

Programming Education Kit



Brand Philosophy | About TSCINBUNY

TSCINBUNY is a brand dedicated to programming education and e-learning. We create programmable robots and electronic experiment kits for coding enthusiasts, students, makers, schools, and educational institutions. By combining software programming with hands-on hardware operation, we help users progress from beginner to advanced levels in both coding skills and electronics principles. Every product is supported with detailed tutorials, sample code, and professional technical assistance to ensure an effective and inspiring learning journey.

Product Overview | Programming Education Kit

This is an 18-DOF (Degree of Freedom) programmable hexapod bionic robot. Using the dedicated Android/iOS app, you can easily control walking, climbing, and other movements. It is also open for secondary development via Arduino programming. Complete tutorial materials are provided to guide you from setup to advanced projects.

Key Features | Why It Stands Out

1. Lightweight Yet Robust Structure

Acrylic frame weighs only **one-third** of metal parts while maintaining strength to handle complex terrains.

Precision-drilled holes and snap-fit design enable quick and stable assembly, even for beginners.

2. Bionic Gait & Intelligent Mobility

Tripod gait design – always supported by three legs during walking, ensuring stability on both rough surfaces and smooth floors. Adaptable climbing ability meets diverse scenario requirements.

Omnidirectional movement – achieves 360° free translation, synchronous posture adjustment, and flexible motion-mode switching. The robot moves as agilely as a living creature.

3. Smart Sensing & Autonomous Obstacle Avoidance

Equipped with a color-LED ultrasonic sensor for real-time distance measurement and intelligent following/avoidance.

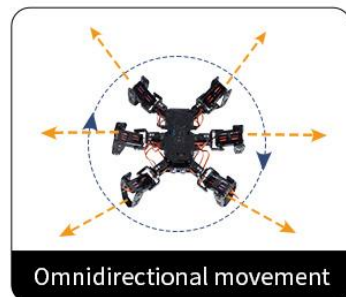
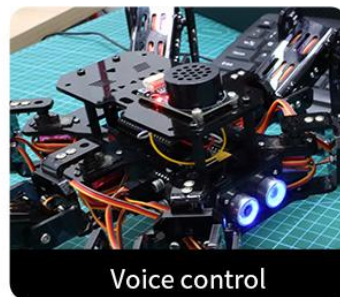
Combines bionic gait with environmental perception algorithms to enable **automatic obstacle recognition and path planning** – making every move smarter and safer.

4. Open Hardware & Expandability

Built on **ESP32 + PCA9685** control architecture, capable of complex gait control and flexible expansion with various sensors (e.g., gyroscope, obstacle-avoidance modules).

Standardized hardware interfaces support secondary development with multiple types of sensors and actuators.

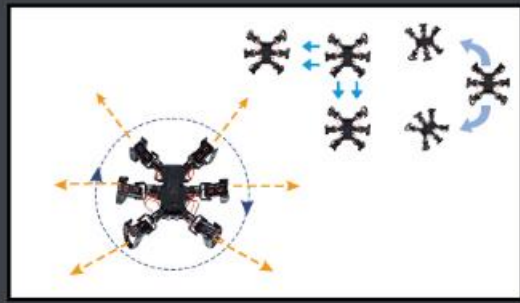
FUNCTIONAL GAMEPLAY



WHY CHOOSE OUR HEXAPOD ROBOT?



Acrylic structural bracket, weighing only 1/3 of metal parts, yet with sufficient strength to withstand complex terrains. The precision drilling and buckle design allow even beginners to quickly assemble a stable body.



"This product is equipped with a tripod gait design. When walking, it always maintains three-foot support and alternates switching. It can walk stably on both rough surfaces and smooth planes, and can easily crawl to meet the movement needs of various scenarios."



Equipped with a colorful ultrasonic sensor, it performs real-time distance measurement and intelligent obstacle avoidance. Combining bionic gait with an environment perception algorithm, it realizes automatic obstacle recognition and path planning, making walking more intelligent and safer. It is suitable for all scenarios such as teaching demonstrations, scientific and technological innovation experiments, and interesting exploration.



The combination of ESP32 and PCA9685 can not only realize complex gait control, but also flexibly expand sensors (such as gyroscopes and obstacle avoidance modules).

Function Demonstration | What It Can Do

Omnidirectional Movement: Forward/backward, left/right, diagonal, and rotation – move as you wish.

Ultrasonic Following: Automatically follows a target while maintaining a set distance.

Ultrasonic Ranging: Real-time distance detection with visual feedback.

APP & WEB Control: Operate via mobile app or web interface for greater flexibility.

Specifications | Product Parameters

Dimensions: Approx. 314mm × 467mm × 403mm (fully deployed)

Body Material: Acrylic

Ultrasonic Module: Luminous ultrasonic sensor

Battery: 7.4V 850mAh

Battery Life: About 1 hour

Control Method: Dedicated APP

Servo Model: MG90S metal gear servo

Ideal For | Perfect For

Programming teaching & classroom demonstrations

STEM projects, science fairs, and innovation competitions

Maker projects & hobbyist exploration

Robotics research and algorithm verification

Why Choose TSCINBUNY?

- ✓ Clear structure, rich details – assembly itself is a learning experience.
 - ✓ Open hardware interfaces support sensor and actuator expansion.
 - ✓ Complete tutorials and code examples, backed by professional support.
 - ✓ Stable gait, adaptable to various surfaces, reliable performance.
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FCC Warning

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 1: 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.

NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

RF Exposure Statement

To maintain compliance with FCC'S RF Exposure guidelines, This equipment should be installed and operated with minimum 20cm between the radiator and your body. This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.