1. The principle of bus servo control

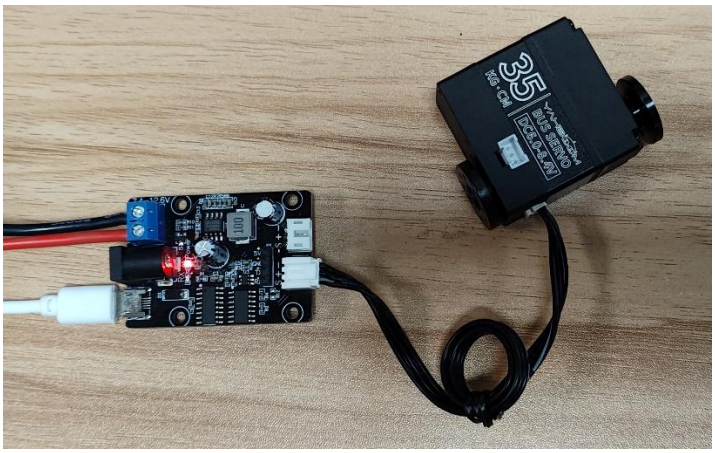
Ordinary servos are controlled by receiving PWM pulse signals, while bus servos are controlled by writing data through the serial port. But the bus servo interface has only three lines. The ordinary serial port needs four line, so we need to use the servo drive board. The servo drive board can not only power supply to the bus servo, but also convert the serial data into a half-duplex serial port data, so that the bus servo can receive commands normally.

The inside of the bus servo is composed of a small DC motor, a control circuit board, a position feedback potentiometer, and a variable speed metal gear set. The control circuit board integrates a MCU for receiving serial commands and outputting PWM signals.

Bus servo can be used as a slave machine and can work according to the commands received by the serial port. When the host machine needs to return data from the slave machine, it can also read the current servo angle and return it to the host machine.

2. Connect the bus servo and the drive board

The interfaces of the bus servo and the drive board comes with anti-reverse connection. As shown below.

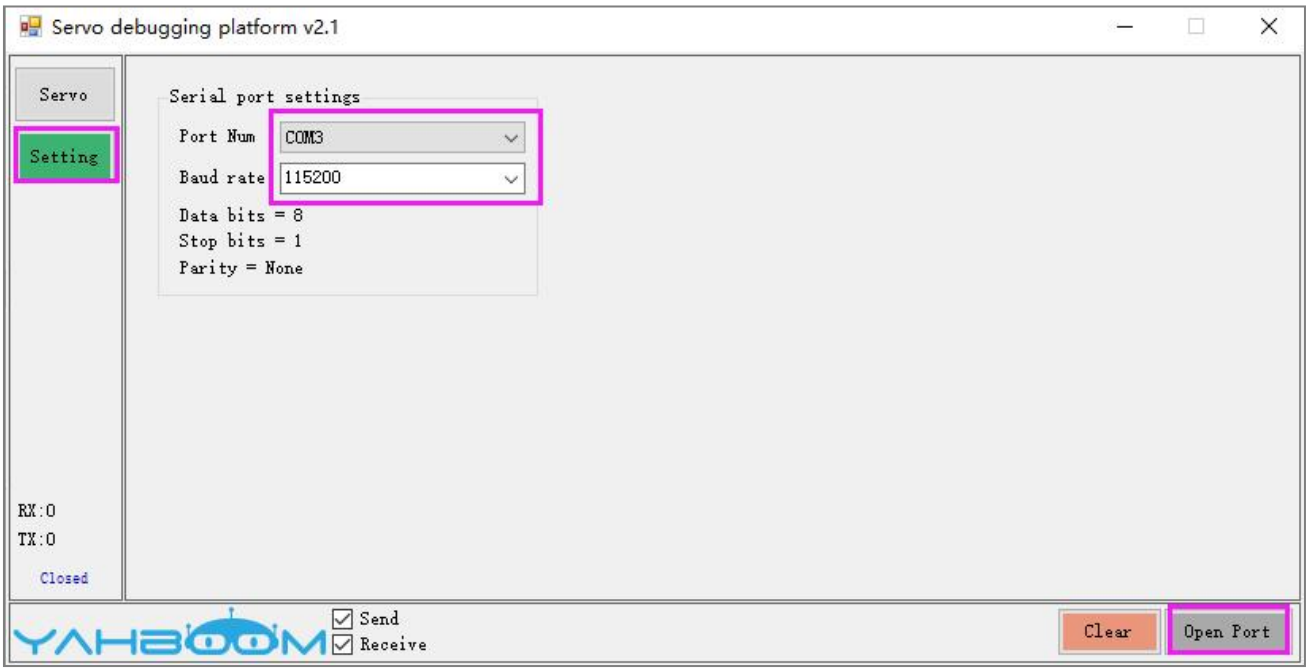


Note: The interface on the servo debugging board is a PH2.0 interface, so it is necessary to use a PH2.0 to HY2.0 data cable to connect the servo debugging board and the servo

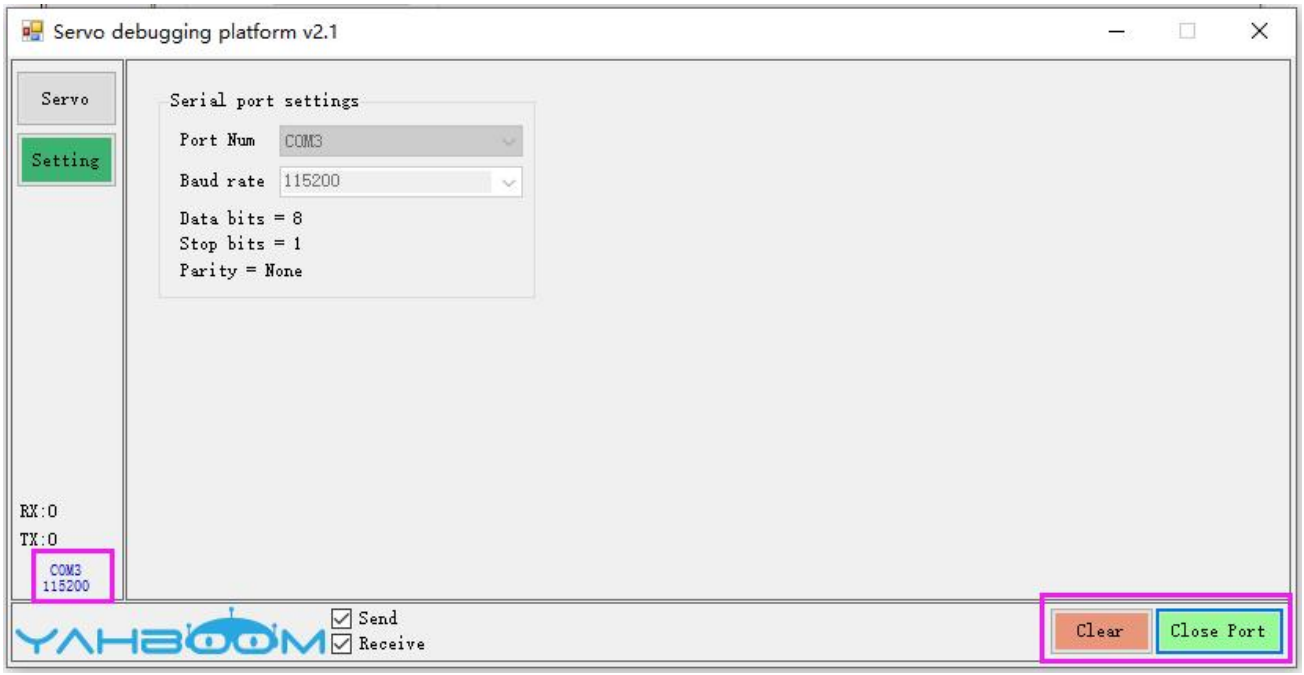
3. Connect to the bus servo to PC software

3.1 Connect servo drive board to your computer.

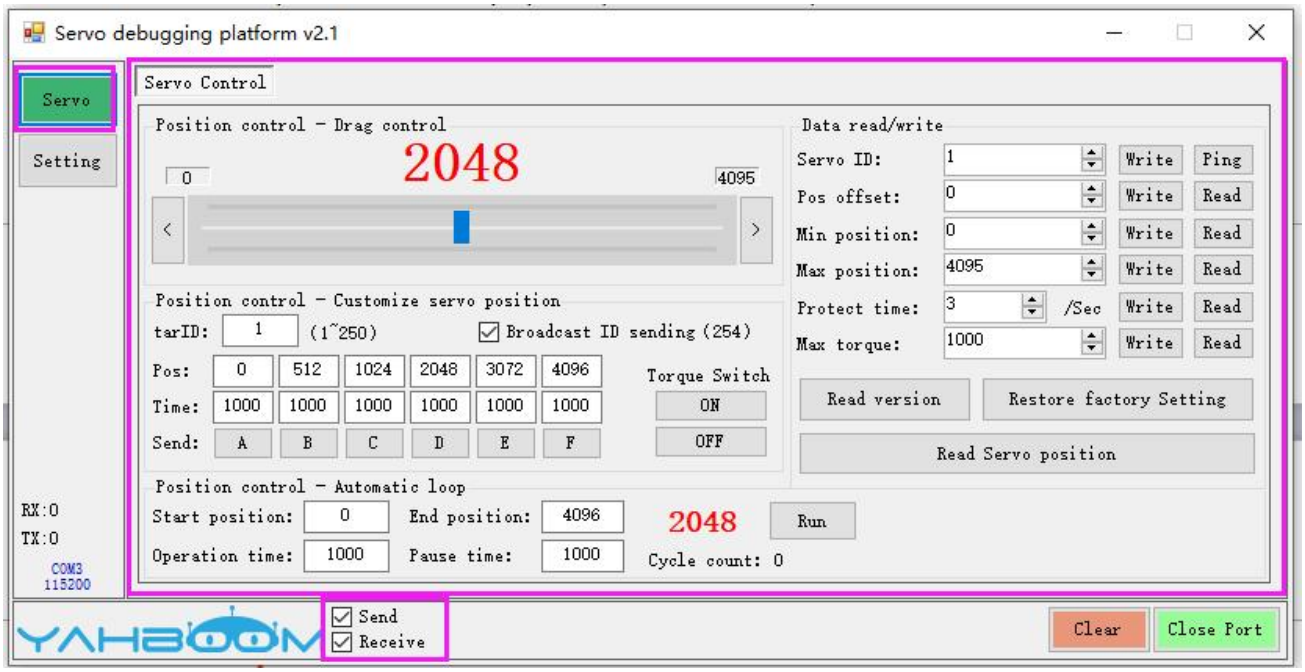
3.2 Double-click to open the servo debugging software. Click [**Settings**]-- [**Serial Port Settings**] to select the corresponding port number, the baud rate is 115200, and finally click [**Open Port**].



3.3 If the serial port is successfully opened, the serial port number and baud rate will be displayed in the lower left corner.
If it can't be opened, please confirm whether the serial port is occupied by other devices.

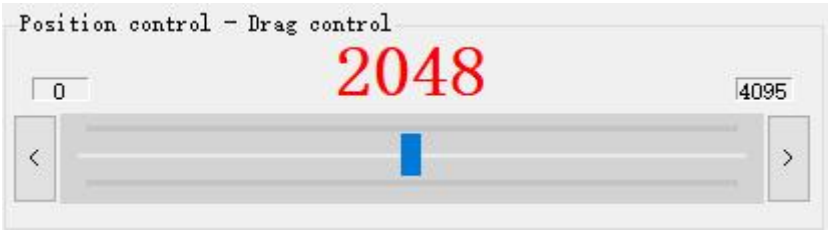


3.4 After the serial port is successfully opened, as shown below, the entire area can be used to control the servo, choose the send display and receive display, which can be used to display the received and sent serial data.



4. PC software control bus servo

4.1 [Position control-Drag control]: Drag the slider directly to change the position of the servo.
In generally, 2048 means the middle position, and the receiving signal range of the servo is 96~4000. You can also customize the maximum and minimum values.
The commands sent are all broadcast commands, which means that all the servos connected to this bus can receive this command and take related actions.



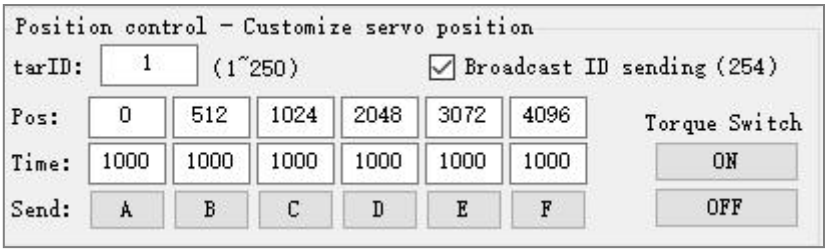
4.2 [Position control -- Customize servo position]: Click “Send [A/B/C/D/E/F]” to control the servo to the specify position. If you choose [Broadcast ID send (254)], all servos on this bus will receive this command and rotate to the specified position; if the [Broadcast ID Send (254)] is not choose, only the bus servo corresponding to the [tar ID] on the left will receive the command and rotate to the specified position.

In the effective range, the smaller the [time], the bus servo will run with faster speed.
If the time is equal to 0, the bus servo will move to the specified position with fastest speed.

[Torque Switch] is effective for all connected servos, [ON] is torque on, that is, the bus servo can be controlled by commands, and the bus servo cannot be moved manually;

[OFF] is torque off, that is, the bus servo can not receive control commands, the bus servo can be

moved manually.



4.3 [Position control -- Automatic loop]: After setting the start position and end position and other parameters, click [Run], the bus servo will circulate back and forth between these two positions, and click [Stop] to end this loop.