



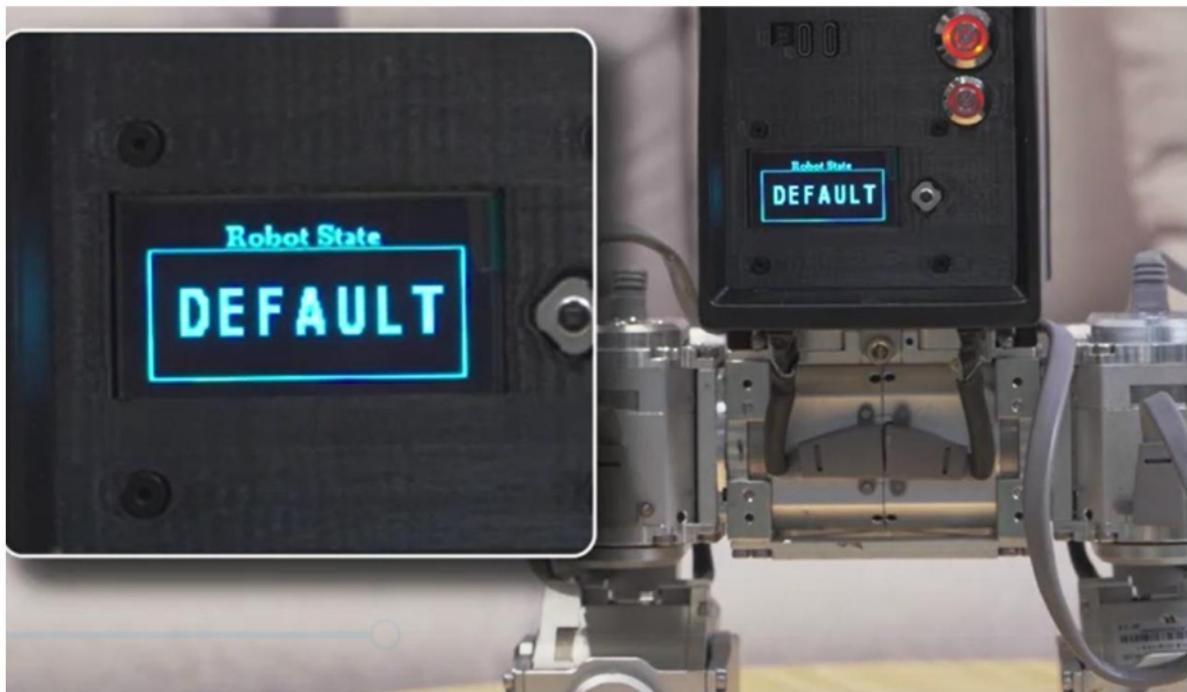
Teach Mode Instruction

The Mini π product of High Torque Electromechanical offers multiple development modes. Among them, the robot teach mode is a method that records the robot's information at each key position in sequence through the motion editor, similar to recording key frames. Developers can capture and save each motion node during the teaching process to form a complete motion sequence, after which the robot can accurately reproduce the preset operations according to this record. This mode not only reduces programming complexity but also makes robot operation intuitive and easy to understand, facilitating quick start-up and application.

This document will introduce the use of the "Teach Mode", taking the recording of standing up and squatting down movements as an example:

1. Power-on and Startup:

Short-press and then quickly long-press the battery switch to turn on the power supply. Then short-press the motor on/off key and long-press the upper computer on/off key. The back panel display shows "loading" and then enters DEFAULT mode.



2. Pair the Gamepad:

Long-press the gamepad switch button to pair with Mini π. A vibration indicates successful pairing (ensure the gamepad receiver is properly inserted at this time).

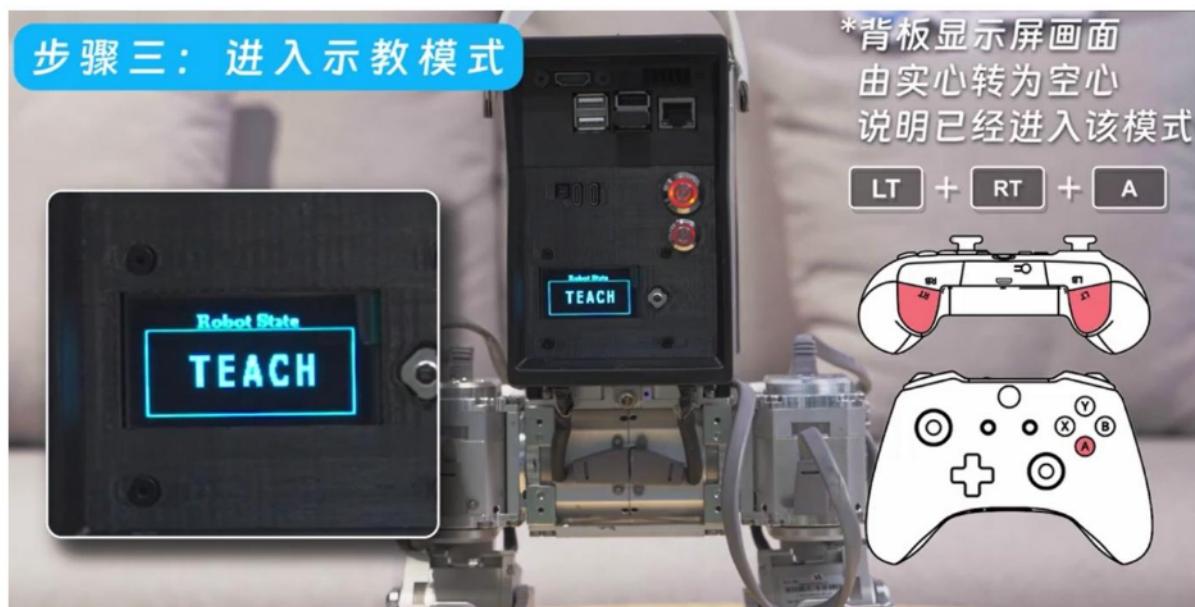


3. Enter Teach Mode:

- Press LT+RT+B simultaneously to exit to PROTECT mode.
- Press LT+RT+B simultaneously again to exit to INITIAL mode.
- Then press LT+RT+the left direction key of the D-pad simultaneously to switch to TEACH mode.



Finally, press LT+RT+A simultaneously to enter TEACH mode (the back panel display screen changes from solid to hollow, indicating entry into this mode).

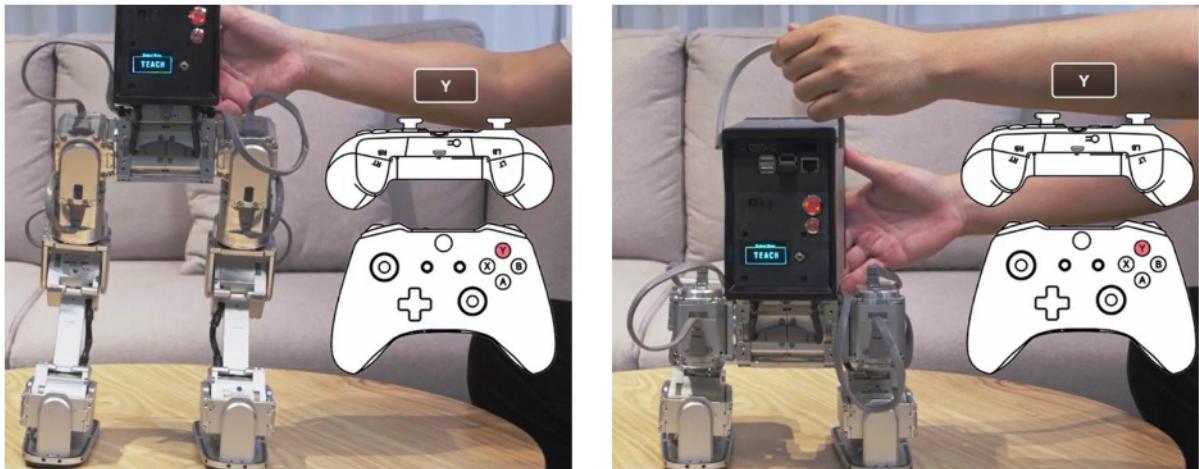


4. Start Official Recording:

First, calibrate Mini π 's initial posture to a squatting position, then start recording by pressing LT+"START" simultaneously.



Next, slowly lift Mini π . During this process, keep pressing the Y key on the gamepad to add waypoints. After standing completely upright, slowly lower Mini π , and also keep pressing the Y key on the gamepad to add waypoints during this process. To delete waypoints, press the X key. Stop until Mini π returns to the squatting position and all waypoints are recorded.



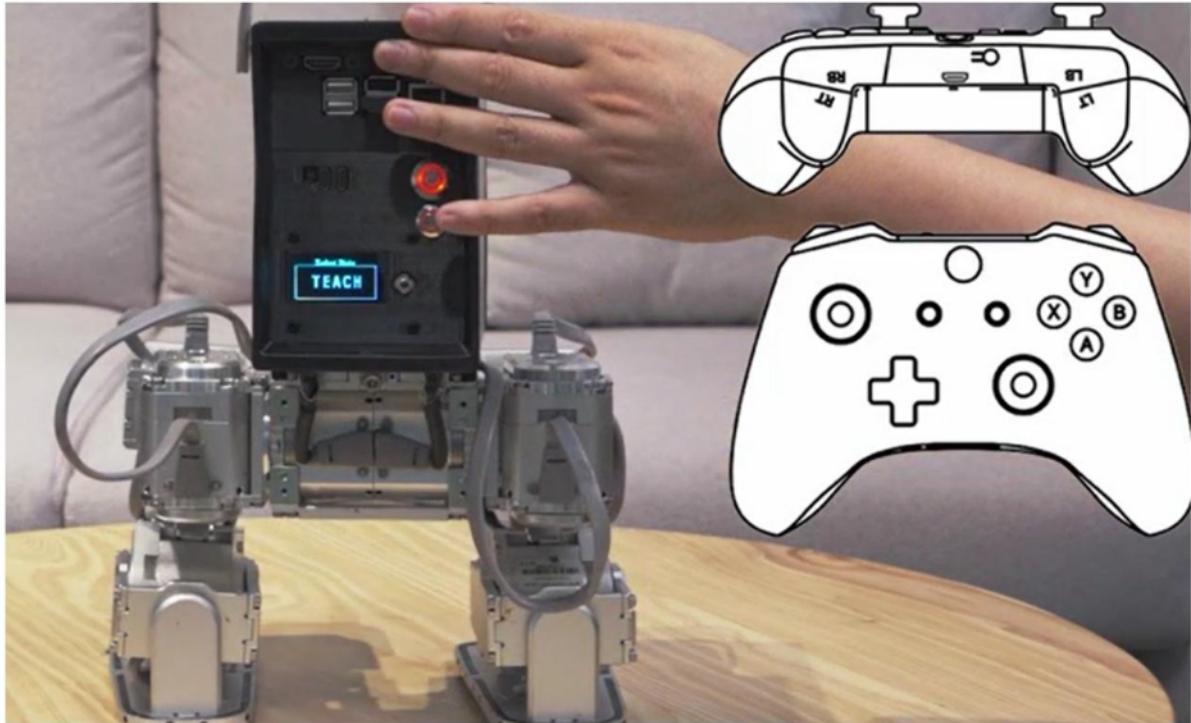
You can lock the robot's motors by pressing the B key to keep Mini π fixed. Press the B key again to unlock; the motors will release force but still have a certain damping effect.

5. Save the Recording:

Press A to complete the recording, then press LT+"BACK" simultaneously to load the trajectory.



Recalibrate Mini π 's movements at this time to ensure they are consistent with the initial movements before this motion recording.



6. Reproduce the Recorded Movements:

Press the left joystick button in the upper left corner vertically to reproduce the complete standing up and squatting down movements just recorded.



This concludes the basic process of the teach mode. You have mastered how to enter the teach mode and record your own set of movements.

Creative users can design some innovative movements according to the above steps.

You can also refer to the video released by High Torque Electromechanical to learn about the movements that Mini π can achieve:

【"HiPi"New Year! Mini π Dance Troupe Dances for the Year of the Snake!

High Torque Electromechanical Wishes You a Happy New Year!】

https://www.bilibili.com/video/BV1apFHeqEnD/?share_source=copy_web&vd_source=1616111bb64fcfbef8881e6eb34e7dce

Notes:

- After entering Teach (TEACH) mode, Mini π only saves the latest recorded movement by default and cannot record and save multiple sets of movements;
- To reproduce the previously saved movements after shutdown: restart the device to enter Teach (TEACH) mode, press LT+START simultaneously, then press the left joystick button to reproduce the movements saved before shutdown;



- To save existing motion files, connect the robot to an external display and save the boost file in the motion file path;
- During the motion recording process, if you need to check whether the robot is balanced, you can lock the motors with the B key;
- During the motion recording process, each press of the Y key means recording the current motion frame. There is a time interval (about 0.5s) between the playback of each frame. Therefore, the more Y key records, the slower the movement and the longer the total playback time;
- A certain sense of damping during motion recording is normal;
- During the motion recording process, to delete the previous segment of the movement, press and hold the X key;
- Due to the influence of the robot's gravity, structure, etc., skills are required to operate some high-difficulty movements. Please try more, or seek experience teaching from technical personnel;
- Please be careful not to get injured during operation, and you may appropriately seek collaborative help from others.