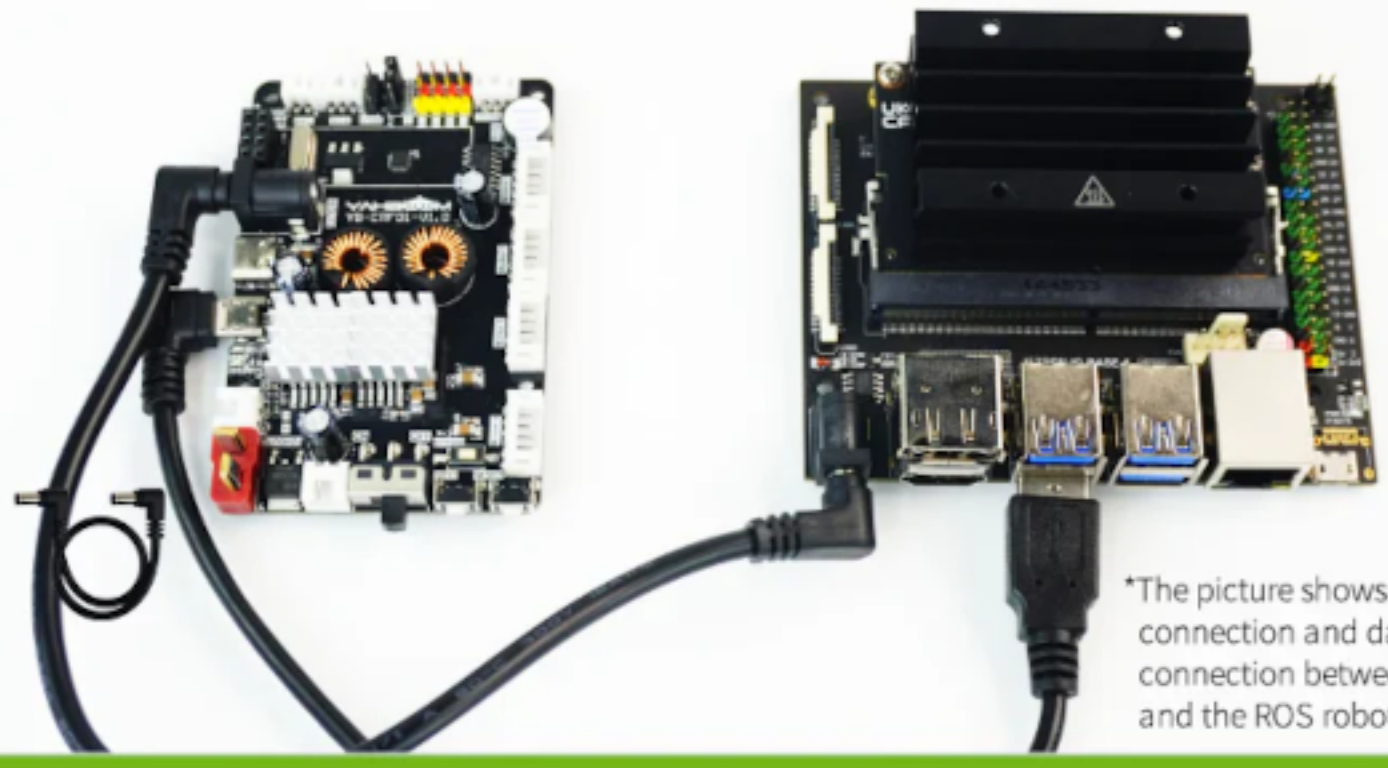
STM32 ROS
Robot Control Board

On-board MPU9250 9-axis IMU sensor

Support Jetson series board, Raspberry Pi board, IPC, etc.
Provide ROS1/ROS2 function package

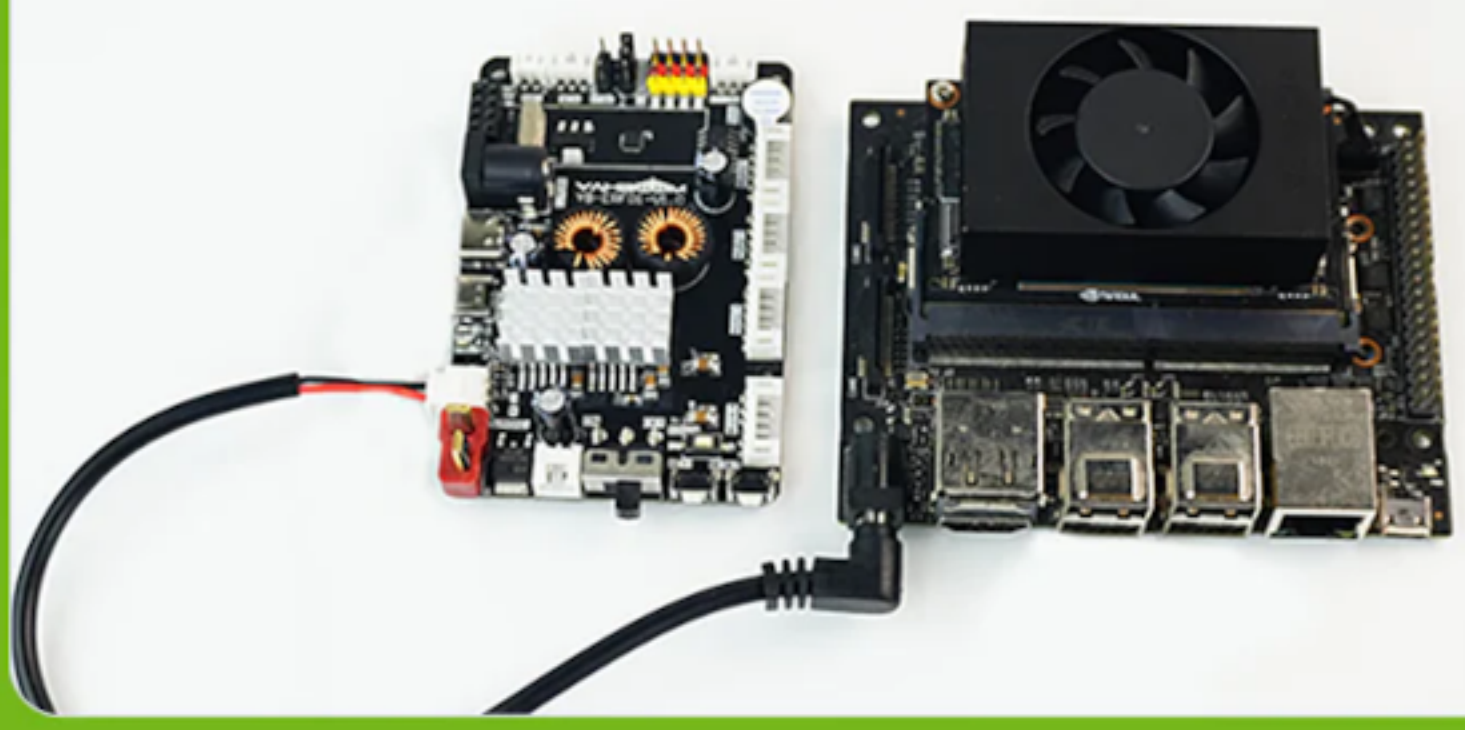
Support JETSON series board

This product can supply power to the JETSON NANO board through the DC interface
(Dual DC interface power supply cable is provided)



*The picture shows the power supply connection and data communication connection between the JETSON NANO and the ROS robot control board

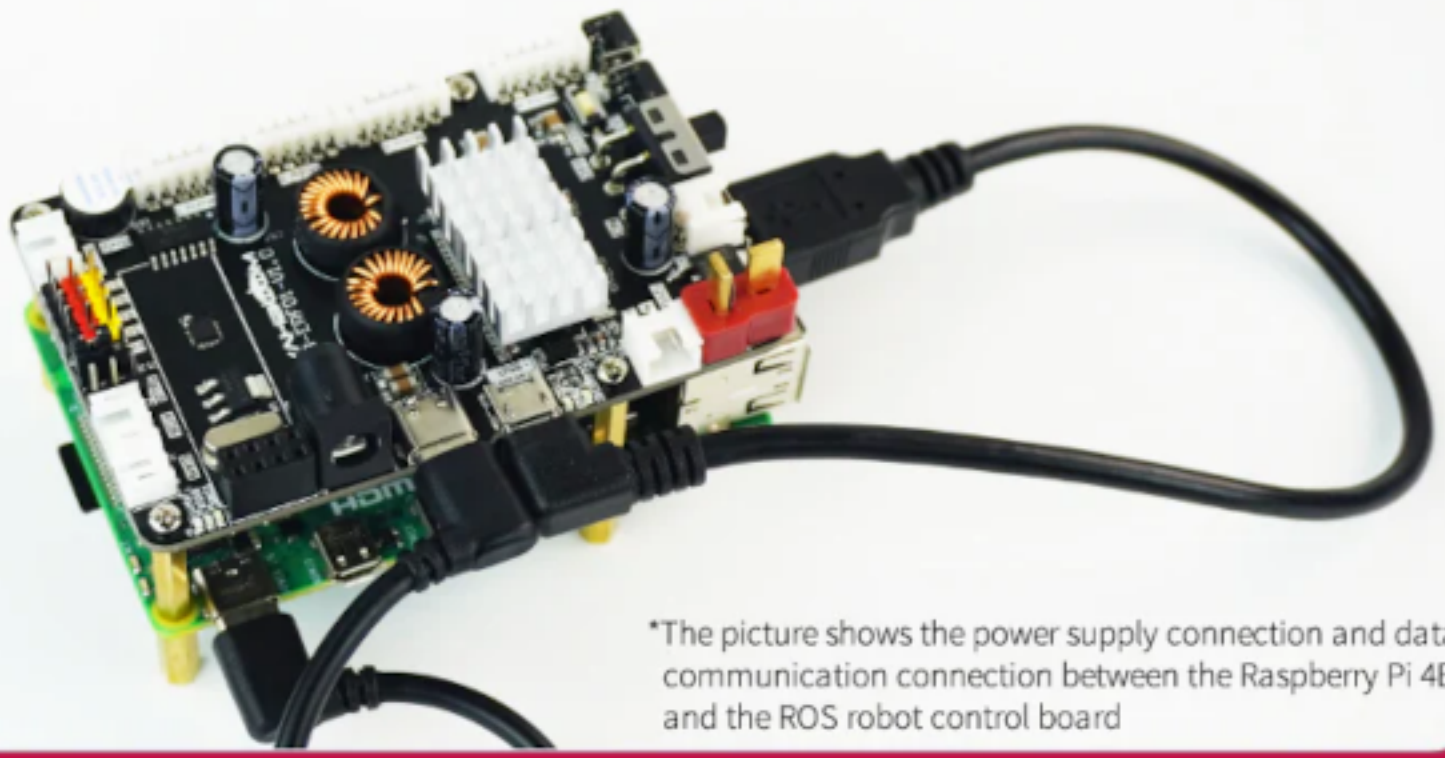
*This product can supply power to the JETSON TX2/TX2-NX/NX board through the XH2.54 interface on the board (Prepare to connect line by yourself)



Support Raspberry Pi series board

Support stack installation of Raspberry Pi 4B and robot control board

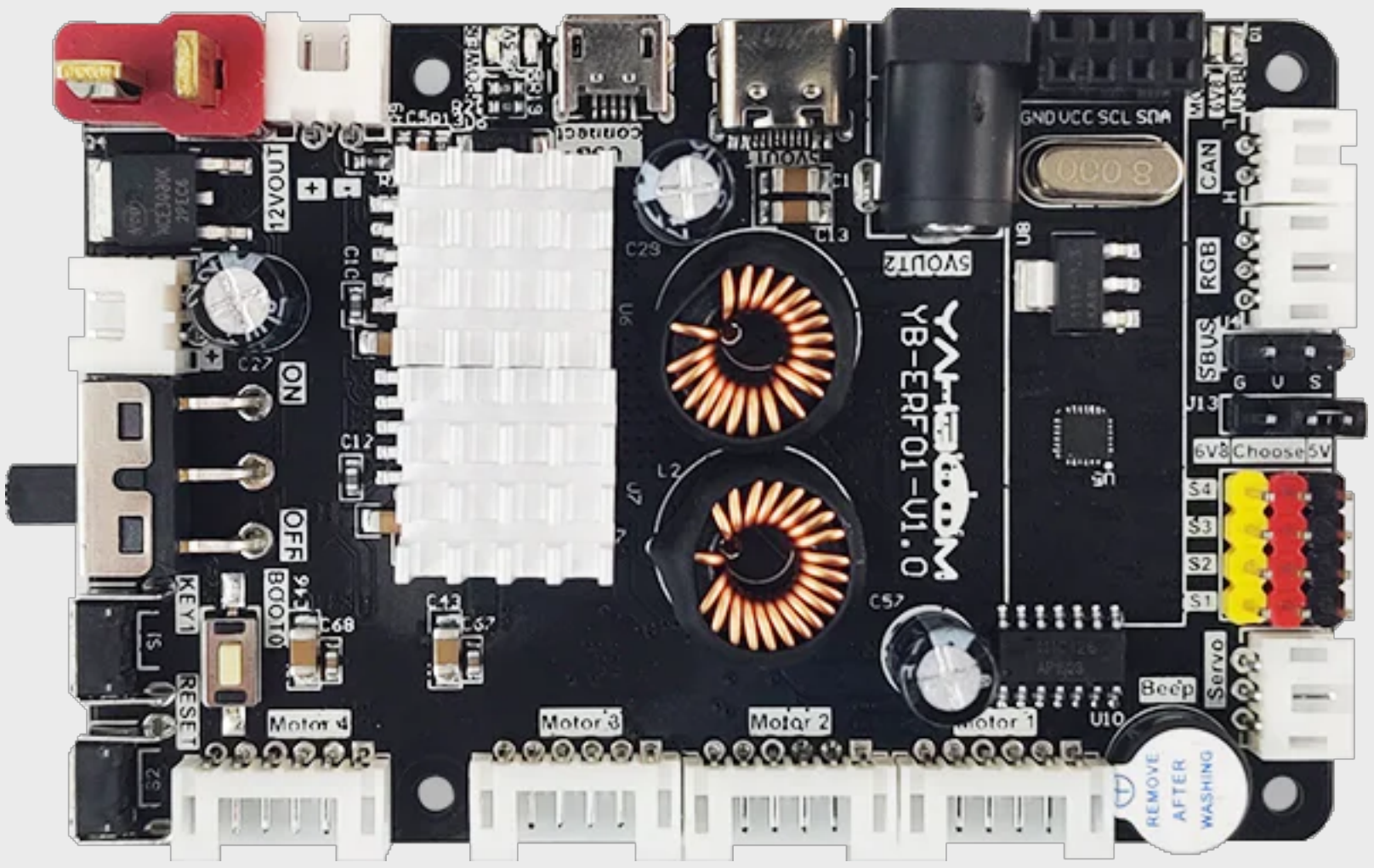
This product can supply power to the Raspberry Pi board through the type-c interface
(Type-c power supply cable for free)



*The picture shows the power supply connection and data communication connection between the Raspberry Pi 4B and the ROS robot control board

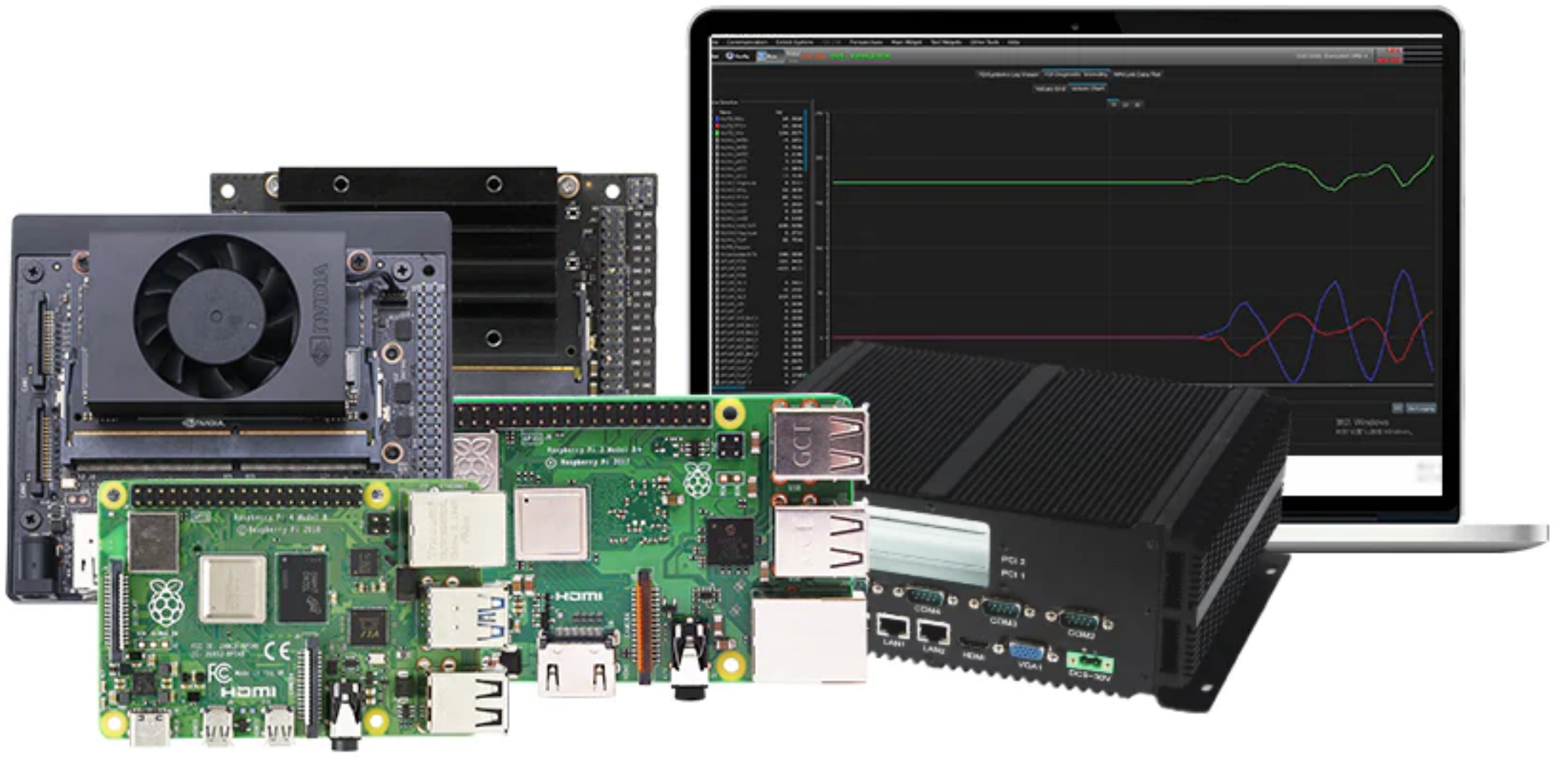
Product introduction

The ROS robot control board is not only a ROS robot car drive controller, but also an STM32 core development board. It is equipped with important configurations such as STM32 core control unit and MPU9250 9-axis attitude sensor, and also provides 4-channel encoder motor, 4-channel PWM servo, serial bus servo, RGB light bar and other peripheral interfaces. It is compatible with Raspberry Pi, JETSON, industrial computer and other devices.

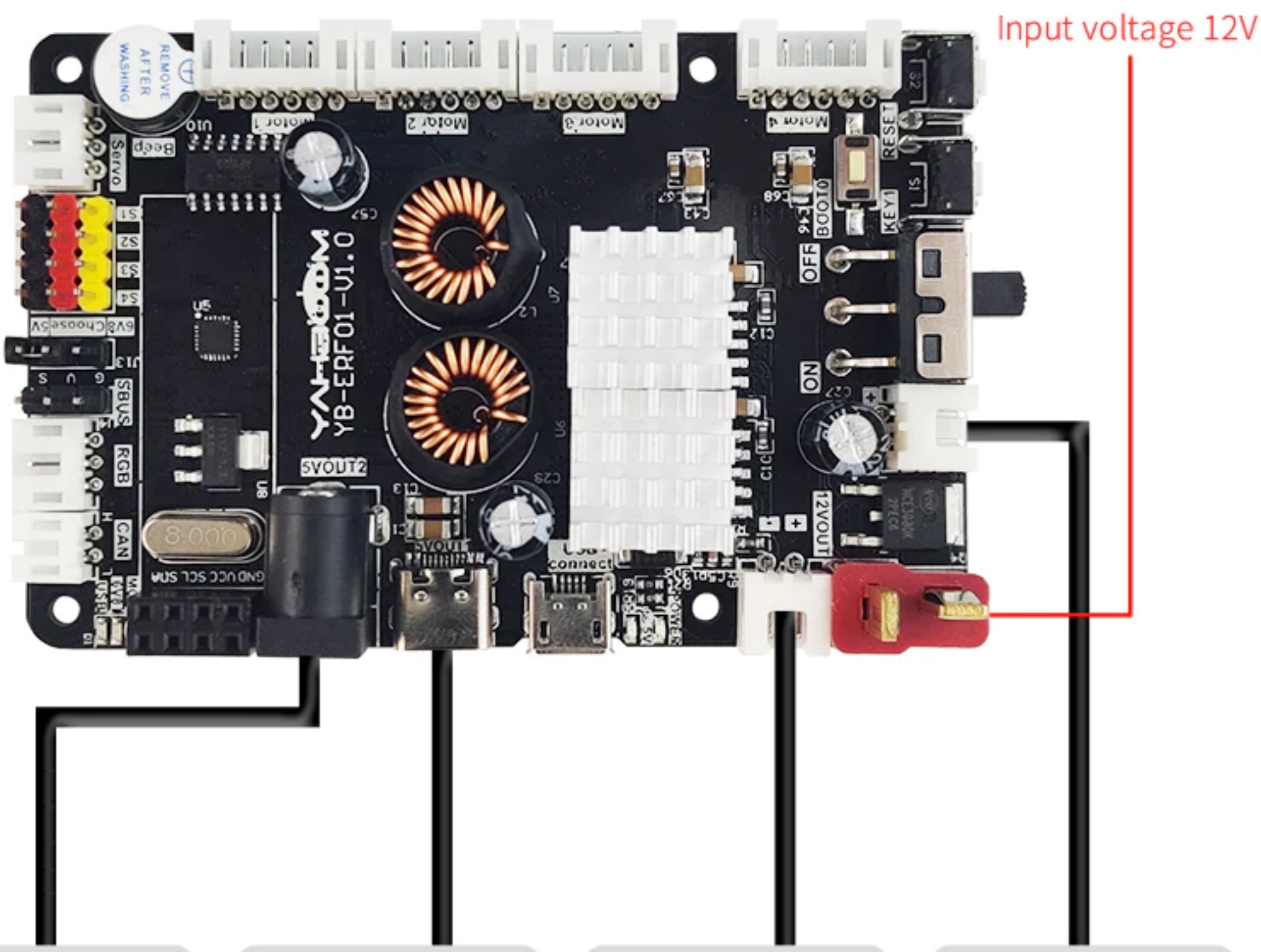


Compatible with

Raspberry Pi, JETSON, industrial computer



Multiple power supply interface output

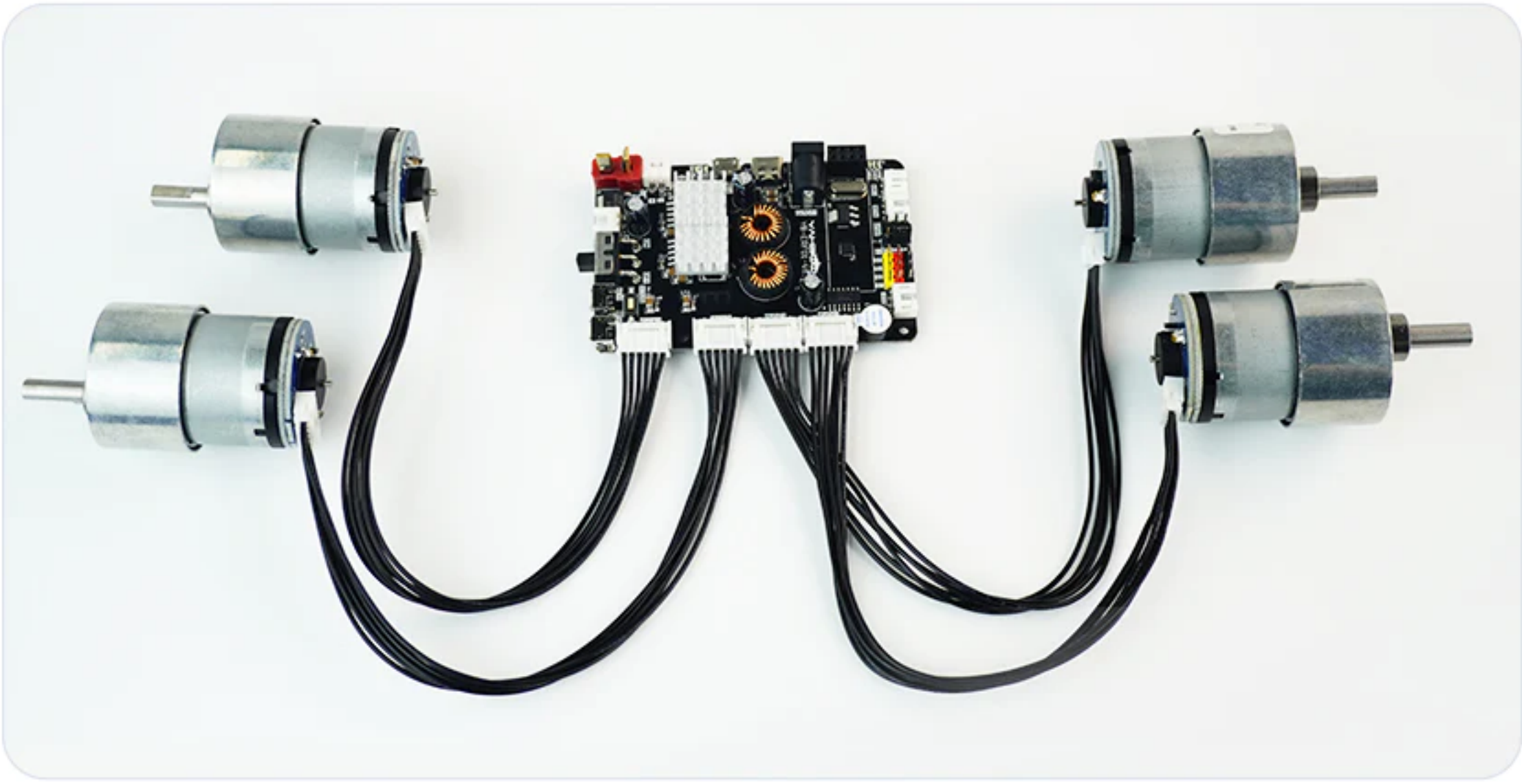


*When using the DC5.5*2.1 interface and the Type-C interface 5V output power supply at the same time, the total load current can’ t exceed 5A

Support 4-channel motor with encoder

It can drive 4-channel motor with encoder, PID control motor speed.

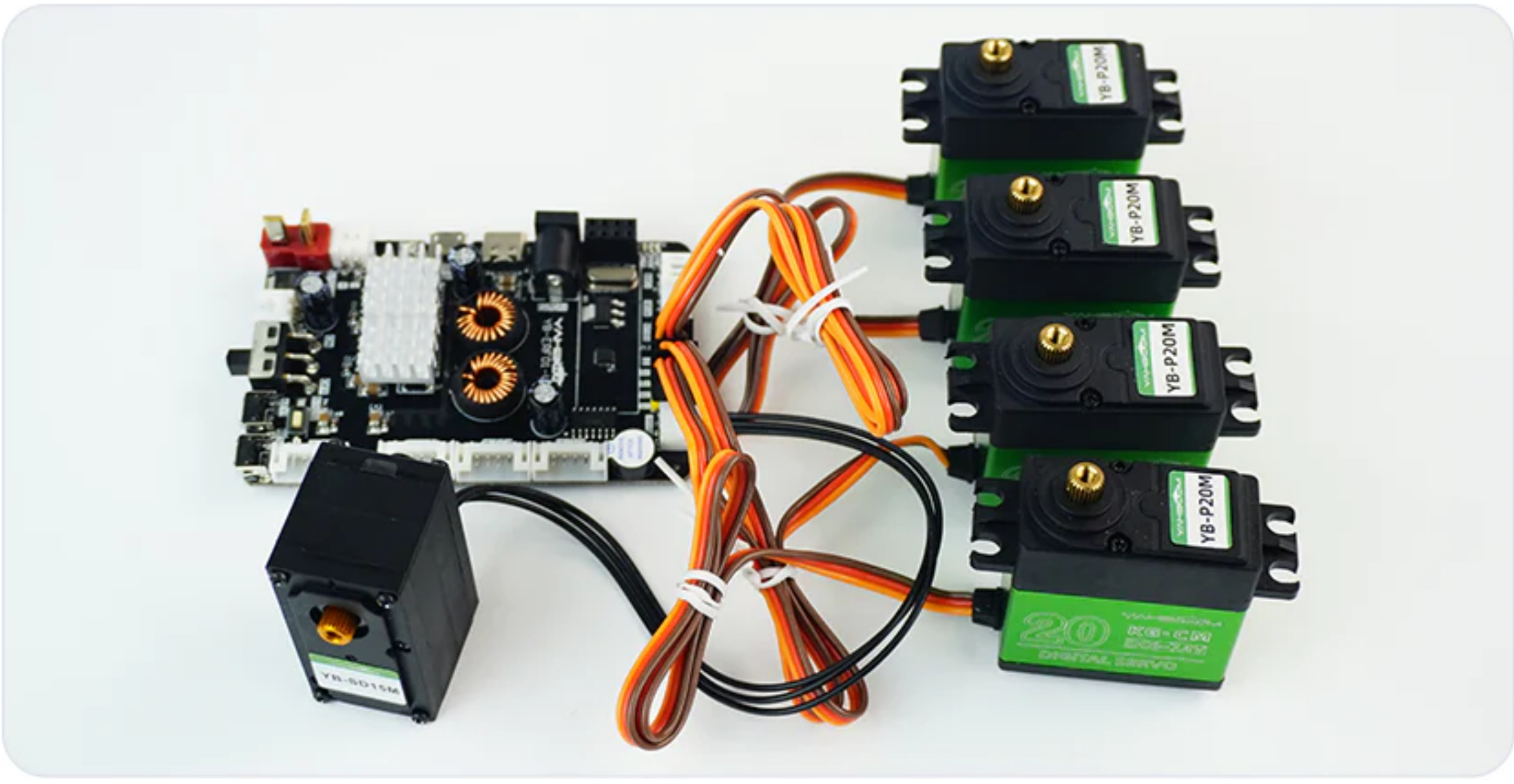
With the robot car to read the running speed in real time.



Supports PWM servos and serial bus servos

On-board 4-channel PWM servo interface and single-channel serial bus servo interface,

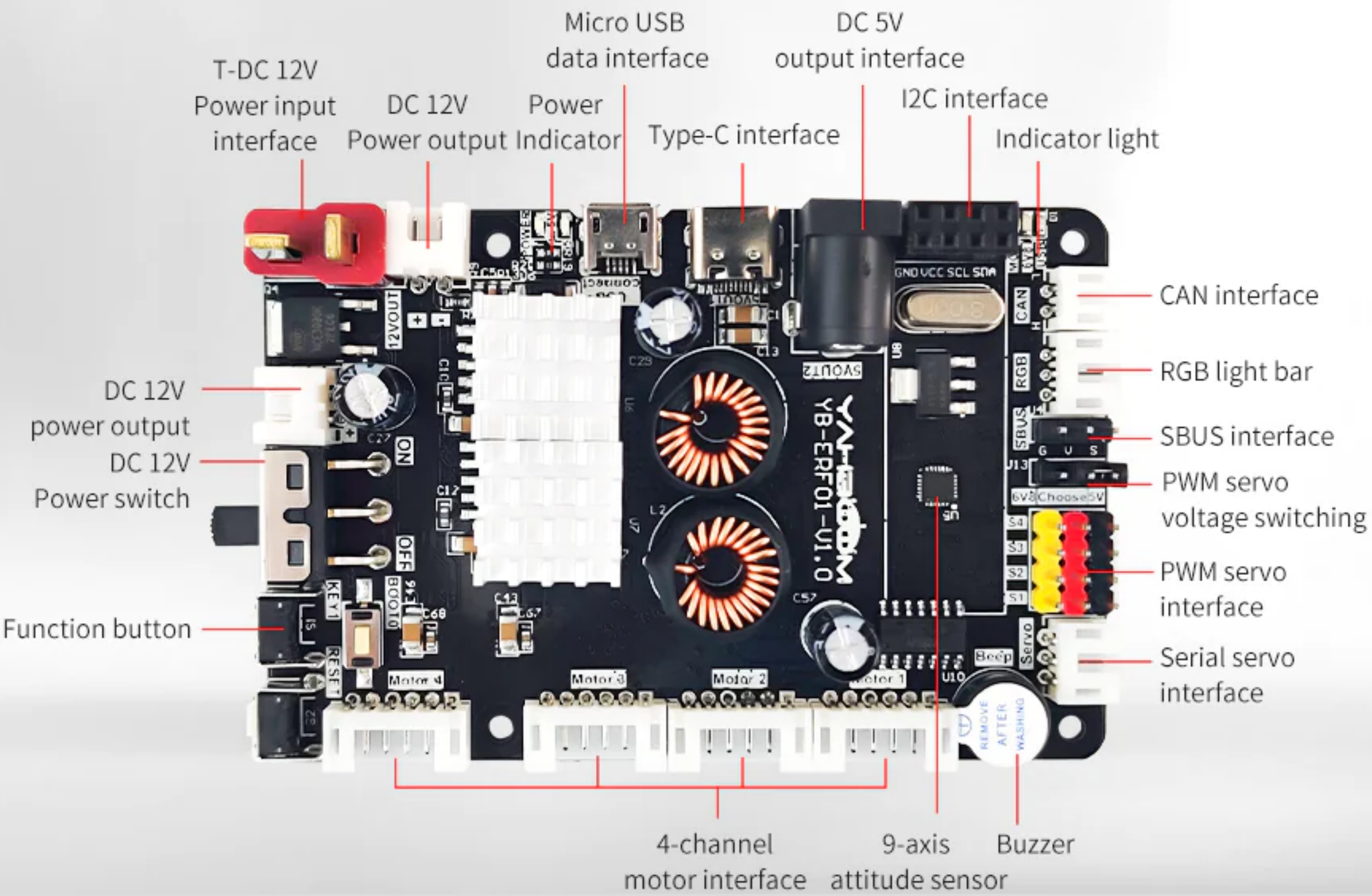
Support up to six serial bus servos in cascade.



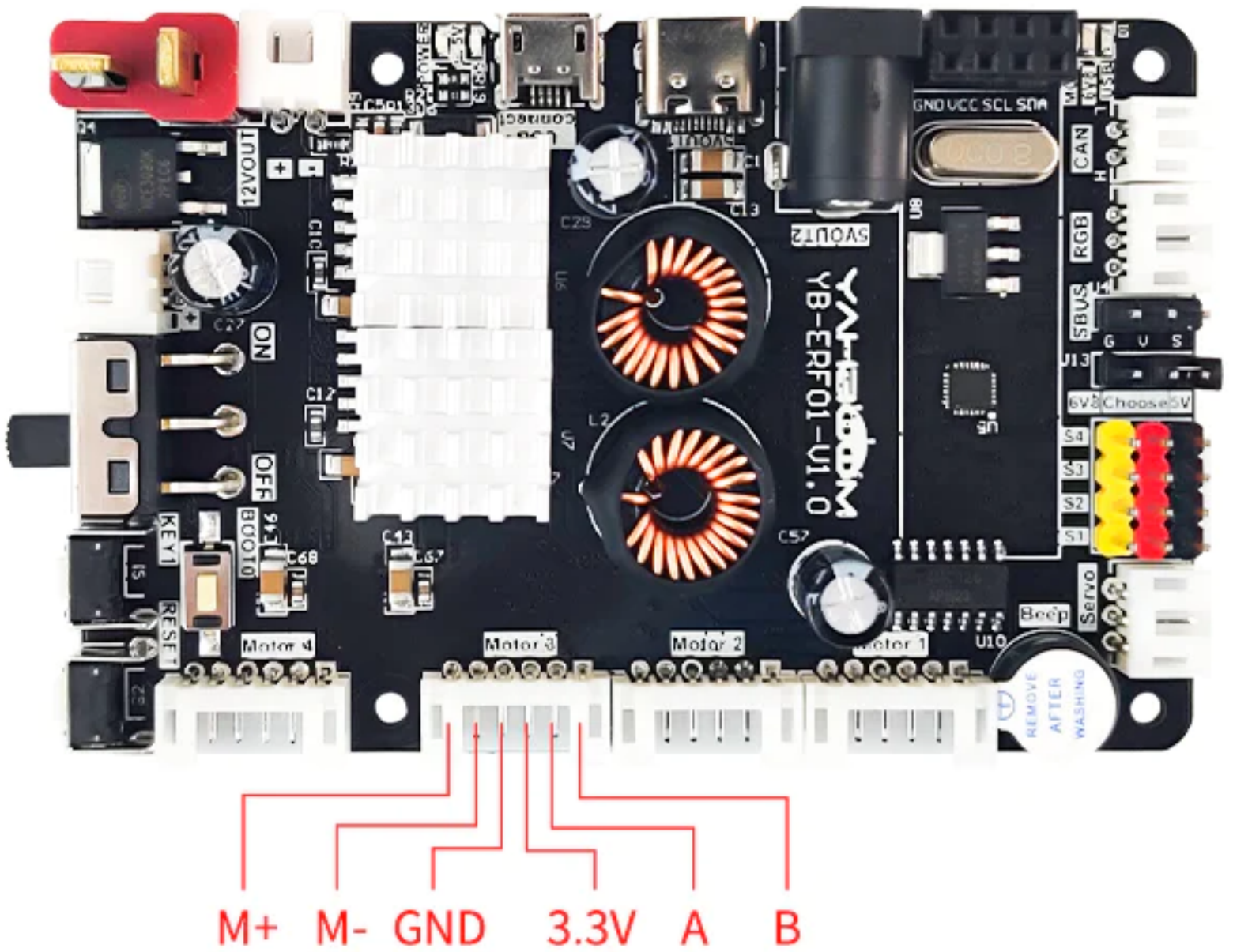
Functional distribution

ROS robot expansion board

It is specially developed and designed for the ROS robot car, and is suitable for robots such as wheat wheel, Ackerman, 4-wheel drive, 2-wheel drive, omnidirectional wheel, and crawler. The ROS main control board can communicate and control through the micro USB serial port and CAN bus interface reserved on the expansion board. At the same time, the expansion board reserves 5V and 12V power ports to supply power to the ROS master. On-board MPU9250 9-axis IMU can obtain the robot attitude information in real time; it has 5V/7.4V PWM servo and serial bus servo drive interface. Codes and hardware schematics are provided for free.



Motor Interface Description



M+: Motor power+

M-: Motor power -

GND: GND

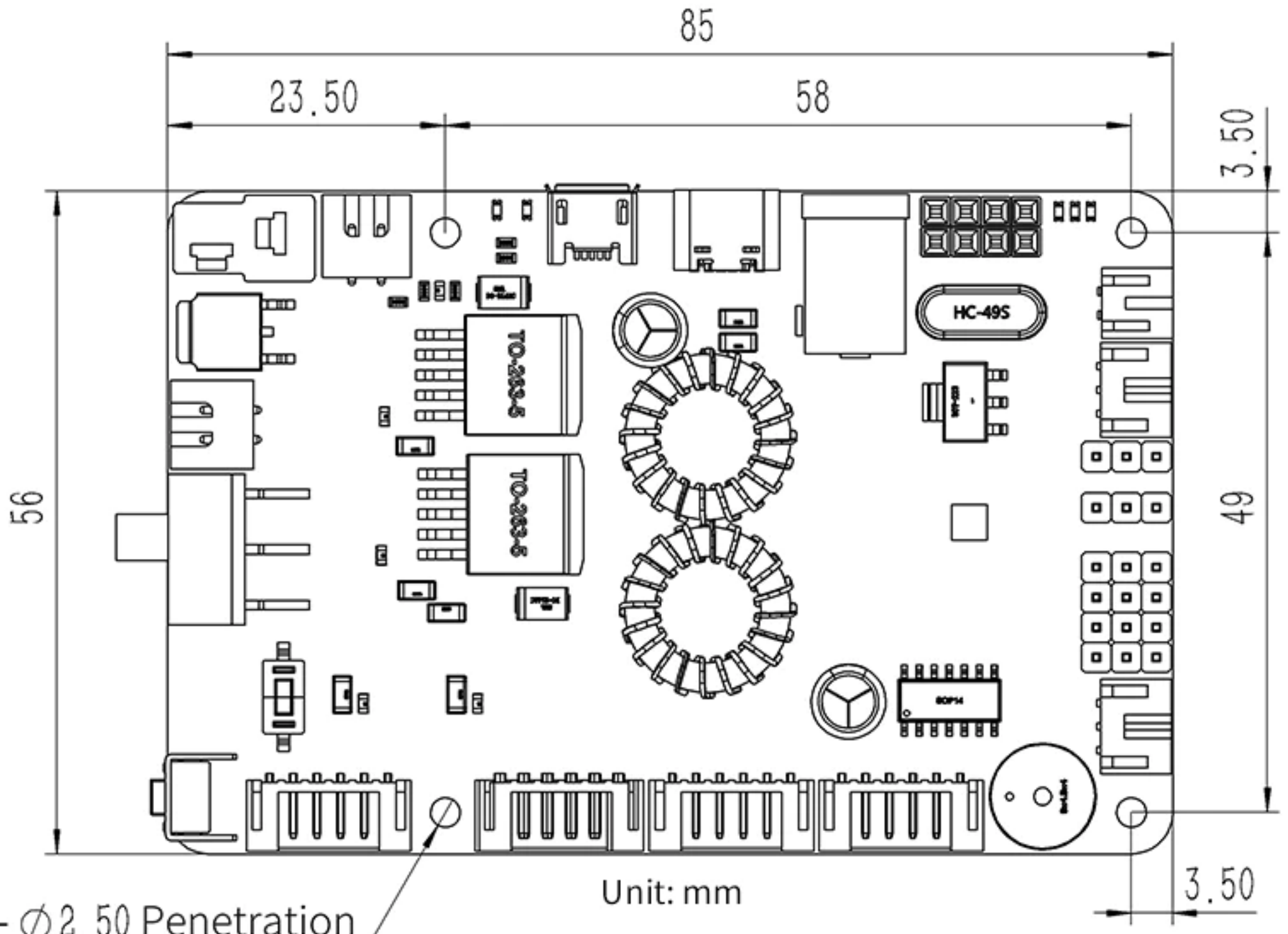
VCC: Power 3.3V

A: Phase A of the sensor signal line

B: Phase B of the sensor signal line

If you want to connect a motor, please ensure that the wire sequence of your motor is the same as the wire sequence of motor interface on ROS robot control board.

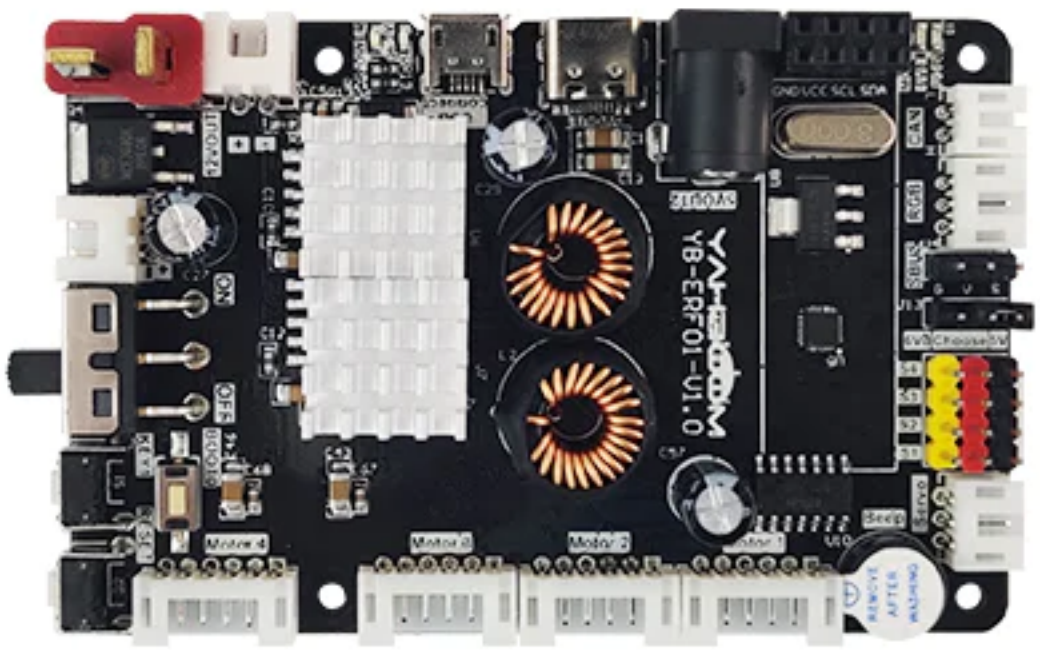
Product Size



Basic parameters

On-board MCU model	STM32F103RCT6
Communication baud rate	115200bps
Data interface	micro USB interface
USB to serial port chip	CH340 chip
Data output method	micro USB data interface
Command control	Support serial commands: whistle, light, drive motor, etc.
IMU chip	MPU9250 9-axis attitude sensor
Motor drive model	AM2857 driver chip*4
Motor with encode	Support 4-channel 12V encoder motor
SBUS model aircraft remote control	Support
CAN communication	Support
Other peripheral interfaces	Support PWM servo, serial servo, RGB light bar, OLED display, buzzer
Button	RESET key, KEY1 key, BOOT0 key
Firmware update method	microUSB data interface + MCUISP tool to update firmware
Operating voltage	T-type DC12V input
Stand-by current	About 50mA
Voltage output	DC 12V output interface*2, DC5V output interface*1, Type-C 5V output interface*1
Protection circuit	Servo over-current protection, anti-reverse connection protection
Operating temperature	-40°C~+85°C
Product size	85mm*56mm
Product weight	About 46g

Shipping list



STM32 ROS robot expansion board

micro-USB
Data line

Double-ended
Type-C power cable

Double-ended
DC power cable

Copper column
screw pack