1.1 Introduction to Pico Robot

Currently, Pico Robot has two optional main controllers, Pico and Pico 2. Pico Robot is an open source robot that can be used by embedded designers, researchers and students. The robot comes with ultrasonic and photosensitive sensors, OLED and infrared receivers, which can quickly achieve obstacle avoidance, remote control and other functions.

Raspberry Pi Pico is a low-cost, high-performance microcontroller development board designed by Raspberry Pi with flexible digital interface. In terms of hardware, it uses the RP2040 microcontroller chip independently developed by Raspberry Pi, equipped with an ARM Cortex M0 + dual-core processor with an operating frequency of up to 133MHz, built-in 264KB SRAM and 2MB memory, and up to 26 multi-function GPIO pins on board. In terms of software, MicroPython can be used for development, and it is equipped with a complete development material tutorial, which can facilitate quick entry and development, and embed the application into the product.

Raspberry Pi Pico 2 is also a low-cost, high-performance microcontroller development board designed by Raspberry Pi. However, it is different from Pico in hardware. It uses the RP2350 microcontroller chip independently developed by Raspberry Pi, equipped with dual ARM Cortex M33 or Hazard3 processors, up to 150MHz operating frequency, built-in 520KB SRAM and 4MB memory.

Pico Robot Features

● Onboard ultrasonic ranging module

● Onboard photoresistor, four-way patrol, sound sensor

● Onboard Bluetooth interface and infrared receiving probe, you can choose Bluetooth remote control or infrared remote control

● 0.91' mini OLED real-time display

● Powered by a single 18650 lithium battery, charged by a small car

● Onboard boost, charging, and voltage stabilization circuits, with overcurrent protection, overcharge protection, motor stall protection, etc.

● Two-way motor drive plus universal wheel movement

● Onboard 8 RGB lights, can achieve colorful lighting effects

● Onboard passive buzzer

● Onboard four-way servo interface, two sets of IIC interfaces, one set of GPIO interfaces, can be connected to various modules at will

● With built-in power detection circuit, reset circuit

● Use Python programming