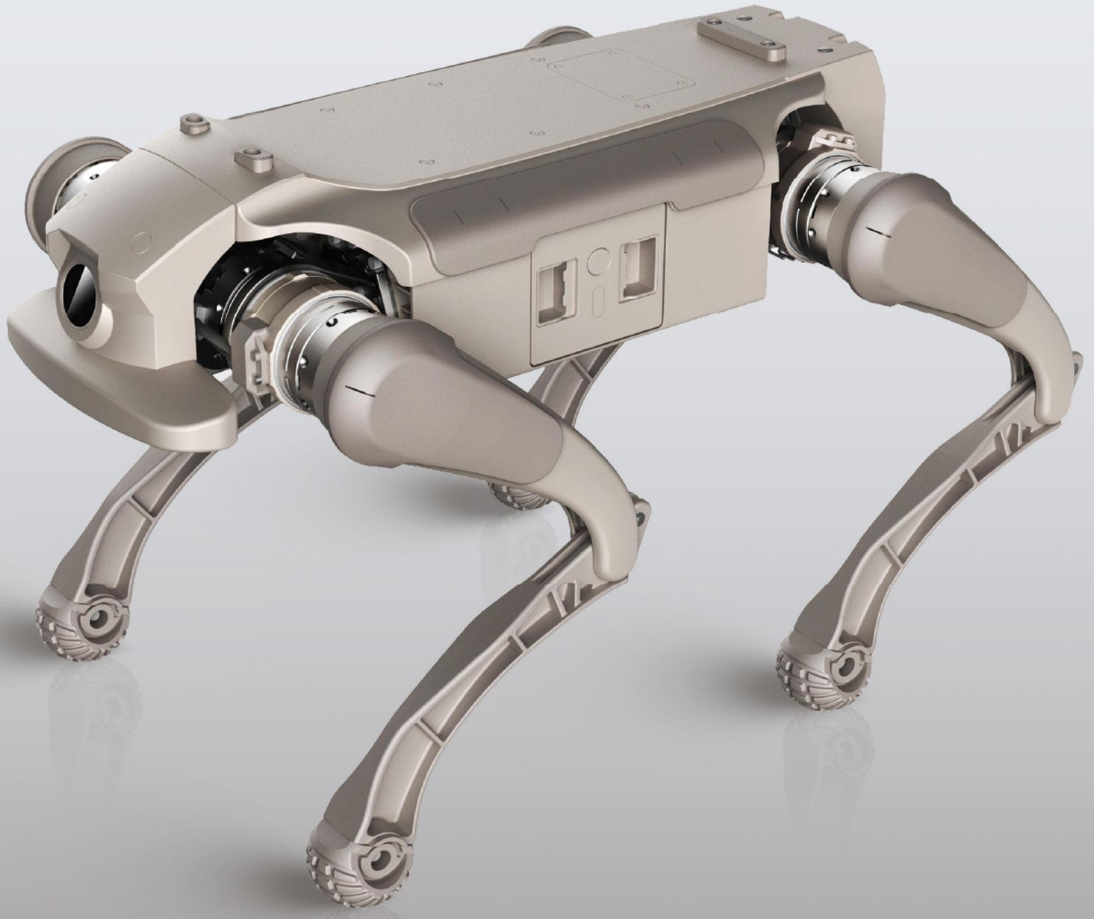
智元 AGIBOT | 智元酷拓 AGIQUAD

AGIBOT D1 Ultra Quardruped Robot

User Manual



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Legal Statement

Before using this product, users must carefully read the Manual; the quadruped robot is here referred to as the “robot dog”, and strictly follow the operating instructions provided herein.

The company shall not be held liable for any property damage or personal injury resulting from misuse or failure to adhere to the guidelines in this Manual. This product consists of multiple components—please ensure that it is kept out of reach of children to prevent accidents. This product is intended for use by individuals aged 18 and above only.

To prolong the service life of the product, do not use it in environments with high temperature or high pressure.

This Manual is intended to provide comprehensive information on the product’s functions and usage. However, due to continuous improvements and design updates, there may be discrepancies between the actual product and the descriptions in this Manual. In case of any differences in color, appearance, or other aspects, the actual product shall prevail.

Usage Restrictions

- This product must not be used by individuals with physical, sensory, or mental impairments, or by those lacking relevant experience and knowledge (including children), unless supervised or instructed by a responsible guardian to ensure safe operation.
- Do not allow children to treat this product as a toy. Supervise children and pets during operation to keep them at a safe distance.
- If the power cord is damaged, it must be replaced with a special cord or component obtained from the manufacturer or authorized service provider.
- Do not operate the product in elevated areas without protective barriers.
- If the product exhibits abnormal behavior such as leg flailing or violent shaking, press the Emergency Stop button to activate the soft-stop safety mode. The robot will automatically lie down. Resume operation only after troubleshooting and resolving the issue.
- Do not place the product upside down. Do not use the robot's legs as handles for carrying.
- Do not operate the product in environments above 40°C or below 0°C.
- Do not operate the product in areas with electromagnetic interference.
- Do not operate the product in environments with Wi-Fi or 2.4G signal interference.

Before starting the product, ensure there is at least 1 meter of clear space around it, with no people or objects in the motion path, to prevent collisions.

- When the product is ascending or descending stairs or slopes, do not stand below it to avoid injury in case of a fall.
- Do not place children, pets, or any objects on the robot, whether it is in motion or stationary.
- Do not insert hands into the range of motion of the robot's joints during transport, to avoid pinching or cuts.
- Keep body parts away from moving components.
- Power off the robot and unplug the power cord before cleaning or performing maintenance on the robot or charging dock.
- Do not wipe the robot or charging dock with a wet cloth or rinse them with any liquids.
- Do not use third-party batteries, power cords, or charging docks. Only the included charging dock should be used.

Notes

(1) Joint and Cable Inspection

Check for any foreign objects around the joints, inspect all cables for damage, and ensure that the foot pads are intact and undamaged.

(2) Battery Level and Camera Cleaning

Check for any foreign objects around the joints, inspect all cables for damage, and ensure that the foot pads are intact and undamaged.

(3) Product Cleaning Caution

Do not use alcohol or any liquid containing solvents or corrosive substances to clean this pro- duct.

(4) Proper Placement and Ground Conditions

When placing the robot, ensure that the legs are in a naturally unloaded state to prevent stress on the joints. Do not rest the robot on hard, sharp, or uneven surfaces to avoid scratching the body.

(5) Foot Pad Wear

When placing the robot, ensure that the legs are in a naturally unloaded state to prevent stress on the joints. Do not rest the robot on hard, sharp, or uneven surfaces to avoid scratching the body.

(6) Safe Operation and Terrain Adaptability

Keep the robot within your line of sight and maintain a safe distance from obstacles and potential collision points. Although the robot has good terrain adaptability, always assess whether the surface is appropriate.

(7) Speed, Turning, and Complex Terrain

Sharp or fast turns may cause loss of control, especially on steep, uneven, or unknown terrain. Avoid risky maneuvers and reduce speed accordingly.

(8) Steep Slopes and Climbing Angles

Operate within the specified maximum climbing angle. Avoid turning sharply on steep slopes to prevent loss of stability. Exercise caution on steep or inclined surfaces.

(9) Maximum Speed and Prohibited Usage Environments

The robot can reach speeds up to 3.5 m/s on flat surfaces. Do not use it on complex terrain, slip- pery surfaces, cluttered areas, slopes beyond specification, or near sharp objects.

Notes

(10) Joint and Battery Condition Check

If you notice loose joints, failure to stand, or excessive noise during operation, stop use immediately, power off the robot, and seek professional service.

(11) Low Battery Warning

When the battery is low, the robot may not have sufficient power to perform movements. Charge promptly to avoid accidents.

(12) Safety Precautions

Avoid contact with moving parts to prevent pinching or injury. Do not touch exposed metal surfaces of joint motors during or immediately after operation to avoid burns.

(13) Heat Dissipation and Cleaning

Prolonged operation may cause motor overheating. Allow the robot to rest periodically. Clean the product promptly if it becomes dirty.

(14) Power Supply Specifications

Use only fast-charging cables that meet the product's specifications.

(15) Shutdown Notice

Power off the robot immediately after use.

Battery and Charging Precautions

(1) Battery Usage Restrictions

Do not disassemble the battery or extract the battery electrodes for use by any means.

(2) Adapter and Cleaning

Do not clean the power adapter with alcohol or other flammable agents to avoid potential safety hazards.

(3) In Case of Battery Leakage

If battery leakage causes electrolyte to come into contact with your eyes, avoid rubbing them. Rinse immediately with clean water and seek medical attention promptly.

(4) Abnormal Conditions

If the battery emits an unusual odor, smokes, deforms, or exhibits other abnormalities during charging, unplug the power adapter immediately and inspect the device.

(5) Safe Temperature

The power adapter may become hot during charging. Avoid prolonged contact to prevent burns.

(6) Power Adapter

Do not use a damaged power adapter. Only use the official power adapter. Using unofficial adapters may result in battery leakage, overheating, fire, or explosion.

(7) Charging Time

The battery charging time should not exceed 24 hours. Overcharging may reduce battery lifespan

Warning

FCC Warning

Any Changes expressly or modifications not approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference,and

(2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions,may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment .This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.This equipment should be installed and operated with minimum distance 20cm between the radiator &you body

Warnning

IC Warning

ISEDC RSS warning：

This device complies with Innovation, Science and Economic Development Canada Compliance licence-exempt RSS standard (s). Operation is subject to the following two conditions:

(1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique

Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

ISEDC Radiation Exposure Statement:

This equipment complies with ISEDC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.

IC exposition aux radiations:

Cet équipement est conforme aux limites d’exposition aux rayonnements RF de l’isedc établies pour un environnement non contrôlé.

Cet émetteur ne doit pas être co-localisés ou fonctionner en conjonction avec une autre antenne ouémetteur.Cet équipement doit être installé et utiliséavec une distance minimale de 20cm entre leradiateur & votre corps.

Warnning

Other Warnings

the user manual for LE-LAN devices shall contain instructions related to the restrictions mentioned in the above sections, namely that:

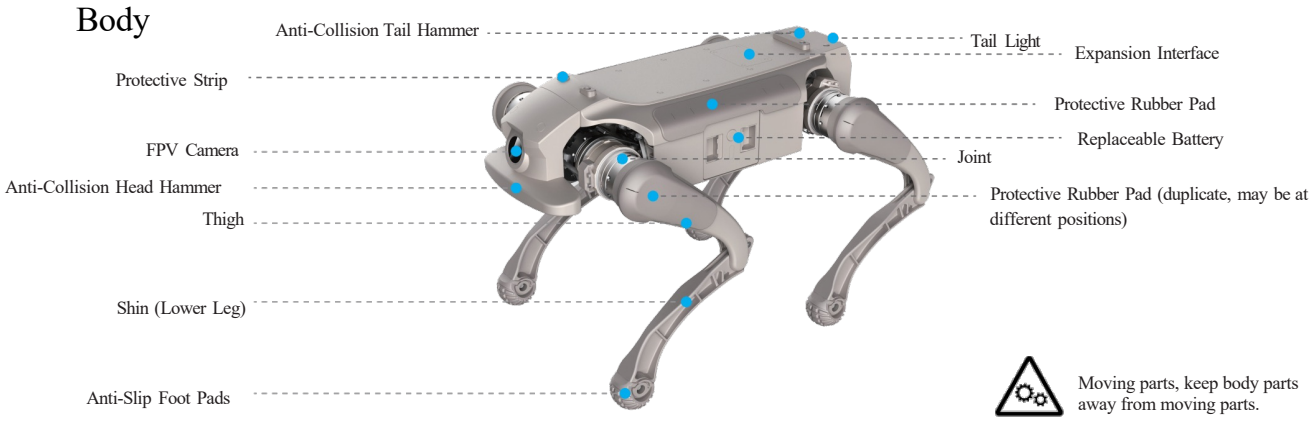
a) any devices capable of operating in the band 5150–5250 MHz shall only be used indoors to reduce the potential for harmful interference to co-channel mobile satellite systems (this requirement does not apply to OEM devices installed in vehicles by vehicle manufacturers);

Product Overview

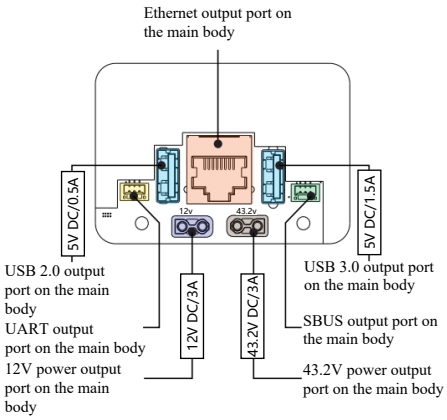
The ZYCXD105U quadruped robot features 12 degrees of freedom and supports multiple loco-motion gaits and motion behaviors. It also provides an open SDK for motion control algorithm devel- opment and communication protocols, enabling users to conduct secondary.

Component Introduction

Body



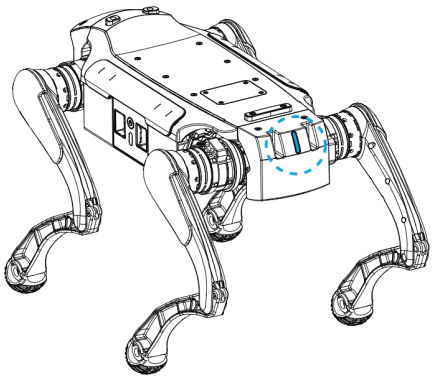
Expansion Port

No.	Interface Name	Quantity	Description	Remarks
1	Ethernet Port	1	RJ45 Interface: Supports 1000 Mbps transmission speed for high-speed data transfer. It is used for network connectivity, remote monitoring, data transmission, and other related applications.	
2	USB Port	2	Type-A Interface: Used to connect external storage devices, cameras, sensors, and other USB devices. It provides high-speed data transfer and power supply.	
3	Power Port	2	Standard DC Power Interface: Provides stable power supply, supporting 12V and 43.2V voltage outputs, meeting the power requirements of the robotic dog and its mounted devices.	
4	SBUS Port	1	Standard SBUS Interface: Used to connect remote controller receivers or other communication devices supporting the SBUS protocol, enabling precise remote control command transmission.	
5	UART Port	1	Standard UART Interface: Used to connect embedded systems, communication devices, or other devices supporting the UART protocol. It facilitates data exchange and control between devices through asynchronous serial communication.	

Disassembly and Installation Method

Use the 2mm hex screwdriver included in the toolkit to loosen the four M4 screws in sequence and remove the cover plate. To reinstall, place the cover plate back and tighten the screws in order.

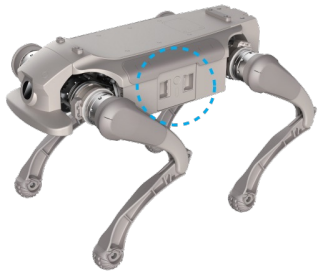
Product Descriptions

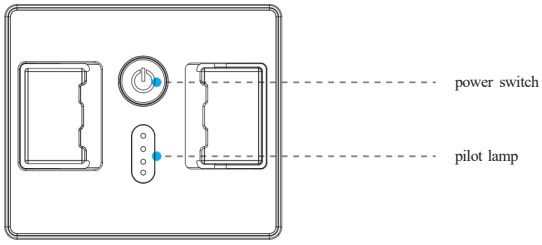


Lighting Effects Description

The light of a lamp	Lamp signal	Remarks
Blue is always on	The boot is complete	
Blue flashing	On the way to boot	
White is always on	Rage mode	In this mode, your movement ability is improved and special skills are unlocked
The green light is always on	The tracking mode is enabled	
The yellow light is always on	The battery is less than 20% charged	The battery is too low to enable the rage mode
The yellow light is flashing	Battery power is less than 5%	The battery is low and needs to be charged immediately
The red light is always on	The joints are too hot and need to be cooled	
Blinking red lamp	The system is abnormal and needs to contact the after-sales service	

Power Supply Introduction





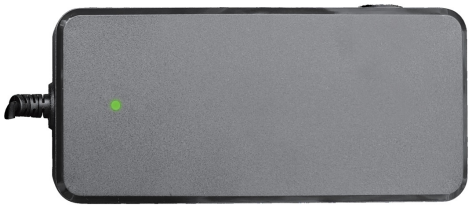
Battery display in on state

Battery capacity LED indicator (idle and discharge)					
No.	SOC(%)	LED1	LED2	LED3	LED4
1	0~14	Flashing	OFF	OFF	OFF
2	15~24	ON	OFF	OFF	OFF
3	25~49	ON	ON	OFF	OFF
4	50~74	ON	ON	ON	OFF
5	75-100	ON	ON	ON	ON

Battery display in charge state

Battery capacity LED indicator (charging)					
No.	SOC(%)	LED1	LED2	LED3	LED4
1	0~24	Flashing	OFF	OFF	OFF
2	25~49	ON	Flashing	OFF	OFF
3	50~74	ON	ON	Flashing	OFF
4	75~99	ON	ON	ON	Flashing
5	100	ON	ON	ON	ON

Power adapter



Light off	No power
Light on	Connect mains power (100V~240V)

Preparation Before First Use

Unboxing

The robotic dog must be lifted out of the shipping crate as a single unit while powered off. During handling, support the body with both hands to avoid placing weight on the legs. Legs may only be adjusted slightly along their natural joint axes for minor alignment. Never force joints beyond their limits by bending against their natural range of motion.

Improper handling may cause joint damage, encoder misalignment, or abnormal standing!

Start up

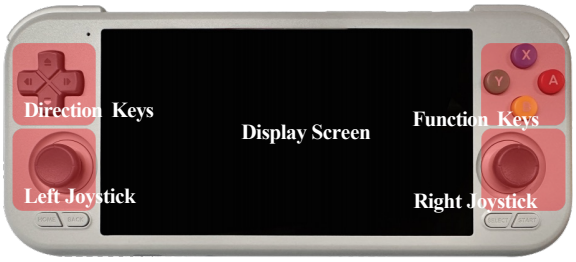
Remove the robot dog from the packaging box and place it on a flat surface.Take out the battery and insert it into the robot dog's battery compartment.Press the battery power button briefly once, then press and hold for 5 seconds. Release and wait for 20 seconds to complete startup.

Shut down

Ensure the robot dog is in a lying-down position, then press and hold the power button for over 3 seconds. Once all LEDs on the battery have turned off, the device will enter the shutdown state.

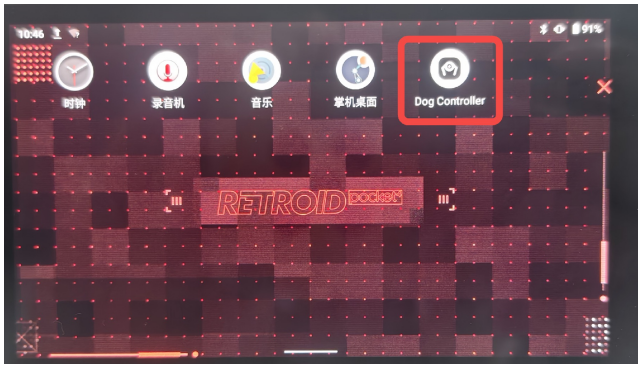
Remote Control User Guide

Remote Controller Introduction



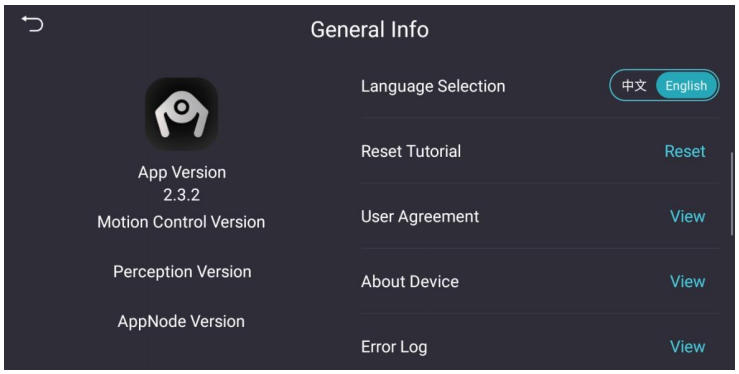
Connection Method

1. Press and hold the power button at the top of the remote controller to power on.
2. Tap "Dog Controller" to enter the application.
3. The APP main page will be displayed.



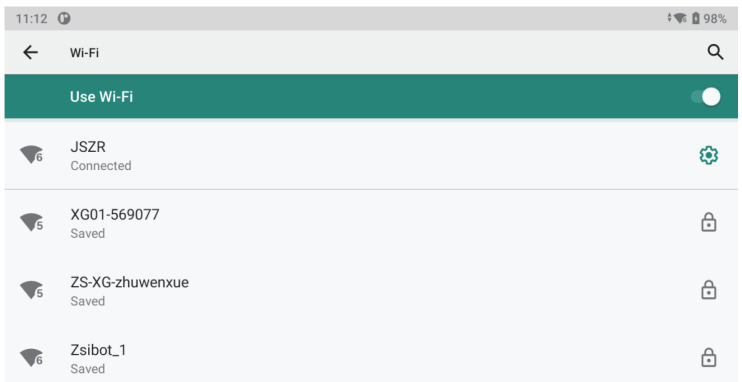
Product Usage

4. To enter the system general settings interface, tap the button in the upper left corner.



5. Tap “Not Connected” in the upper right corner to start the remote controller connection.

6. Select the WiFi of the robot dog to connect. The WiFi name can be found on the device nameplate, in the format “XG01_3BW001”.



Product Usage

7. Connection successful

Operations Instructions

This product provides two operating modes: Normal Mode and Turbo Mode.
Normal Mode: Provides stable movement capabilities and standard actions, suitable for daily use.
Turbo Mode: Enhances movement performance and unlocks additional special actions, suitable for research and demonstration scenarios.

	Action	Normal Mode	Turbo Mode
Normal/Turbo Mode Switch		Operation in APP	
General Actions	Stand	Operation in APP	
	Stand Damping (Slowly Lie Down)	Operation in APP	
	Lie Down (Emergency Stop)	L1+R1 or Operation in APP	
Movement Actions	Forward/Backward/Left/Right Movement	Push Left Joystick Forward/Backward/Left/Right	
In-place Actions	Idle/Moving Switch	Operation in APP	
	Pitch Adjustment	Push Right Joystick Forward/Backward	
	Horizontal Turn	Push Right Joystick Left/Right	
	Left/Right Head Tilt	Y/A	
	High/Low Posture	X/B	
Special Actions	Jump Up	/	Operation in APP
	Forward Jump	/	Operation in APP
	Backflip	/	Operation in APP
	Waving Greeting	/	Operation in APP
	Biped Standing	/	Operation in APP

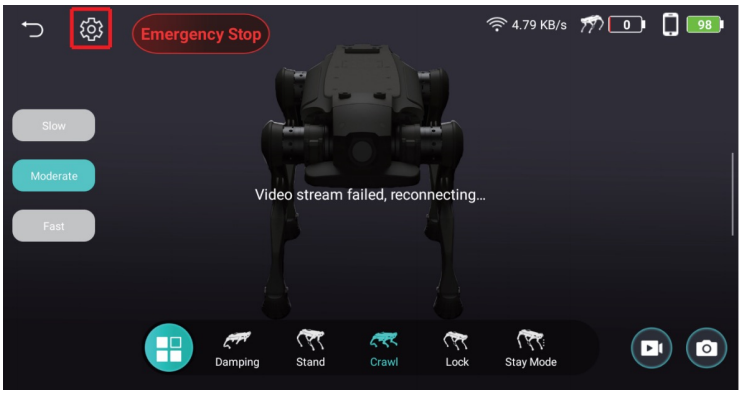
Warning: Special actions in Rage Mode may affect the device lifespan.
Performing special actions in Turbo Mode imposes heavy loads on thejoint modules. Prolonged opera- tion may cause acceleratedjoint wear and significantly reduce service life.
Please enable with caution and reasonably control the duration of use to ensure long-term stability of the device.

Enable Turbo Mode

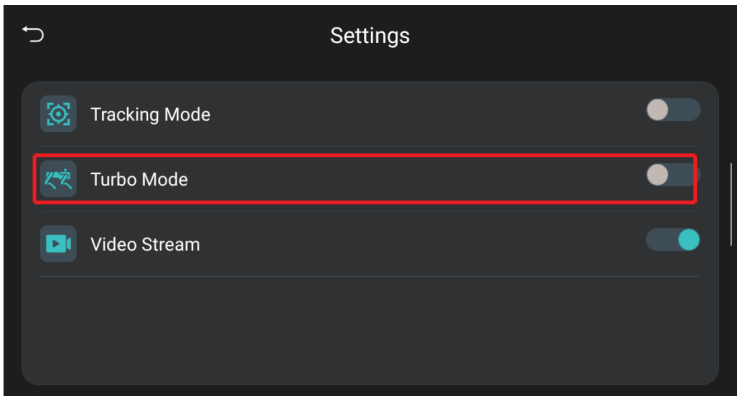
Product Usage

Enable Turbo Mode

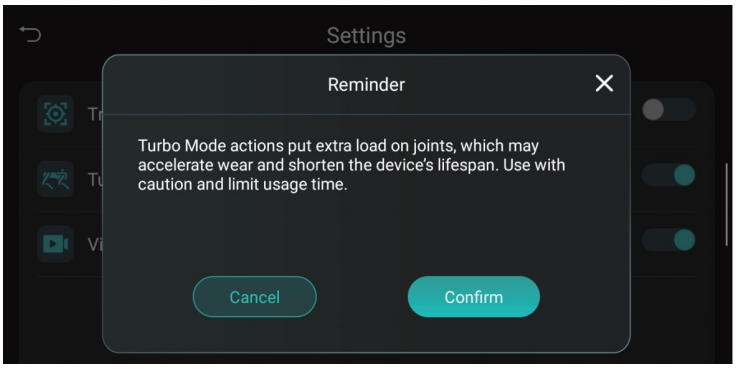
1. Tap the settings button in the upper left corner.



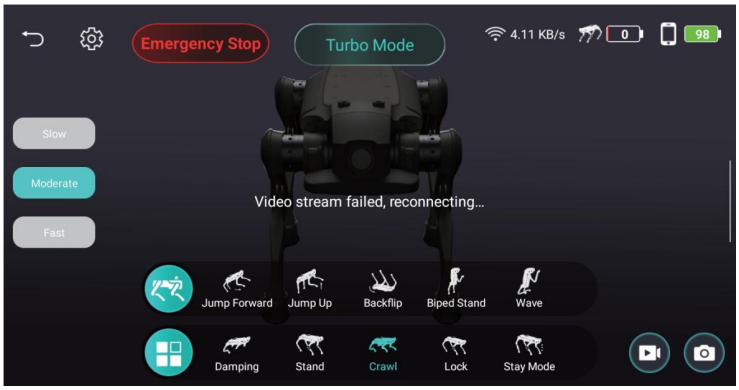
2. Enable Turbo Mode.



3. A Turbo Mode activation prompt will appear. If confirmed, tap “Confirm” to enable.



4. Turbo Mode Enabled.



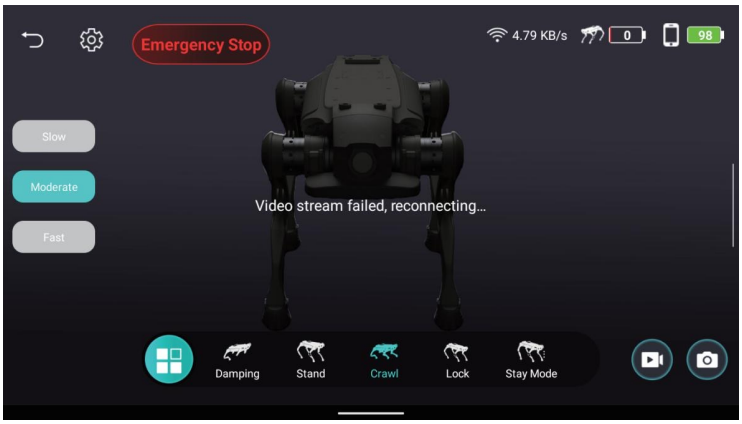
Product Usage

Function Description

1. Basic Control

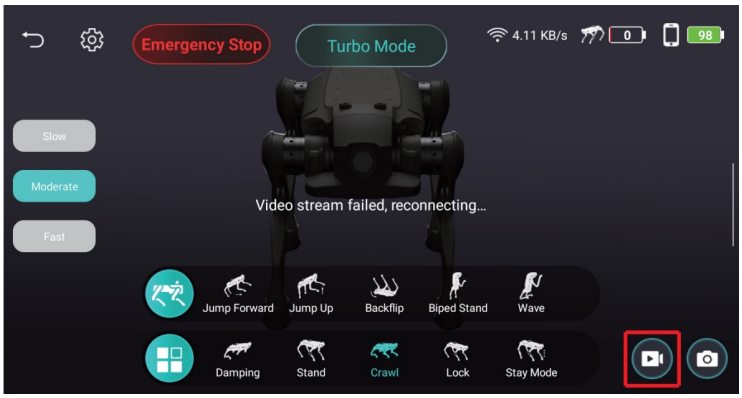
a. Tap the control button in the lower right corner to enter the control page.

b. You can control the robot dog's movement and posture changes by tapping the center button on the screen, using the virtual joystick, or virtual buttons.



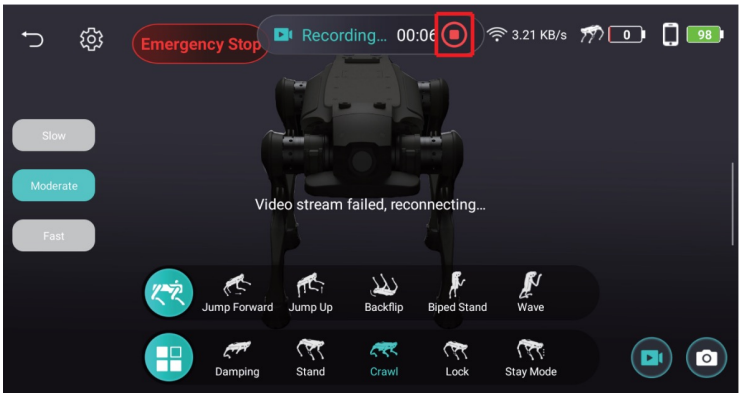
2. Screen Recording

a. Tap the screen recording button in the lower right corner of the screen to start recording.



b. Recording in progress. Tap the red stop button to end recording.

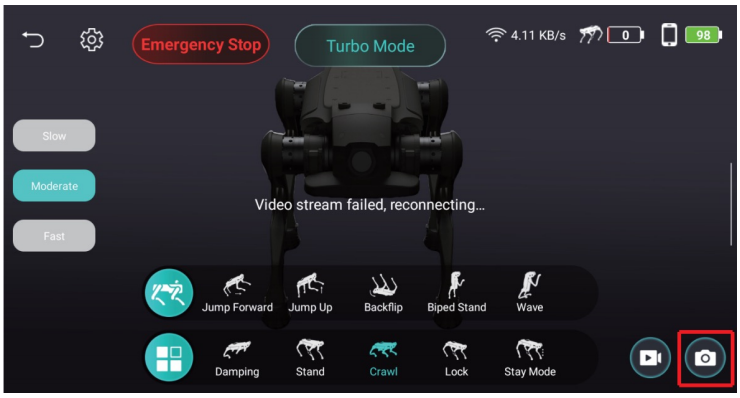
Product Usage



c. Recorded videos can be viewed in the remote controller's gallery.

3. Screenshot

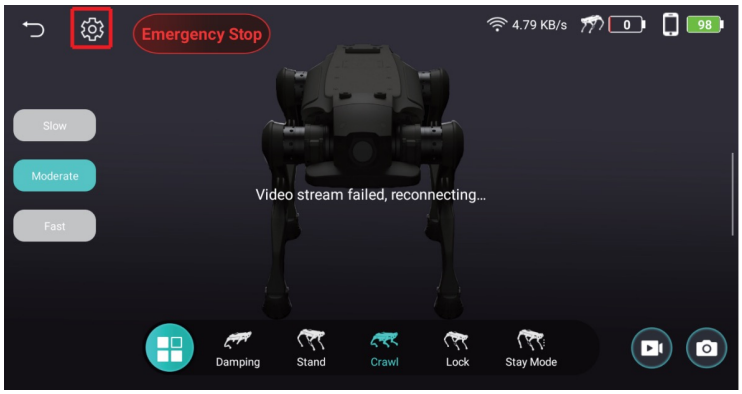
a. Tap the screen recording button in the lower right corner to take a screenshot.



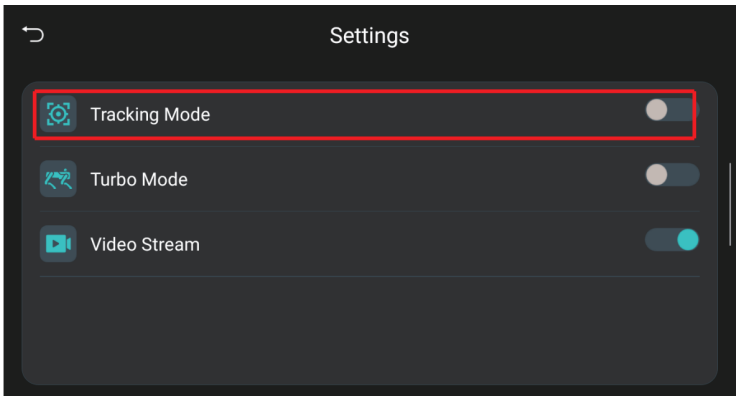
b. Screenshots can be viewed in the remote controller's gallery.

4. Tracking Function

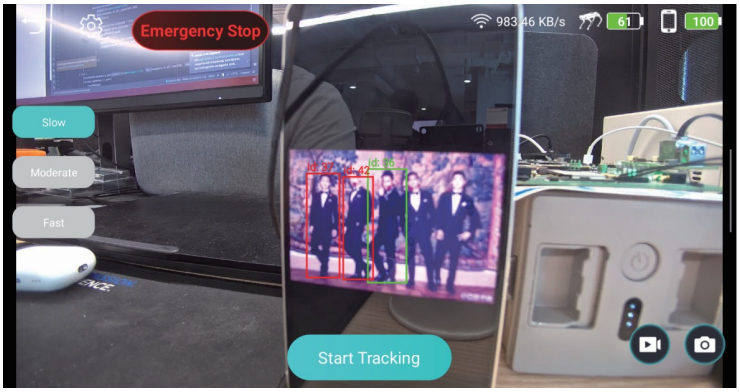
a. Tap the settings button in the upper left corner.



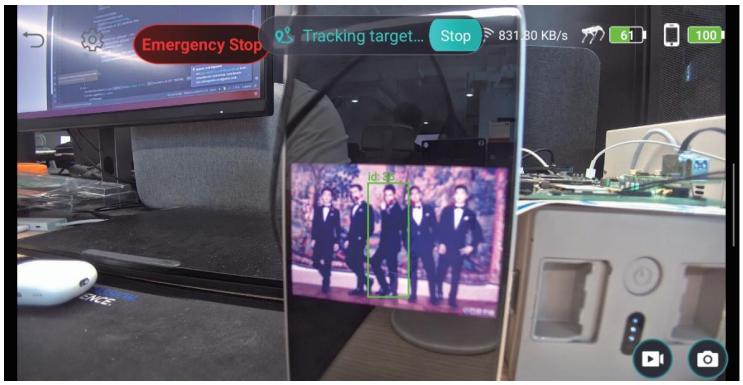
b. Select the Tracking Function.



c. Red boxes identify all trackable targets. Tap to select a target, then tap “Start Track- ing” to activate the tracking function. (Once activated, tracking will continue. To avoid acci- dentally targeting unintended objects, please cancel tracking in time.)

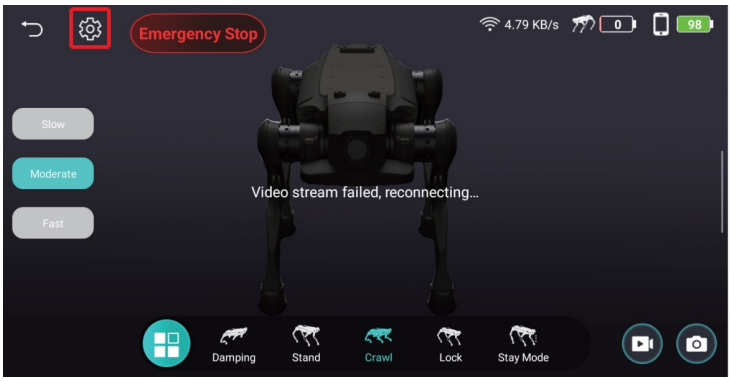


Product Usage

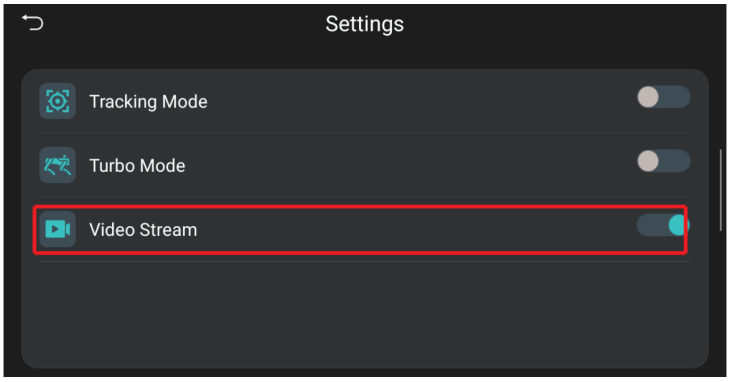


5. Video Stream Toggle

a. Tap the settings button in the upper left corner.



b. Select the Video Stream toggle and save the settings.



Product Parameter

Category	Specification	Description
Basic Information	Material	Aluminum alloy with high-strength engineering plastic
	Standing Dimensions (L × W × H)	630 mm × 360 mm × 420 mm
	Lying Down Dimensions (L × W × H)	670 mm × 435 mm × 145 mm
	Total Weight (with battery)	16kg
	Operating Temperature	0°C ~40°C
	Ingress Protection Rating	IP54
Performance Parameters	Maximum Speed	3.7 m/s
	Effective Payload	5kg
	Continuous Stair-Climbing Height	16 cm
	Maximum Climbing Angle	30° standard, up to 40° maximum
	Vertical Jump Height	35 cm
Electrical parameters	Battery Module	Rated capacity: 4.6Ah, Voltage: 43.2V
	Charging Duration	about 1 hour (battery level 10%-90%)
	Battery Life (Operating Time)	1–2 hours
	Operating Range	6±1 km

Notes：

(1) For details on the expansion interface usage, refer to the Expansion Interface Manual.

(2) For warranty terms, please refer to the Product Warranty Manual;

(3) All parameters are based on Laboratory test data. Actual performance may vary depending on environment and operating conditions.

Troubleshooting

Frequently asked questions	Treatment measure
What if the remote control can't connect to the robot dog?	First, confirm that the robot dog has been started, and then confirm that no other version of the APP is running in the background of the remote control. If you still cannot connect to the robot dog, restart the robot dog and the APP and try to connect again.
What if the handle operation of the connected robot dog has no response?	Make sure the handle is connected to the correct robot WiFi. If it is connected but still cannot control, wait 10 seconds and try again. If there is no response, restart the robot.
Is it normal for a robot dog to stop moving on its own?	It may be that the robot dog's protection function is triggered. Please wait for 10 minutes and try again. If you still cannot control the robot dog to continue moving, please check whether the battery is sufficient first, and then check whether the handle signal is disconnected.

Transportation and Storage

（1）Product Transportation

The size of the packing box is 80cm*45cm*25cm. Before carrying the box, please take the battery out of the robot dog. During transportation, be sure to keep the front of the box facing up.

（2）Storage environment

When storing the power adapter and the entire unit, place them in a dry and cool environment to avoid direct sunlight, fire sources, and strong electromagnetic fields. The recom mended storage temperature is between 20℃ and 25℃ . Do not store the product in environ- ments exceeding 60℃ or below-10℃ . For long-term storage/ it is advisable to maintain the temperature between 20℃ and 25℃/ with relative humidity at 0% to 60% RH/ and keep the total battery charge below 50%.

（3）Battery precautions

Long idle time may affect battery performance, avoid deep discharge to maintain battery state.

The battery will stop charging automatically when it is fully charged, but it is recommended to disconnect the connection to maintain the battery state.

Please check the battery charge regularly and charge and discharge every 3 months to maintain battery activity.

If the charge is less than 20%, it should be charged to 40%-60% for storage in time to avoid battery damage.

Risk of explosion if the battery is replaced by an incorrect type:

Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery. that can result in an explosion:

Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery. that can result in an explosion:

Leaving a battery in an extremely high temperature surrounding environment that can result in an explosion or the leakage of flammable liquid or gas:

A battery subjected to extremely low air pressure that may result in an explosion or the leakage of flammable liquid or gas;

（4）handle gently

After starting up, please avoid lifting or carrying this product. Please be sure to turn off the machine before carrying it.

Please handle the parts gently to avoid mechanical impact and damage.

Hazardous Substances Information

Component Name	Hazardous Substances					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
Circuit Board	×	O	O	O	O	O
Metal Plate	×	O	O	O	O	O
Housing	O	O	O	O	O	O
Battery	×	O	O	O	O	O
Other Components	O	O	O	O	O	O

This inspection is based on the provisions of SJ/T 11364.

O Indicates that the content of the hazardous substance in all homogeneous materials of the component is below the limit requirement specified in GB/T 26572.

× Indicates that the content of the hazardous substance in at least one homogeneous material of the component exceeds the limit requirement specified in GB/T 26572.

This product contains a rechargeable lithium battery pack. It is harmful to the environment when discarded. Please remove the battery from the main unit before disposal and handle it properly:

1. Before removing the battery, please power off the device and deplete the battery charge as much as possible.
2. Do not damage the battery casing to prevent potential hazards.
3. The removed battery must be handed over to a professional recycling agency for proper disposal.

Warranty Statement

Warranty Time

Main unit		Bionic quadruped robot	Starting time
Whole machine warranty	One year		The calculation starts after the product is activated(or 90 days after receipt if not activated)
Defects liability period	Motherboard	12 months	
	Joint module motor	12 months	
	Telecontroller	6 months	
	Charger	6 months	
	Cell	6 months / 200 cycles	
	FPV Cameras	6 months	

* Battery warranty time is a conditional first-to-arrive mode, that is, the warranty period or the maximum number of cycles will be the end of the warranty

* The remote control has a handle remote control and a screen remote control, the warranty time is different,the handle remote control is 12 months, the screen remote control is 6 months

Non-Insurance Clause

1. Damage to the robot caused by user's secondary development (including but not limited to: damage caused by high-speed movement of the equipment, damage caused by falling of the equipment, damage caused by changes in the limb parameters of the equipment, etc.);
2. Damage caused by hardware modification;
3. Unauthorized shell opening;
4. Damage caused by force majeure or extreme environment (including but not limited to strong magnetic field / high temperature / low temperature / natural disaster);
5. Appearance damage, structural parts damage and internal circuit damage caused by improper use;
6. Damage caused by collision and fall;
7. Damage caused by liquid and foreign matter entering the machine dog;
8. Data security accidents;
9. The product is used for illegal purposes (including but not limited to war activities, terrorism), violates Chinese mainland laws and regulations, violates the laws and regulations of the country or region where it isused, violates international conventions, etc., any problems arising therefrom are not covered by the warranty;
10. Improper use in the Frenzy mode will result in the loss of warranty for the device (including but not limited to: impact damage caused by high speed movement of the device, fall damage caused by special actions of the device, etc.).

Warranty Statement

Remote technical support

1. Support requirements: equipment serial number, fault description and on-site image data;

2. After receiving the request, the technical support will be diagnosed by the front-line engi- neer and give the diagnosis result and maintenance plan.

Maintenance support

1. Repair: For the faulty equipment, you can apply to send it back to the designated mainte- nance center of our company. If the product quality is detected, the relevant labor costs and

spare parts costs will be exempted. If the product is not guaranteed, the corresponding labor costs, spare parts costs, logistics costs and other costs will be charged;

2. Maintenance period: 7 working days after receiving the equipment for repair (additional communication is required in special cases);

3. Logistics: Whether or not it is insured, the round-trip logistics costs shall be borne by you. The choice of logistics shall be designated by our company. In case of special circumstances, we can communicate with you.

Exception Clause

1. The Company shall not bear any third party claims arising from the use of the products in any form;

2. The Company shall not be liable for data storage, loss or leakage (customers need to back up by themselves).

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