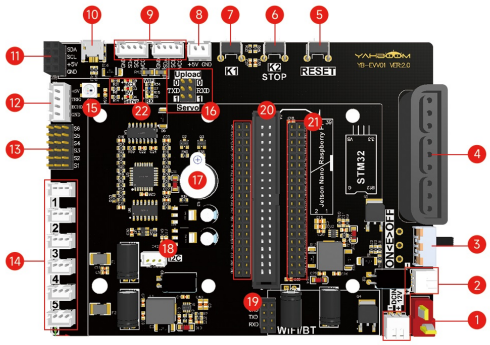
Expansion board interface description

The onboard interface of the Dofbot expansion board supports the control of Raspberry Pi 4B/5, Jetson Nano, STM32 and other motherboards, but only supports one master control to connect to the expansion board at a time; the external I2C interface can support other masters with I2C functions. plate.

Introduction to expansion board function distribution



① T-type power supply interface: 12V power adapter to power supply robotic arm expansion board.
② 12V output interface: Provides 2PCS XH2.0 interfaces that output 12V.
③ Power switch: Robotic arm power switch.
④ PS2 controller receiver base: Install PS2 controller receiver.
⑤ RESET key: Reset the MCU and STM32.
⑥ K2: Short press: the bus servo stops suddenly and turns off the torque of the bus servo; long press for about 10 seconds: closes and opens the BootLoader function of the underlying microcontroller. After the BootLoader function is opened, the RGB light shows a marquee effect.
⑦ K1: In default mode, press the K1 key once to reset the bus servo and raise the robotic arm vertically. Double-click the K1 key to quickly reset the servo.
⑧ 5V output interface.
⑨ I2C interface: Connect external modules.
⑩ microUSB interface: Writeprograms for STM32, update firmware for MCU and communicate with the main control board through the serial port.
⑪ I2C interface: Connect OLED screen.
⑫ Ultrasonic interface: Connect ultrasonic module.
⑬ PWM servo interface: Connect PWM servo.
⑭ Bus servo interface: Connect the bus servo.
⑮ RGB lights: RGB lights controlled by the underlying microcontroller. The main control board B can send commands to the microcontroller to make the RGB lights light up in different colors.
⑯ MCU serial port function selection: In the default state, use a jumper cap to connect both TXD and RXD to 1 (Servo). Only the MCU can control the bus servo. If you use a jumper cap to connect both TXD and RXD to O (Upload), you can use microUSB interface to update the firmware of MCU.
⑰ Buzzer: Active buzzer.
⑱ I2C interface: Communication interface between Raspberry Pi 5 and robotic arm expansion board.
⑲ Serial port interface: Connect WiFi module or Bluetooth module.
⑳Jetson Nano and robotic arm expansion board connection interface .
㉑STM32 core board and robotic arm expansion board connection interface.
㉒ Status indicator light:
MCU: The status indicator light of MCU. When the microcontroller is running normally, the red light flashes twice every 3 seconds.
5V: The 5V voltage indicator light of the expansion board. When the 5V power supply is normal, it is always on;
Servo: The servo power supply indicator light. When the servo is powered normally, it keep on.