



Linker MCG Product Manual



LinkerBot (Beijing) Technology Co., Ltd.

Revision History

Version No.	Date of Change	Change Description
V1.0	2026. 08.03	Initial release

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1. Product Overview

1.1 Product Introduction

Linker MCG (Linker Motion Capture Glove) is a high-precision hand motion capture glove built on MEMS attitude sensor technology. It integrates industry-grade MEMS modules with 0.001° measurement resolution and AI-powered gesture recognition algorithms in an all-in-one design.

The glove delivers synchronous, high-accuracy tracking of hand joint postures, enabling immersive, high-fidelity hand-machine interaction for professional use cases including virtual reality interaction, remote dexterous hand control, medical simulation training, and industrial remote maintenance.

1.2 Product Features

➤ **High-Precision Motion Capture**

Each glove integrates 7 sensors, with static attitude accuracy of Roll 0.1° , Pitch 0.1° , and Yaw 0.2° . It captures subtle movements — flexion, extension, and abduction — across the thumb, index, middle, ring, and little fingers, covering the full range of finger motion for lifelike, nuanced motion reproduction.

➤ **Real-Time Dynamic Mapping**

The system uses a 100Hz high-update-rate communication architecture with low-latency transmission. Both data transfer and feedback response are controlled at millisecond-level latency, delivering real-time synchronization between operator input and device feedback with no perceptible lag — ideal for high-intensity interactive scenarios.

➤ **Extended Battery Life**

The Linker MCG glove features a built-in 600mAh lithium battery, supporting 6 hours of continuous stable operation to meet the demands of long professional work sessions.

1.3 Product Display



Linker MCG Product View

2. Product Specifications

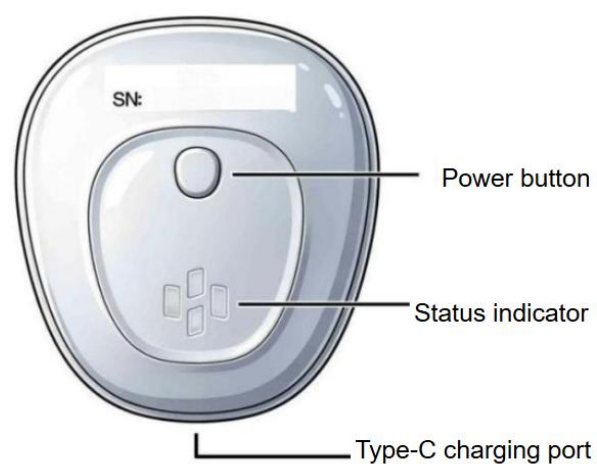
Specification	LMCG1-02
Sensors per Glove	7 units
Minimum Resolution	$\leq 0.001^{\circ}$
Static Attitude Accuracy	$\leq \text{Roll } 0.1^{\circ} / \text{Pitch } 0.1^{\circ} / \text{Yaw } 0.2^{\circ}$
Operating Voltage	3.3VDC
Battery Capacity	700mAh
Continuous Operating Time	6h
Data Calculation Frame Rate	600Hz
Data Output Frame Rate	100Hz
Operating Frequency Band	2.4GHz

3. Getting Started

3.1 Package Contents

序号	照片	内容	数量
1		Motion capture glove	1 pair
2		Wireless receiver	1 unit
3		Charging cable	1 unit
4		Power adapter	1 unit

3.2 Buttons and Interfaces



Button and Interface Diagram

4. Operation Guide

4.1 Power On/Off

Power On: Press and hold the power button for 2–3 seconds. Release once the multi-color indicator illuminates.

Note: Monitor the indicator light and avoid holding the button for an extended period. If prolonged pressing causes the indicator to flash red-blue alternately or stay solid red, wait for the light to turn off automatically before restarting. The device is fully booted when both left and right glove indicators flash blue in sync.

Power Off: While the device is active, press and hold the power button until the indicator goes out. The glove will shut down and stop all data collection and communication.

Indicator Status



No light
(Device off)



Multi-color light
(Device starting up)



Fast blue flash
(Standby)

Indicator Status Reference:

Scenario	Indicator Behavior	Description
Charging	Solid red light	Device is charging
Fully charged	Solid green light	Battery is fully charged
Device error	Fast red flash, then shutdown	Device failed to enter normal operation
Calibration mode	Irregular red/blue flashing	Device is in hardware calibration mode

4.2 Wearing Instructions

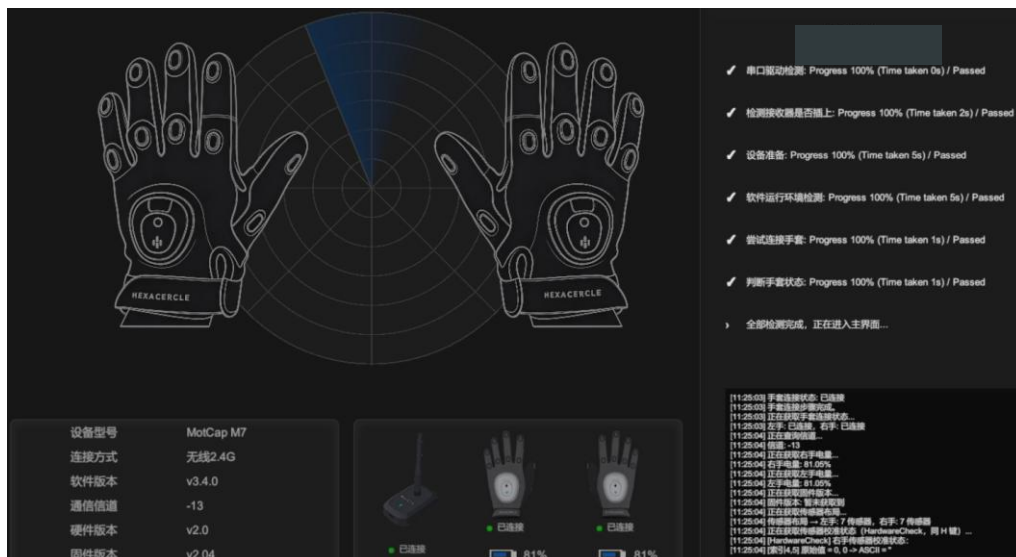
1. Put on and remove the glove gently. Never pull forcefully or yank the dorsal wiring, as this may loosen or break internal circuits.
2. Ensure hands are clean and dry. Remove rings, bracelets, watches, and other hand accessories to avoid blocking or compressing sensor components.
3. Position the glove as shown: align the four-finger sensors over the middle of the second knuckle, and place the thumb base sensor below the thumb root joint.



4.3 Host Software Instructions

(It is recommended to use a host equipped with a dedicated graphics card for smoother graphics performance.)

Plug the motion capture glove receiver into an available USB port on your computer, then launch the host software.



Environment Self-Test & Auto-Configuration:

On launch, the software automatically runs checks for drivers, operating environment, receiver connection, and glove status. Follow the on-screen prompts to complete the process.

Note: On first use with Ubuntu, the host software will automatically install required drivers and configure the environment. Enter your system password and restart the OS when prompted.

Quick Calibration:

Perform the calibration gestures shown on the interface.



Once the above steps are complete, the system is ready for use.

4.4 Teleoperation Instructions

Select dexterous hand model	Refresh port list	Select communication port	Connect dexterous hand	Disconnect dexterous hand

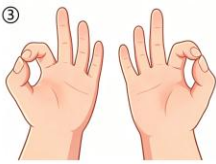
4.5 Dexterous Hand Calibration Procedure

After putting on the gloves and connecting to the dexterous hand, complete the following steps in order to calibrate motion mapping.

● Hand Adaptive Calibration

	
Make a fist with your four fingers, keep your thumb fully extended	Bend the first knuckle of your thumb; position the thumb as shown, bringing it as close as possible toward your little finger

● Pinch Calibration

Thumb-Index Pinch	Thumb-Middle Pinch	Thumb-Ring Pinch	Thumb-Little Pinch
			
Hold the pinch pose shown, then press the corresponding button  to run auto-calibration.	Hold the pinch pose shown, then press the corresponding button  to run auto-calibration.	Hold the pinch pose shown, then press the corresponding button  to run auto-calibration.	Hold the pinch pose shown, then press the corresponding button  to run auto-calibration.
Important: The first knuckle of both fingers must be bent during pinch calibration. The sensor cannot detect finger bending if the joints are fully straight.			

4.6 Data Broadcasting

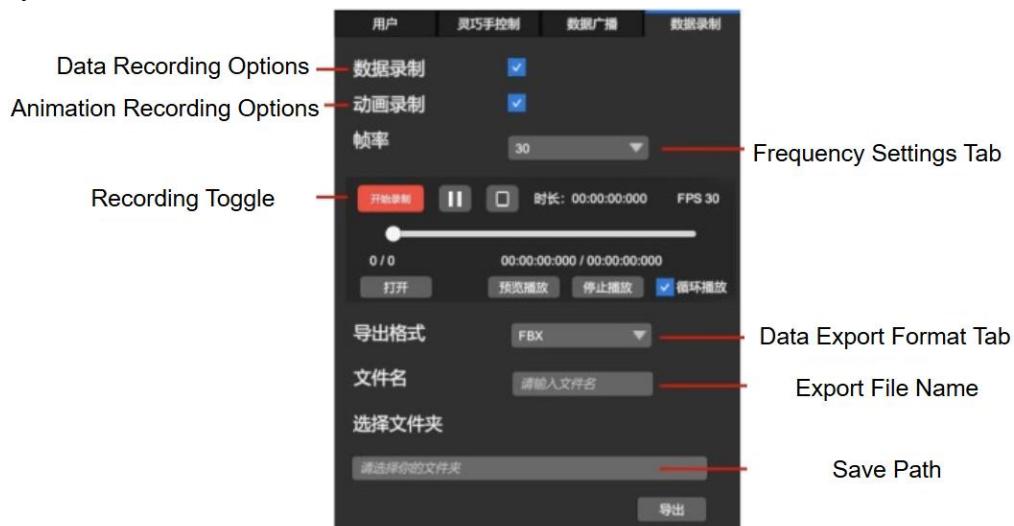
The host software supports outputting hand motion data via UDP broadcast for secondary development, remote data access, and integration with third-party systems. Enter the target IP address and port number to configure communication, then toggle the broadcast switch to enable/disable data output.



4.7 Data Recording

Record Data: Click Start Recording. When finished, enter a file name, select a save location, and click Export to store the file.

Playback Recording: Select a file path, enter the file name, and click Open to replay the recorded motion data.



5. After-sales Service Terms

- 1) The product includes a 12-month limited warranty from the purchase date.
- 2) Free repair or part replacement is provided for failures caused by manufacturing or material defects during the warranty period.
- 3) Warranty Exclusions:
 - Cosmetic wear from normal use

- Damage from improper operation, accidents, unauthorized disassembly, or non-compliance with the user guide
- 4) No returns or exchanges for non-quality-related issues.
 - 5) Contact official support immediately for malfunctions; do not disassemble the device yourself.
 - 6) Repairs outside the warranty period will be charged at standard rates.

Appendix

Technical Support Email: support@linkerbot.cn

Official Website: <https://linkerbot.cn>

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