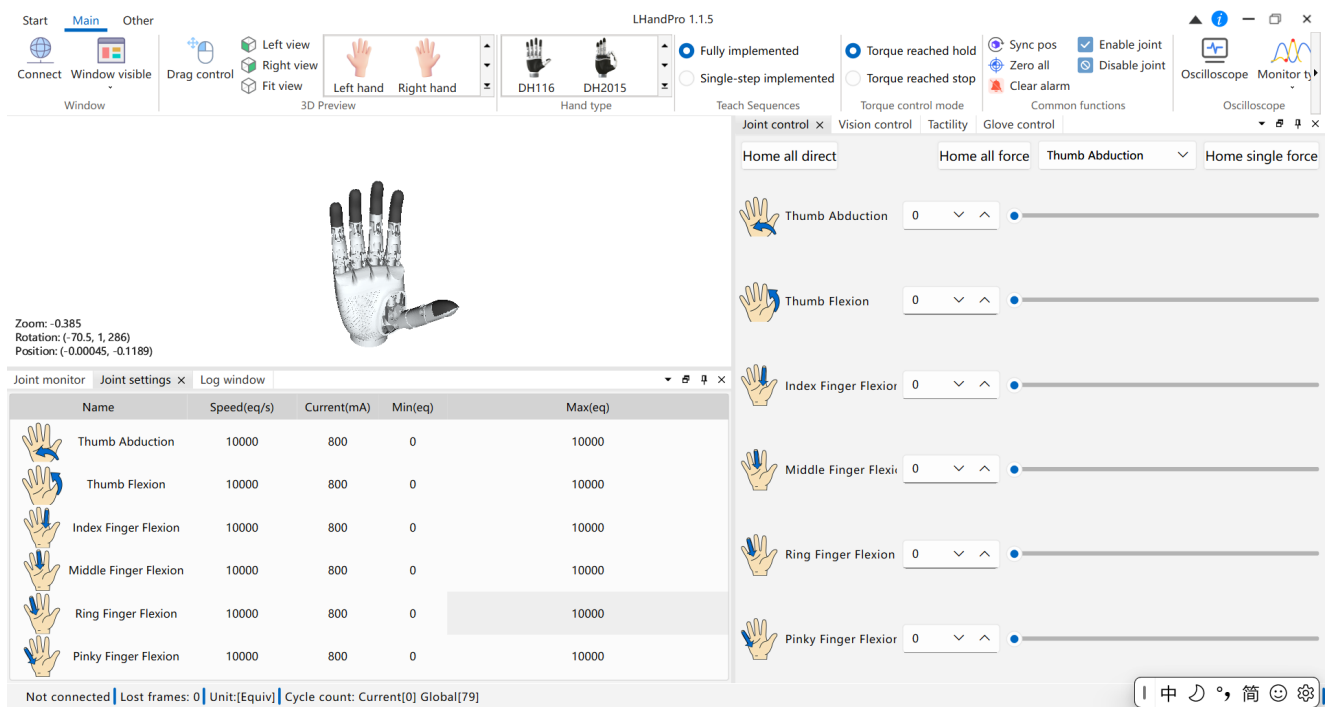
Windows Installation Steps

1. Download the compressed package `LHandPro-v1.1.4-2025-10-28-14-57-73e7892f.zip`

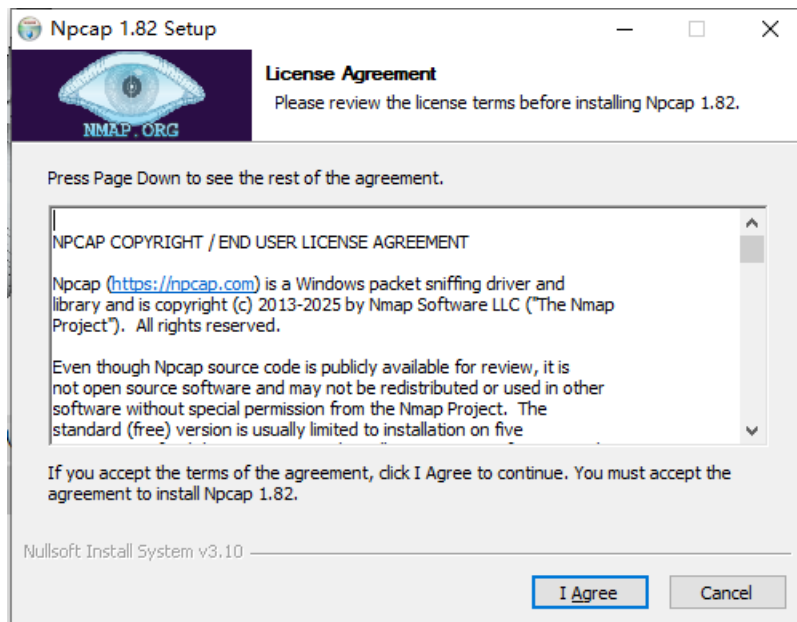


2. Extract the compressed package

3. Launch the software



4. When launching the software for the first time, it will automatically execute the installation program for necessary components. Please continue with subsequent operations after the installation is complete.

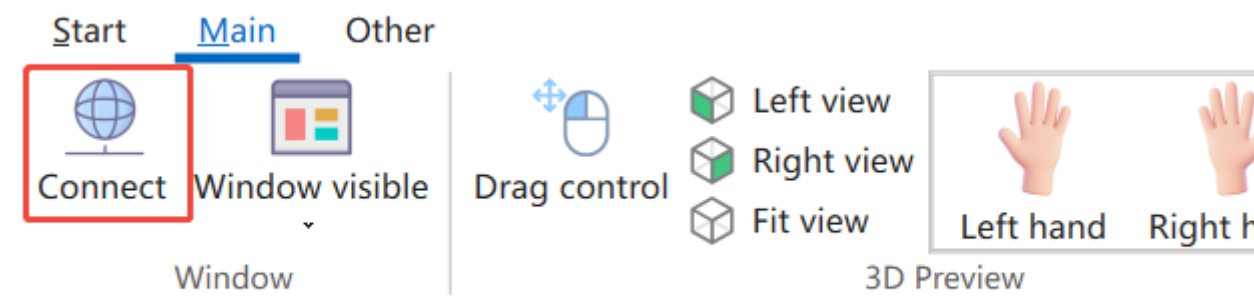


During installation, you need to check "Install Npcap in WinPcap API-compatible Mode"

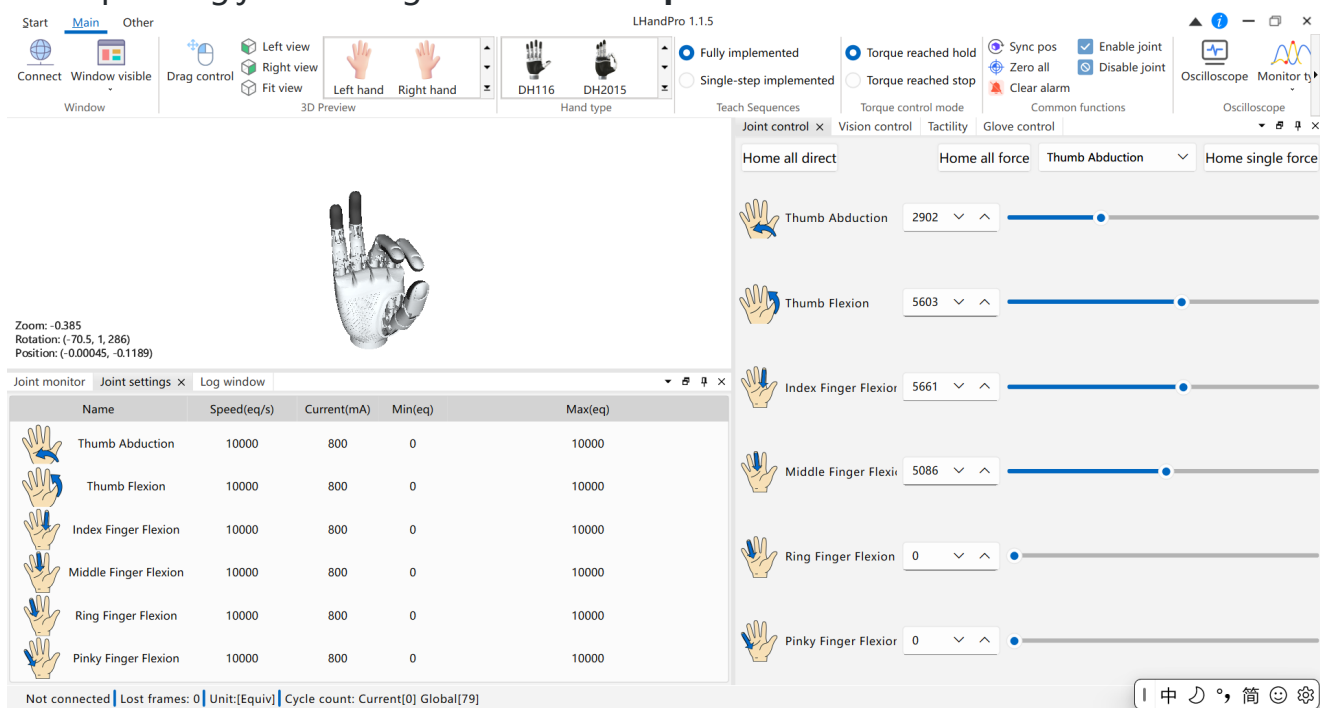
Quick Start

Basic Operation Flow

1. **Connect the Dexterous Hand:** Click the **"Connect"** button in the upper left corner to select the corresponding method to connect the dexterous hand.



2. **Control Movement:** On the joint monitoring page, you can control the corresponding joint through **"slider"** or **"input box"**.



Feature Details

Core Module Details

3D Display Module

Function Description: Displays the model of the dexterous hand and follows the changes of the actual dexterous hand.

Main Features:

- Real-time display of the current joint positions of the dexterous hand

Interface Preview:

Zoom: -0.385
Rotation: (-70.5, 1, 286)
Position: (-0.00045, -0.1189)

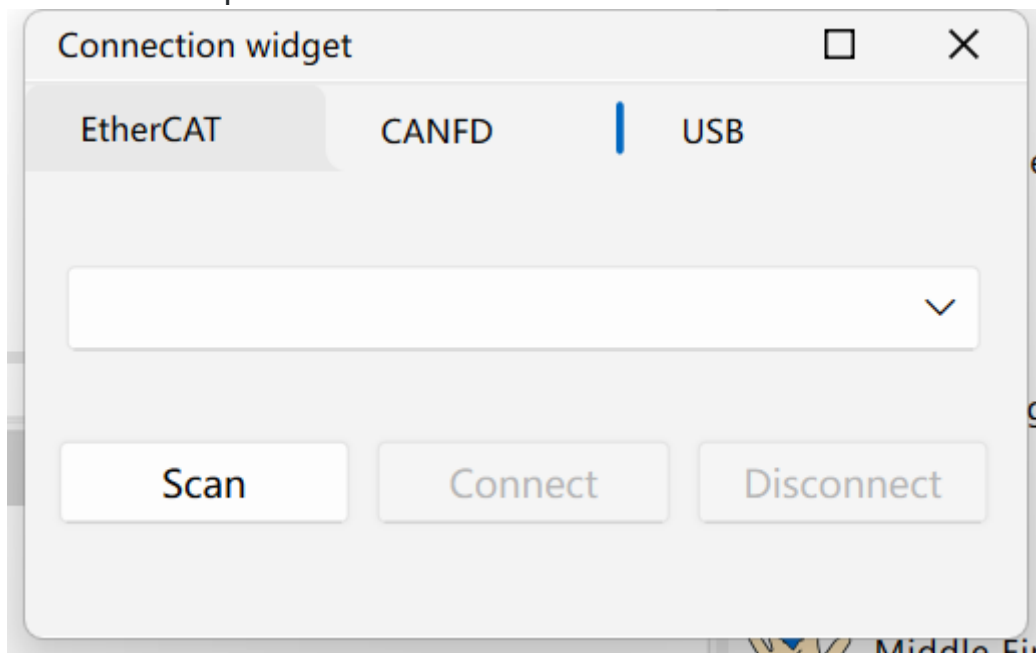


Connection Module

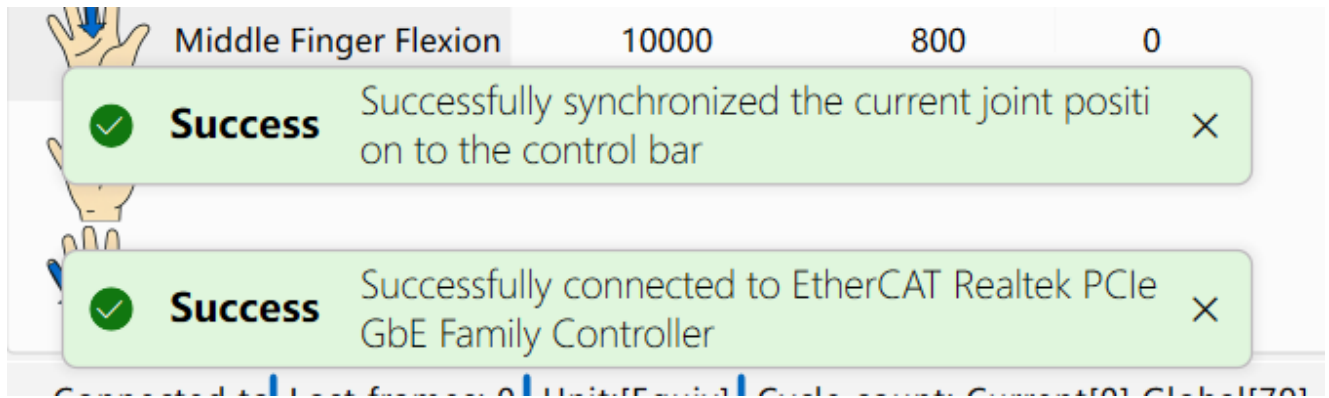
Function Description: Supports connecting to the dexterous hand via EtherCAT/USB and other methods.

Operation Steps:

1. Click the "**Connect**" button in the upper left corner
2. A connection window will pop up, select the corresponding communication method, then scan the port and connect



3. Connection successful, a prompt message will appear in the pop-up window, and the connection status in the lower left corner will be updated



Joint Control Module

Function Description: Used to control the movement of each joint position.

Main Features:

- Control the corresponding joint through "**slider**" or "**input box**"
- Forced homing: Return to the mechanical zero point by finding the limit
- Position homing: Move directly to the logical zero point

Interface Preview:

Joint control ×
Vision control
Tactility
Glove control

Home all direct
Home all force
Thumb Abduction
Home single force


Thumb Abduction
0



Thumb Flexion
0



Index Finger Flexion
0

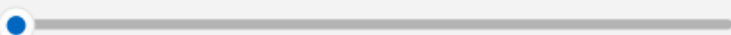


Middle Finger Flexion
4



Ring Finger Flexion
0



Pinky Finger Flexion
2


Teaching Queue Module

Function Description: Define a continuous action sequence to control joint movement.

Function Description Table:







Delay
1000
Cycle
1



Button	Function Description
Add	Add current joint position to the queue
Delete	Delete selected row
Move Up	Move selected row up
Move Down	Move selected row down

Button	Function Description
Import	Import teaching sequence file
Export	Export current teaching sequence
Delay	Set the interval time between instruction executions (ms)
Loop	Set the number of loop executions (0 represents infinite loop)
Start	Start queue execution
Stop	Stop queue execution

Main Features:

- Add current joint position to the sequence
- Arbitrary sorting of teaching queues
- Teaching files support export file saving and import of teaching files
- Teaching queue supports full execution and single-line execution
- Double-click to edit detailed position, movement speed, current of each joint, and the interval time between the execution of the next sequence line

Edit Joint Settings

Name	Position	Velocity	Current
Thumb Abduction	0	20000	800
Thumb Flexion	0	20000	800
Index Finger Flexion	0	20000	800
Middle Finger Flexion	0	20000	800
Ring Finger Flexion	0	20000	800
Pinky Finger Flexion	0	20000	800

Delay

400

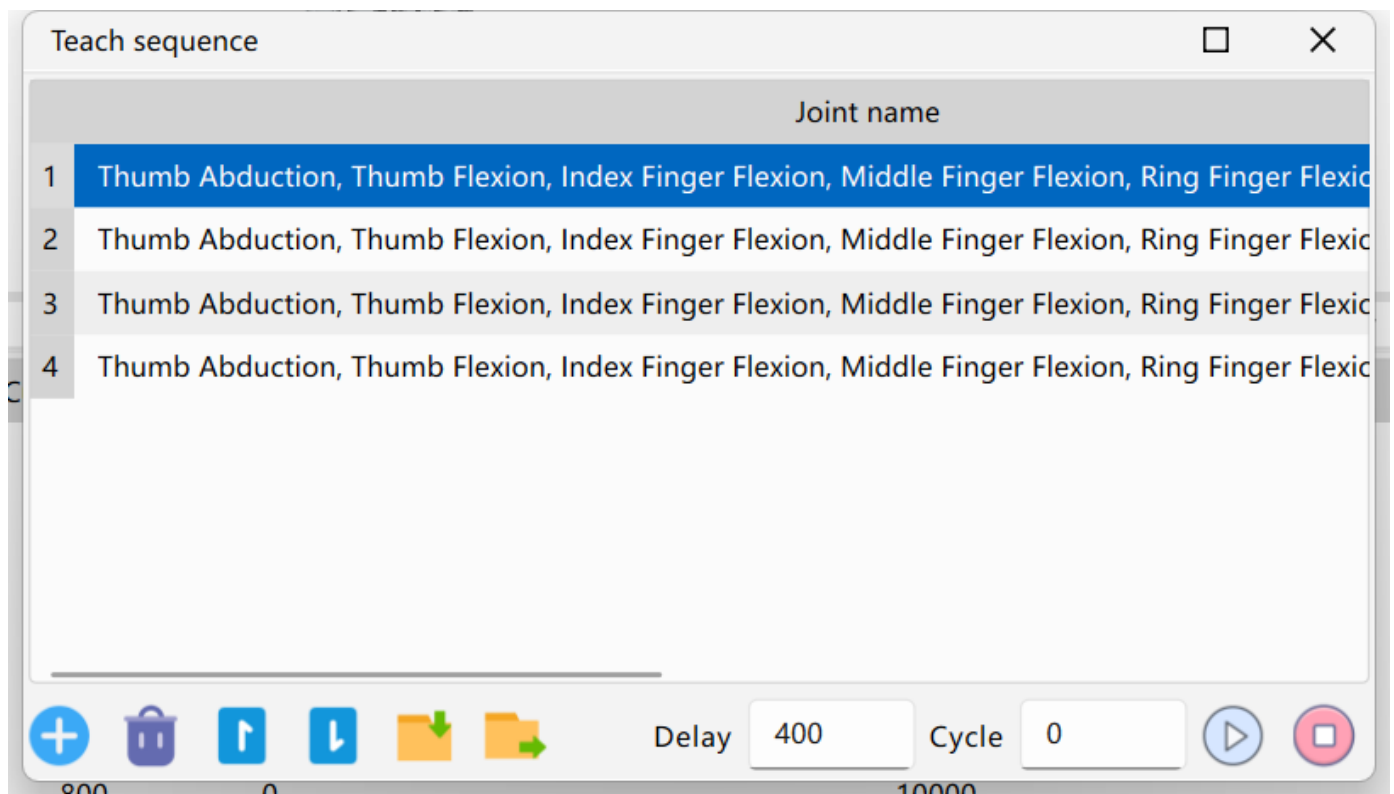
▼

▲

OK

Cancel

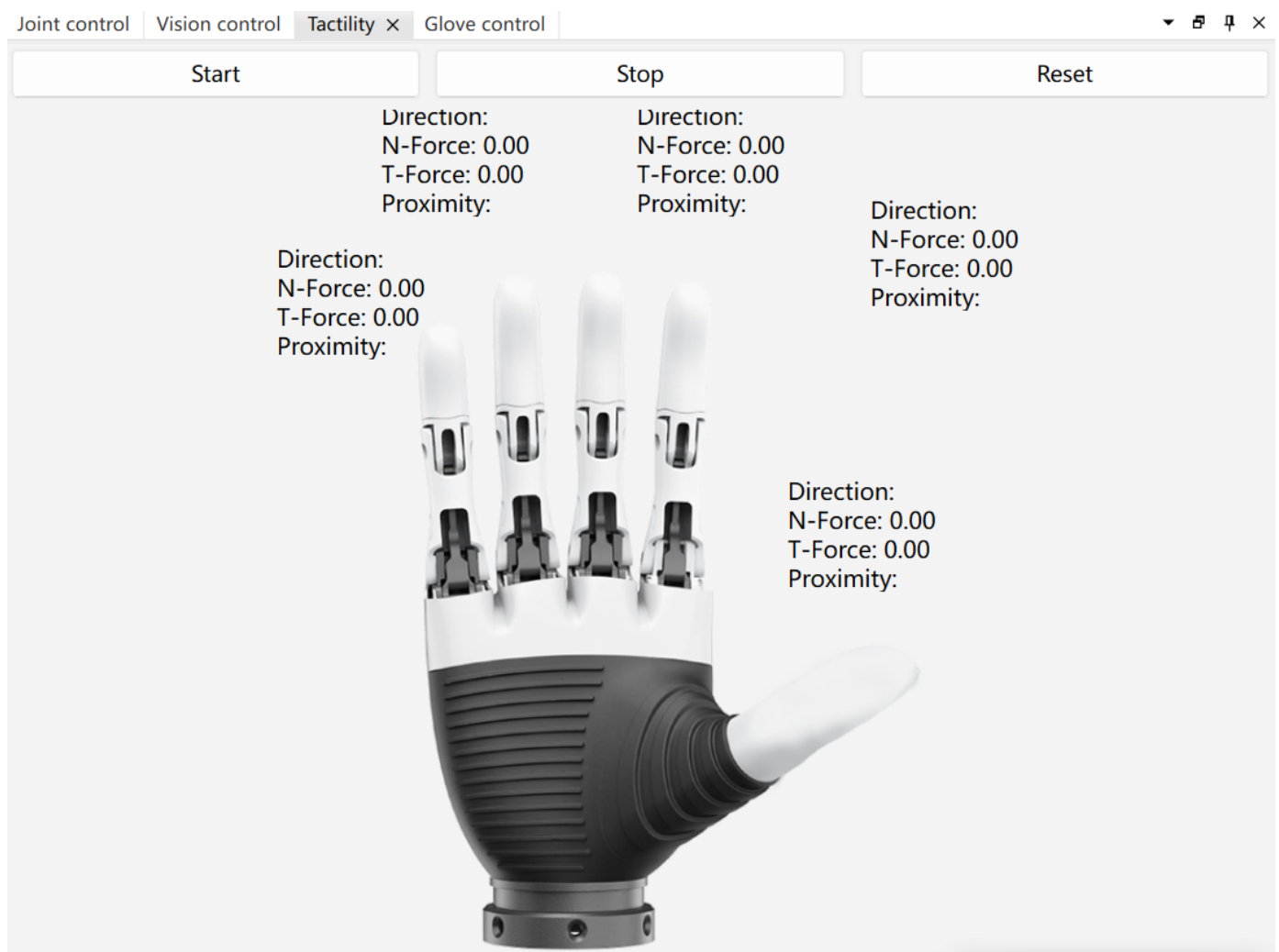
Interface Preview:



Haptic Module

Function Description: Displays the values and heat maps of haptic sensors for each finger and palm.

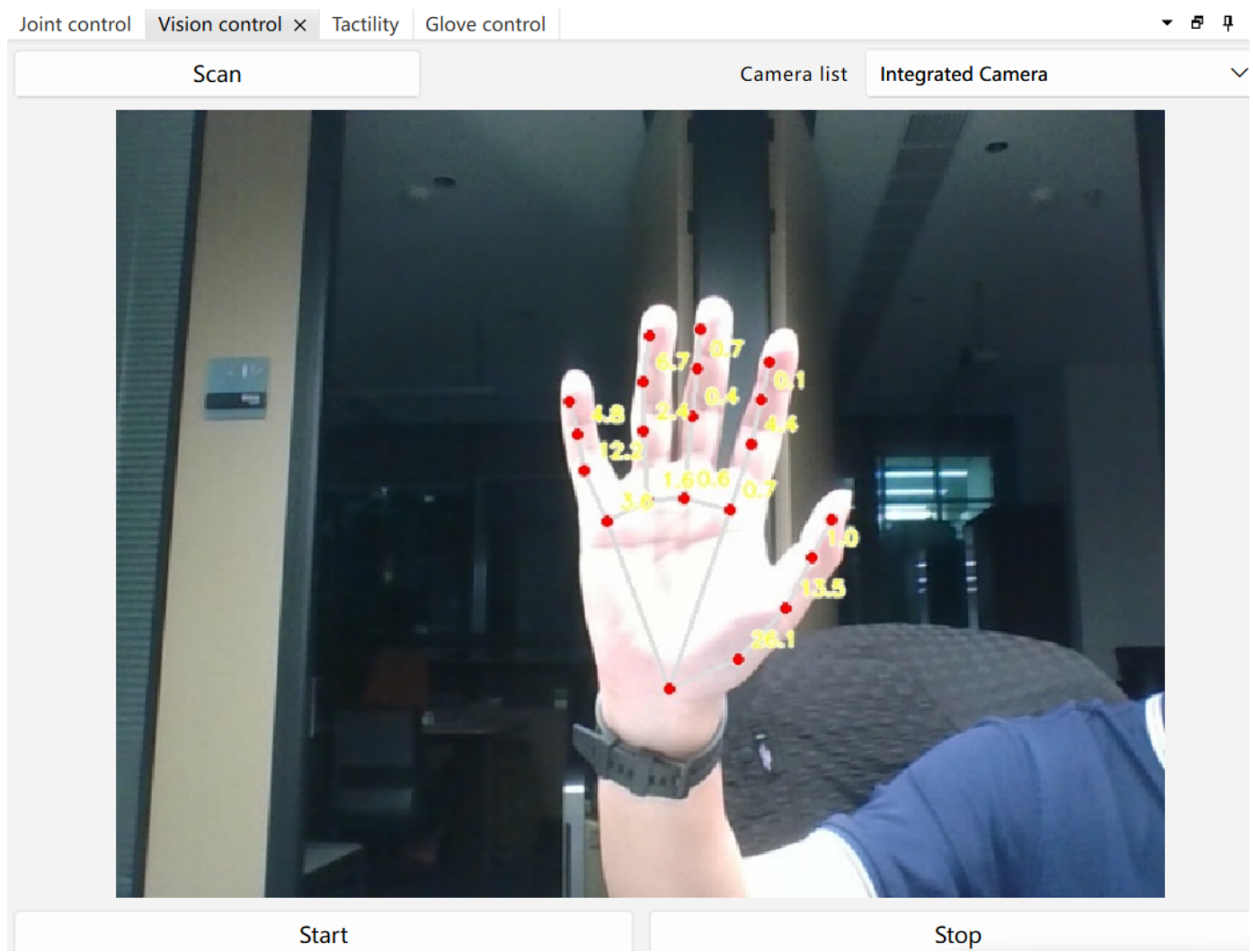
Interface Preview:



Visual Control Module

Function Description: Control the dexterous hand movement through visual capture.

Interface Preview:



Joint Monitoring Module

Function Description: Information monitoring for each joint.

Main Features:

- Monitor the position/speed/current/alarm and error codes of each joint

Interface Preview:

Joint monitor		Joint settings		Log window			
Name	Position(eq/s)	Velocity(eq/s)	Current(mA)	Alarm	Enable	Status	
 Thumb Abduct	0	0	4	0	1	0	
 Thumb Flexio	1639	10	10	0	1	0	
 Index Finger Fle:	2319	0	43	0	1	0	
 Middle Finger Fle	799	0	18	0	1	0	
 Ring Finger Flex	0	40	24	0	1	1	
 Pinky Finger Fle:	0	0	21	0	1	0	

Joint Configuration Module

Function Description: Parameter configuration for each joint.

Main Features:

- Provide modification of the display name of each joint
- Provide modification of the running speed of each joint
- Provide modification of the maximum current of each joint

Interface Preview:

Joint monitor		Joint settings		Log window			
Name	Speed(eq/s)	Current(mA)	Min(eq)	Max(eq)			
 Thumb Abduction	10000	800	0	10000			
 Thumb Flexion	10000	800	0	10000			
 Index Finger Flexion	10000	800	0	10000			
 Middle Finger Flexion	10000	800	0	10000			
 Ring Finger Flexion	10000	800	0	10000			
 Pinky Finger Flexion	10000	800	0	10000			

Log Module

Function Description: View debugging/information/warning/error information during runtime.

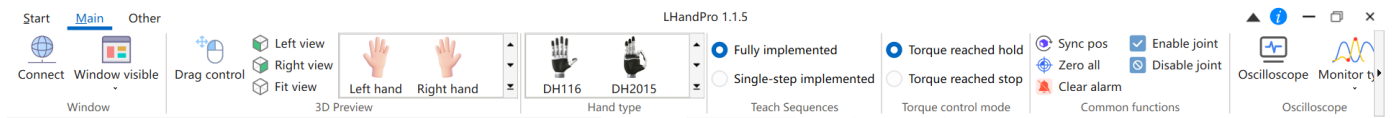
Interface Preview:

Joint monitor Joint settings Log window ×			
☐ Debug	Time	Type	Content
☒ Info	2025-11-12 18:34:27.301	Info	Initial succeeded!
☒ Warn	2025-11-12 18:35:54.451	Info	Thumb Abduction move to the 2902
☒ Error	2025-11-12 18:35:55.258	Info	Thumb Flexion move to the 5603
	2025-11-12 18:35:55.966	Info	Index Finger Flexion move to the 5661
	2025-11-12 18:35:56.686	Info	Middle Finger Flexion move to the 5086
	2025-11-12 18:38:49.034	Info	Successfully connected to EtherCAT Realtek P
	2025-11-12 18:38:49.034	Info	Current dexterous hand degrees of freedom
	2025-11-12 18:38:50.036	Info	Successfully synchronized the current joint po
	2025-11-12 18:40:04.675	Info	Import teach sequence file succeeded C:/User
	2025-11-12 18:40:06.282	Warn	QLayout: Attempting to add QLayout to Join

Setting Options

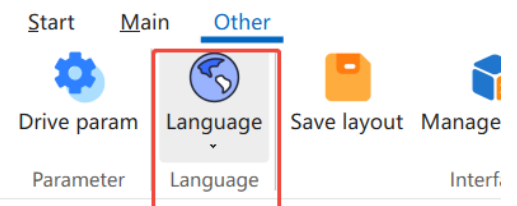
Dexterous Hand Settings:

- Left/Right Hand Mode Selection
 - Switch between different left/right hand models according to the actual dexterous hand
- Dexterous Hand Model Switching
 - Switch between different dexterous hand models according to the actual dexterous hand model
- Teaching Queue Movement Mode
 - Can switch the sequence to full execution or single-step execution
- Torque Control Mode
 - Torque in-place holding: During movement, when the torque reaches the target, it will continue to maintain the set current, and when the torque decreases, it will continue to move toward the set target position
 - Torque in-place stop: During movement, when the torque reaches the target, it will stop the current movement and limit the output current

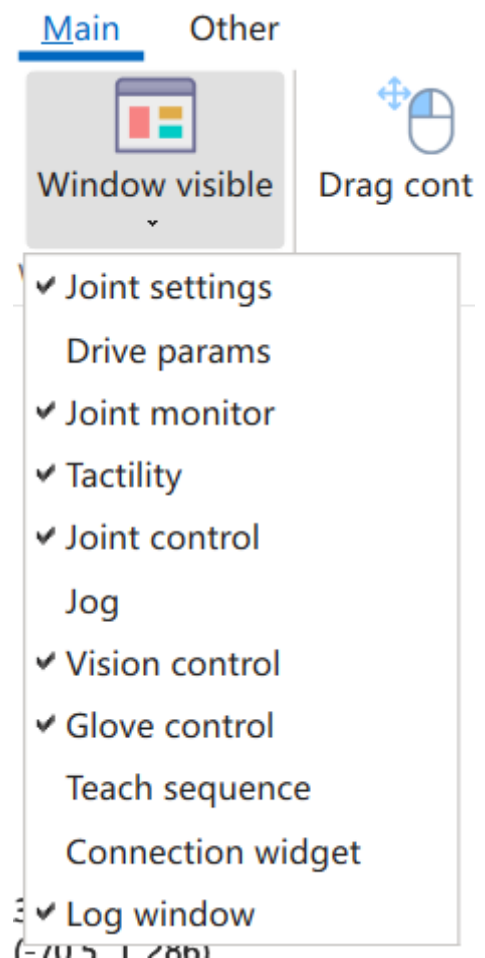


General Settings

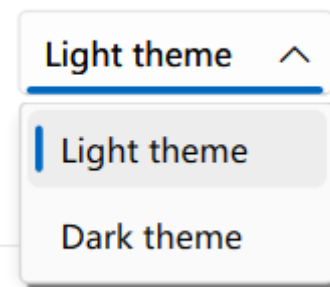
Language Settings: Support for Chinese, English multi-language switching



Window Visibility: Support hiding and displaying any window



Theme Settings: Light/Dark theme



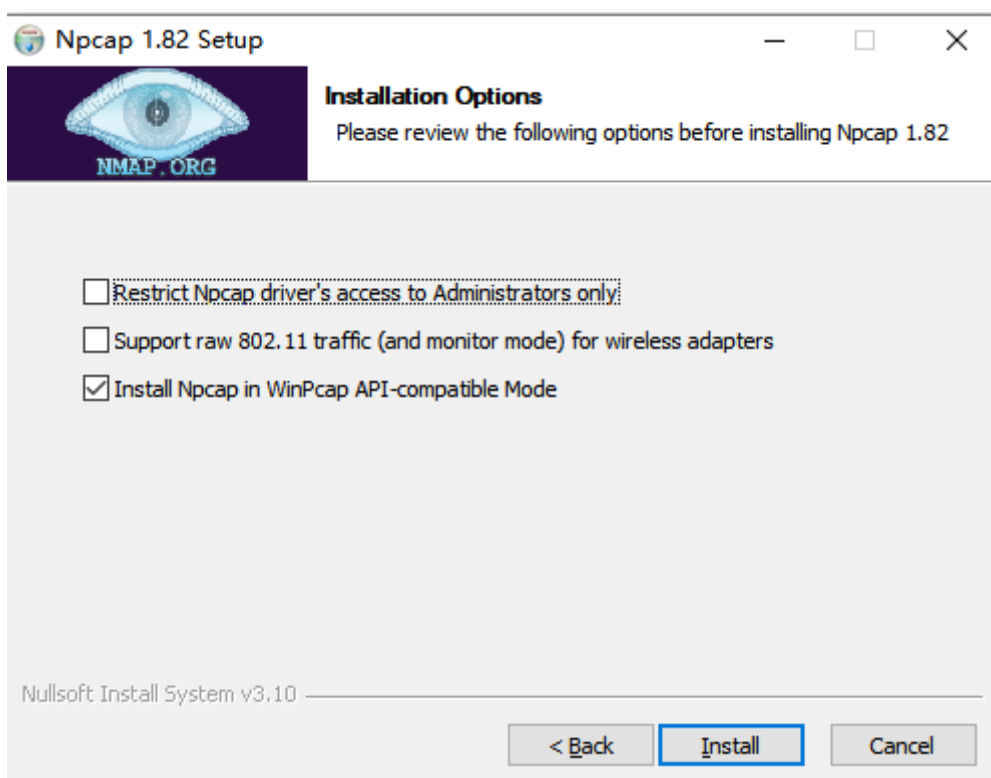
Frequently Asked Questions

Q1: What should I do if the software reports an error when starting?

A: Please check if the system meets the minimum requirements and ensure that the necessary runtime libraries are installed. You can repair it using repair tools (such as DirectX_Repair).

Q2: What should I do if EtherCAT connection fails?

A: Solution 1: Reinstall the npcap driver (note that you need to check **Install Npcap in WinPcap API-compatible Mode**).



Q3: How to get technical support?

A: Please refer to the contact information in the [Technical Support](#) section.

Technical Support

Online Help

- Support Website:
<https://zcnrg1e5hv0a.feishu.cn/wiki/KN1SwOqSxidq3dkxBuDcCLoinch>

Contact Information

- **Customer Service Phone:**
 - Prototype and Solution: Mr. Zhang 15013826073
 - Sales and Application: Mr. Chen 18820948820
- **Working Hours:** Monday to Friday 9:00-18:00

Community Support

- WeChat Official Account: Leadtron

Version Updates

v1.1.4 (2025-10-29)

New Features

- Added torque control mode, significantly optimizing heat generation and power consumption in gripping scenarios
- Teaching queue added current and delay parameters, allowing independent adjustment of current, as well as import and export
- Distinguished homing logic to enhance readability
- Fixed some known bugs

v1.1.0 (2025-09-12)

New Features

- Optimized EtherCAT communication to enhance stability
- Optimized oscilloscope implementation
- Added model-based motion control
- Changed to equivalent drive mode

v1.0.0 (2025-07-23)

Existing Features:

- Support for multiple connection methods such as EtherCAT/USB/PCAN
- 3D model real-time display of dexterous hand information
- Support for both DH116/DH2015, and provide left/right hand switching
- Support for precise control of each joint position
- Support for motion control through teaching queue, and ability to import and export files for saving
- Teaching queue supports full execution and single-step execution

- Support for real-time display of various sensor pressure values/proximity values/tangential force magnitude and direction
- Support for real-time rendering of heat maps for various sensors
- Real-time monitoring of position, speed, and other information for each joint
- Support for visual capture to control dexterous hand movement
- Support for layout customization, allowing free placement of sub-interface positions and sizes, and automatic saving
- Support for bright mode and dark mode
- Support for Chinese and English display

Bug Fixes:

- Fixed several known bugs

Historical Versions

- v1.0.6: Test version

Copyright Notice: © 2025 Shenzhen Ling Qiao Drive Control Technology Co., Ltd. All rights reserved. **User Agreement:** Using this software indicates that you agree to the [User Agreement](#).

*Document Version: v1.2 / Update Date: October 29, 2025**