TRON 2 Biped and Wheeled-Legged Robot

Quick Start Guide V1.0

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LIMX DYNAMICS

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LIMX DYNAMICS TECHNOLOGY CO.,LTD
Address: 15th Floor, Building E, Nanshan I Valley, Shenzhen, China

Safety Notice and Disclaimer

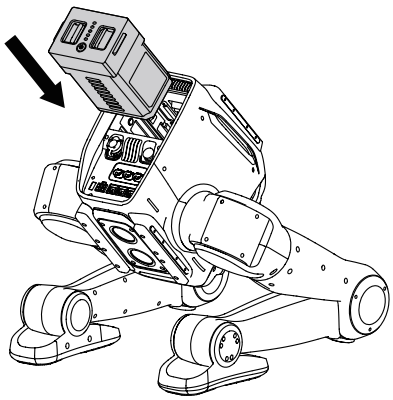
1. **Read before use:** Read and understand this guide and the **TRON 2 User Manual** before operation.
2. **Operator Responsibility:** The robot's legs move fast and with high force. Only trained personnel shall operate it, and only for lawful purposes. The user is responsible for any injury, property damage, or third-party loss caused by improper use, unauthorized modification, or use in hazardous environments.
3. **Safe Environment:** Keep people out of the robot's range of motion, keep it in sight, and keep it at least 1 m from obstacles, people, and water. The robot is not waterproof or dustproof. Use it at -5 ° C to 40 ° C, away from moisture, dust, flammables, explosives, and strong electromagnetic interference, and never outdoors in fog, rain, snow, or thunderstorms. Use a safety tether for first-time remote control or early development testing.
4. **Emergency Stop:** Before operation, learn how to use the remote emergency stop and the Emergency Stop Button on the robot body.
5. **Revisions:** This guide may change with firmware or feature updates. Always refer to the latest official release from LimX Dynamics.

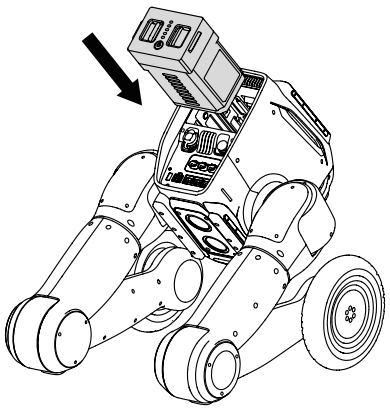
An emergency stop cuts power to all motors immediately, and the robot may fall.
Keep people and fragile objects away from the robot.

1. Preparation and Power-On

1.1 Prepare the Equipment

- **TRON 2 Robot:** Insert a fully charged battery until the latch locks. Place the robot on flat, open ground with good traction, in the ready posture and self-balanced.
- **Remote controller:** Switches modes, controls motion, triggers an emergency stop, and runs zero calibration. Make sure it is charged before use.





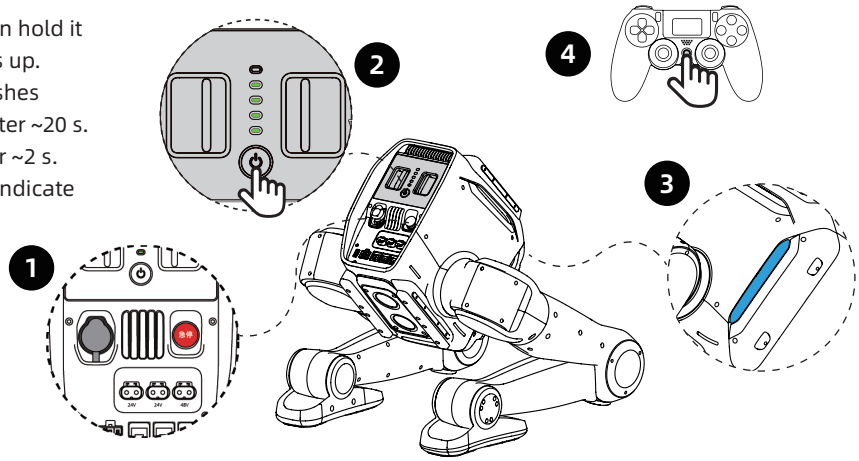
Set the Ready Posture Before Power-On

- The ready postures differ: in the biped configuration, the knees point forward; in the wheeled-legged configuration, the knees point backward, as shown above.
- Never power on the robot in any other posture, such as with the legs splayed, the wheels turned outward, or the robot on its side or back. The head may hit the ground, the legs may twist outward, or the robot may tip over.

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1.2 Power On the Robot

1. Confirm that the robot is in its ready posture (see 1.1) and the Emergency Stop Button on the robot body is released.
2. Press the robot's Power Button for ~0.5 s, then hold it for ~3 s until the Battery Level Indicator lights up.
3. Wait for the self-test: the Status Indicator flashes white, then turns solid blue, cyan, or green after ~20 s.
4. Hold the remote controller's Power button for ~2 s. Blue signal bars at the top left of the screen indicate a connection to the robot.



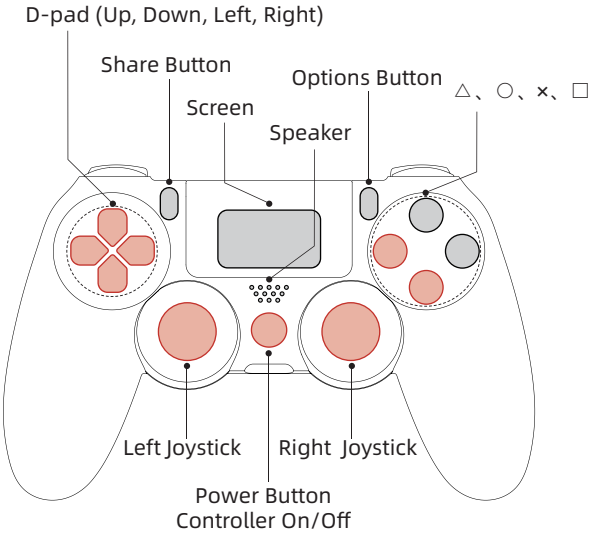
2. Remote Controller

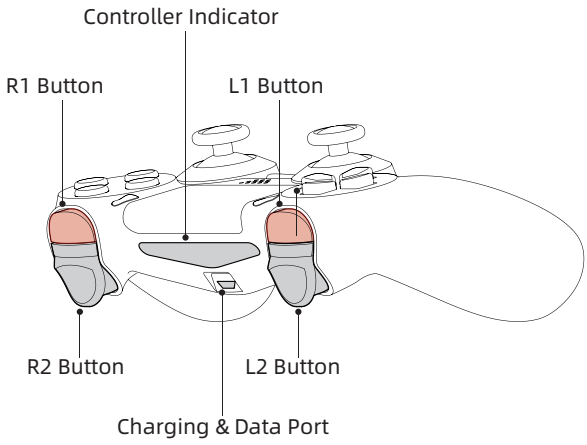
Without the remote controller, you can control the robot from the Robot Management Page (see Section 4.6 of the TRON 2 User Manual).

2.1 Turn the Remote Controller On and Off

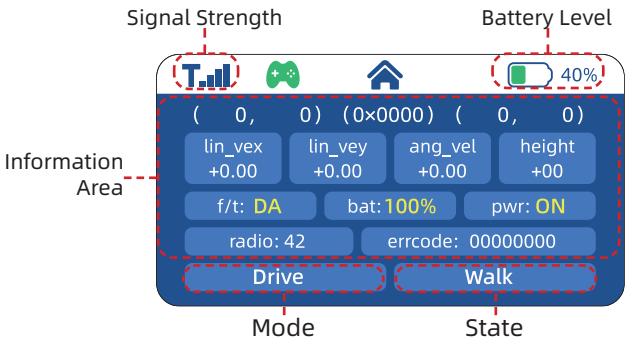
- On: Hold **Power** for ~2 s until the controller beeps and the screen lights up.
- Off: Hold **Power** again for ~2 s until the controller beeps and the screen turns off.

2.2 Remote Controller Buttons





2.3 Screen Information

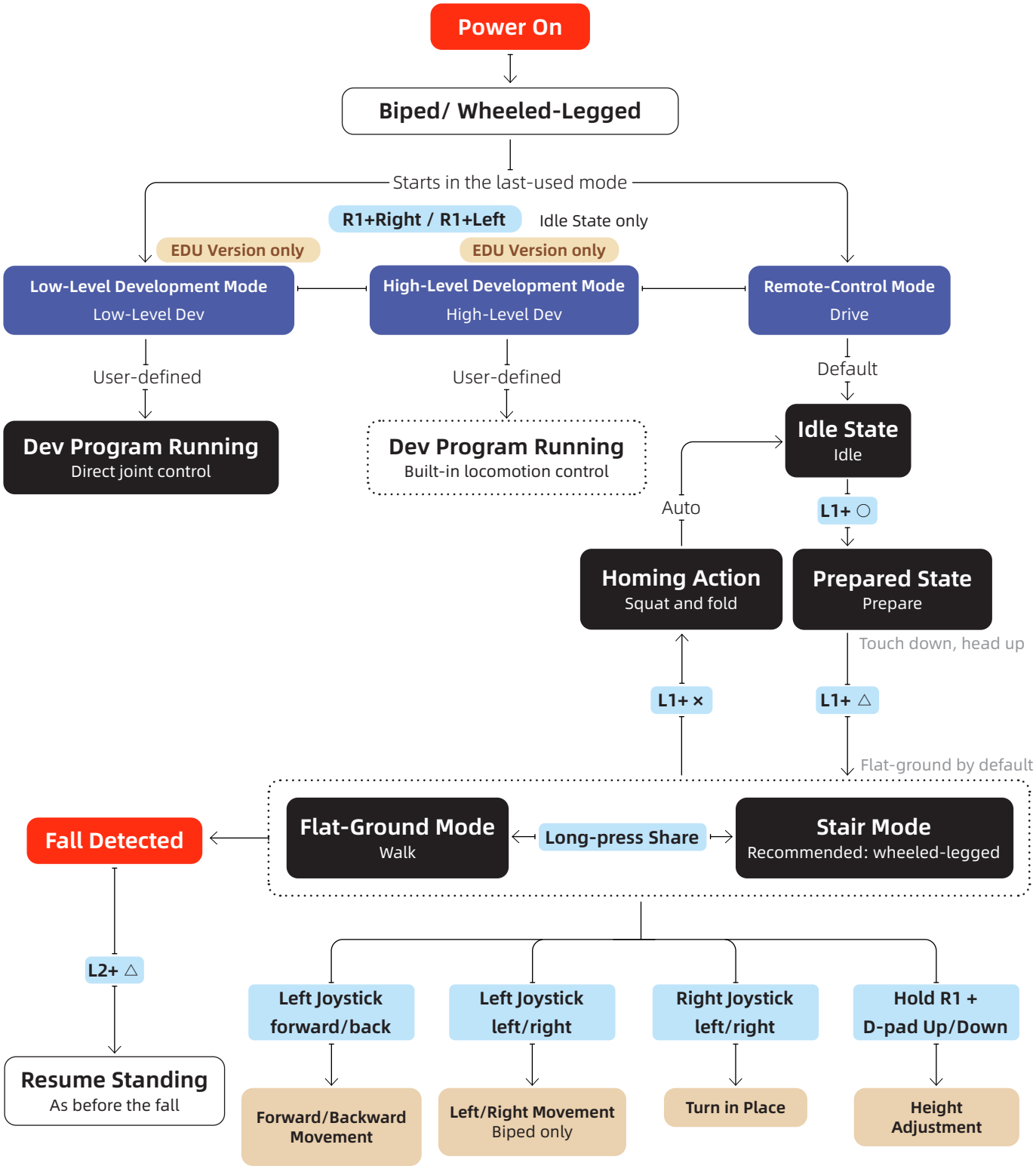


Screen Area	Description
Signal Strength	Blue bars appear once the remote controller connects to the robot. More bars mean a stronger signal.
Battery Level	Remote controller battery level
Information Area	Robot feedback: motion speed, body height, battery level, power status, and error codes (**bat**: robot battery level; **pwr**: power status; **errcode**: error code).
Mode	Current mode, e.g., **Drive** (Remote-Control Mode)
State	Current state, e.g., **Walk** (Standing State)

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3. Remote Control Operation

3.1 Mode Flowchart



3.2 Switch to Remote-Control Mode

After power-on, the robot starts in its last-used mode. To switch to Remote-Control Mode:

1. With the robot safely supported, press **L1 + □** . The bottom right of the screen shows **Idle**.
2. Press **R1 + D-pad Right** (forward) or **R1 + D-pad Left** (backward) to cycle through the modes, one mode per press.
3. Switching is complete when the bottom left of the screen shows **Drive** and the Status Indicator is solid blue.

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3.3 Remote Control Commands

Function	Buttons	Prerequisite	Description
Mode and State Switching			
Switch Mode	**R1 + D-pad Right:** forward **R1 + D-pad Left:** backward	**Idle** state	Starts in the last-used mode after power-on
Enter Prepared State	L1 + ○		Touches down and raises the head, then enters **Prepare**
Stand Up	L1 + △	**Prepare** state	Stands up gradually into **Walk** (Flat-Ground Mode by default)
Homing Action	L1 + ×	Remote-Control Mode or; High-Level Development Mode	Squats and folds gradually, then enters **Idle** automatically
Enter Idle State Directly	L1 + □	Any state	Skips the Homing Action; joint motors enter the torque-damping state and lower slowly. Emergency use only, e.g., if the Homing Action fails.
Motion Control			
Forward/Backward Movement	Left Joystick ↕	Standing State	/
Left/Right Movement	Left Joystick ↔		Biped only
Turn in Place	Right Joystick ↔		Clockwise or counterclockwise
Height Adjustment	Hold **R1 + D-pad Up/Down**		Raises or lowers the body at constant speed within limits; stops on release. Resets to the default height after restart.
Flat-Ground/Stair Mode Switching	Hold **Share** for ~2 s		Recommended for wheeled-legged robots. Status Indicator shows dynamic purple in Stair Mode.
Fall Recovery	**L2 +** △	Fall detected	Returns to the pre-fall standing state. No effect in normal operation.
Emergency Stop and Zero Calibration			
Remote Emergency Stop	Press the Left and Right Joysticks together	Any state	Cuts all motor power immediately; the robot loses support and falls
Emergency Stop Release	Press the Right Joystick once	Emergency Stop State	Enters the damping state after release
Zero Calibration	**L1 + R1**	**Idle** state	Only after a main controller upgrade, or after a severe collision causes zero-position loss or drift

4. Power-Off

1. Stop the robot and press L1 + X. Wait until it squats, folds, lands stably, and enters the Idle State.
2. Hold the robot's Power Button for ~3 s. The Battery Level Indicator and Status Indicator turn off.
3. Hold the remote controller's Power button for ~2 s until the screen turns off.
4. Remove the battery after all indicators are off.

Always complete the Homing Action before powering off. Otherwise, the robot may lose support and drop suddenly, resulting in damage.

TRON 2 User Manual

Video Tutorials

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