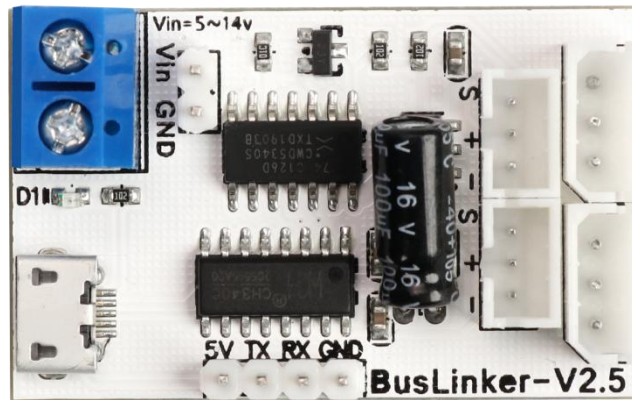


# TTL/USB Debugging Board

## 1. Product Introduction



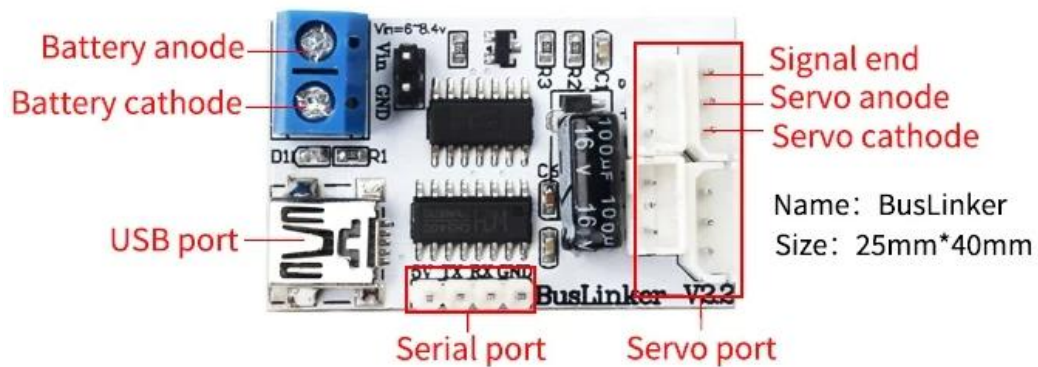
- It can connect TXD and RDX of single-chip microcomputer to control the servo and read the angle of servo.
- Simple wiring. It is only equipped with two power ports of anode and cathode.
- Support angle feedback. It support manually adjust the angle of servo to program the robot.
- Low-voltage alarm function. When the voltage is less than 5.6V, the indicator will make alarm.
- Support online debugging.
- Support serial port communication. It can communicate with other single-chip microcomputers to intelligently control the robot.

## 2. Parameter Instruction

### 2.1 Specification

<b>size</b>	40mm*25mm	<b>Weight</b>	7g
<b>PC software control</b>	Support	<b>External single-chip microcomputer</b> (Secondary development )	Support
<b>Servo angle feedback</b>	Support	<b>Low-voltage alarm</b>	Support

### 2.2 Port Instruction



<b>Name</b>	<b>Function</b>
Positive and negative pole of power	Lithium battery connection port
USB port	Connect the controller to PC to realize communication

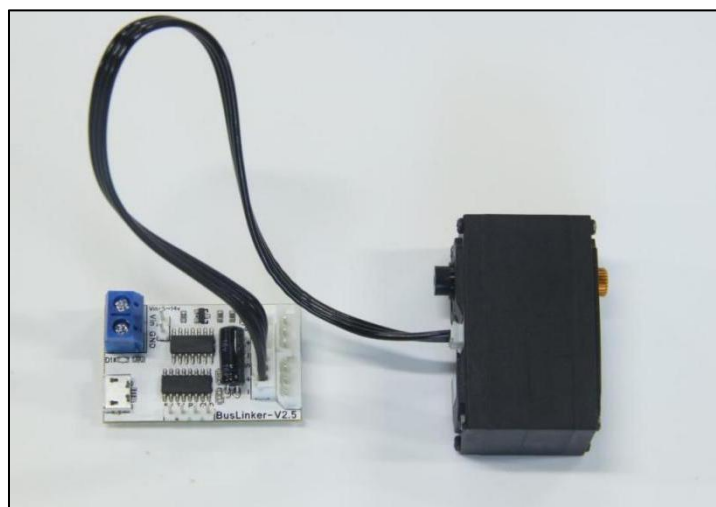
Serial port	Communicate between the controller and the serial ports of other development platforms
Servo port	Connect to control servo

### 3. Use Method

#### 3.1 Hardware Installation

Name	Number
TTL/USB debugging board	1
LX-15D servo (with servo line)	1
USB cable	1

Step 1: Connect LX-15D servo to one of servo ports of debugging board .




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Note: Please connect only one servo to the debugging board at a time!


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Step 2: Connect the controller to computer with USB cable.

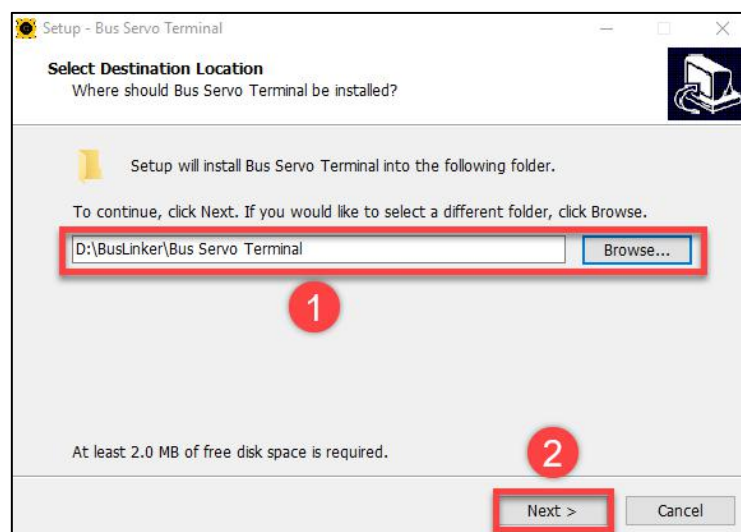


### 3.2 Debugging system Installation

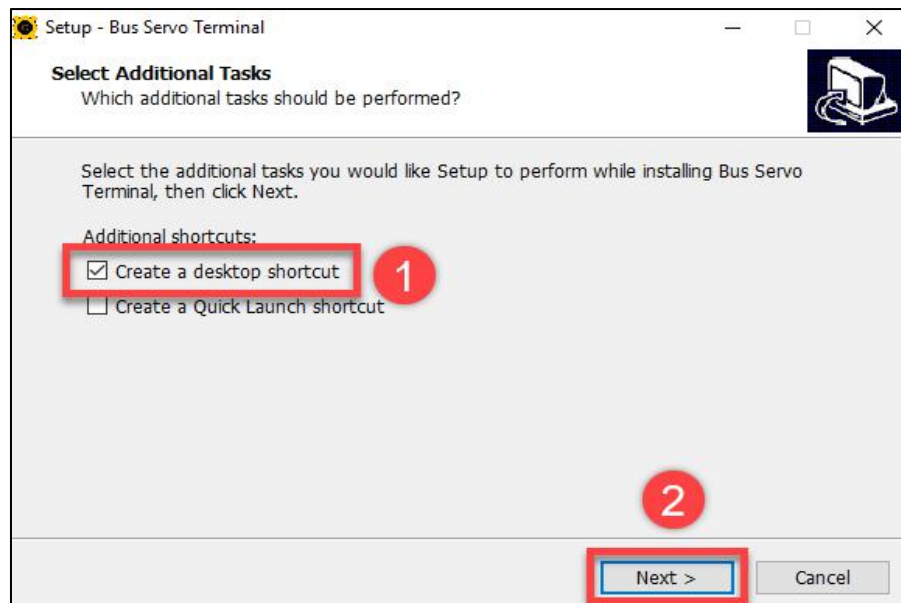
Step 1: Install debugging board software. Find “Bus Servo Terminal V1.7.exe” in folder “Software/ BusLinKer Debugging Board Software/Bus Servo Terminal/” and Double-click to run it.

Name	Date modified	Type	Size
 Bus Servo Terminal V1.7.exe	8/14/2019 6:15 PM	Application	973 KB

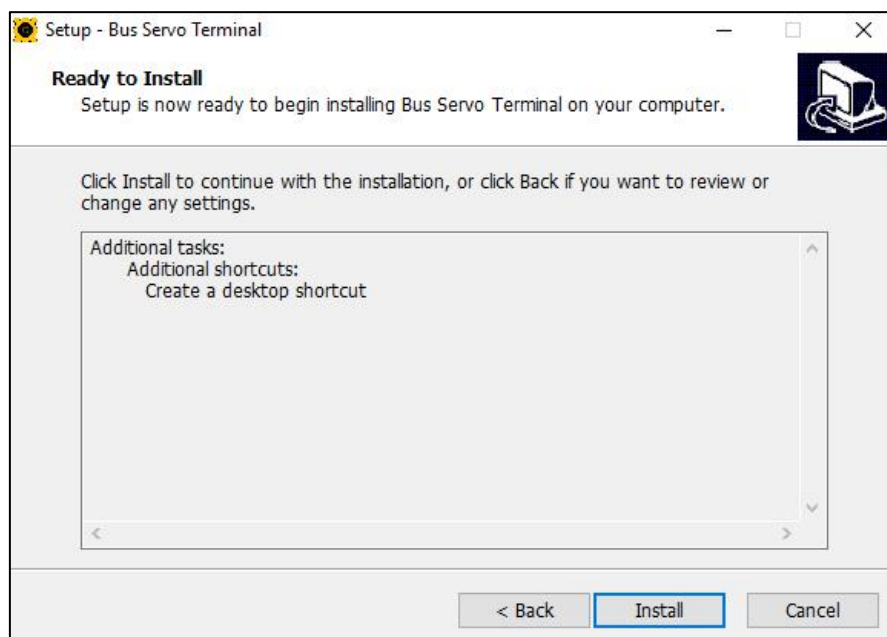
Step 2: Select the path for software installation is recommended to install it in a path other than the C drive, and then click "Next".



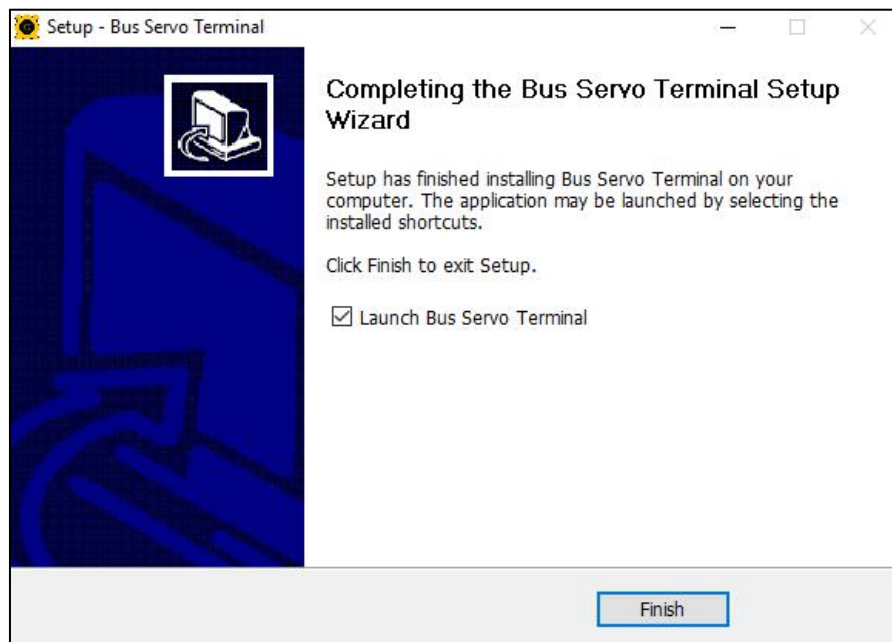
Step 3: Check “Creat a desktop shortcut” and click “Next”.



Step 4: Click “Install” to process.




Step 5: Click “Finish” to complete the installation.

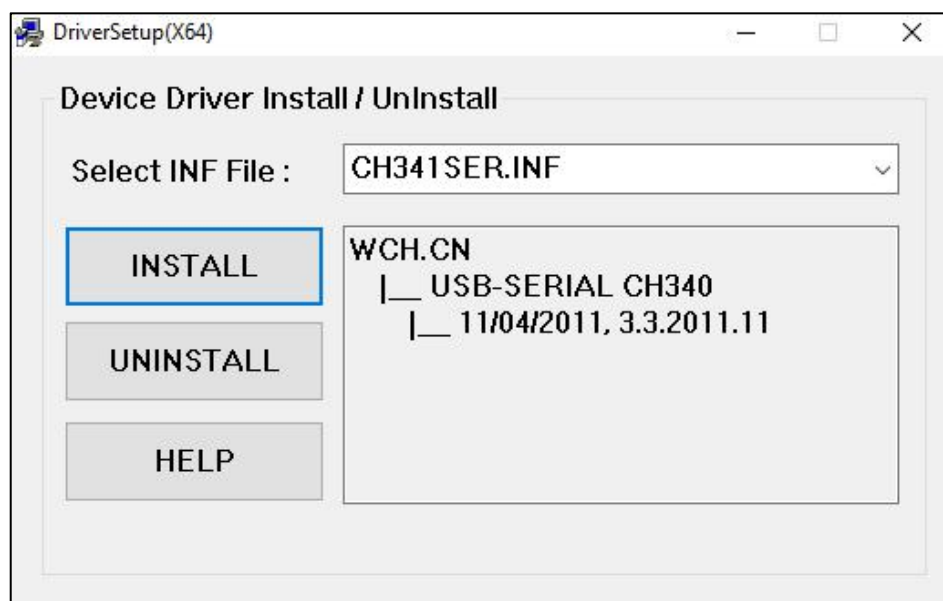


### 3.3 Driver Installation

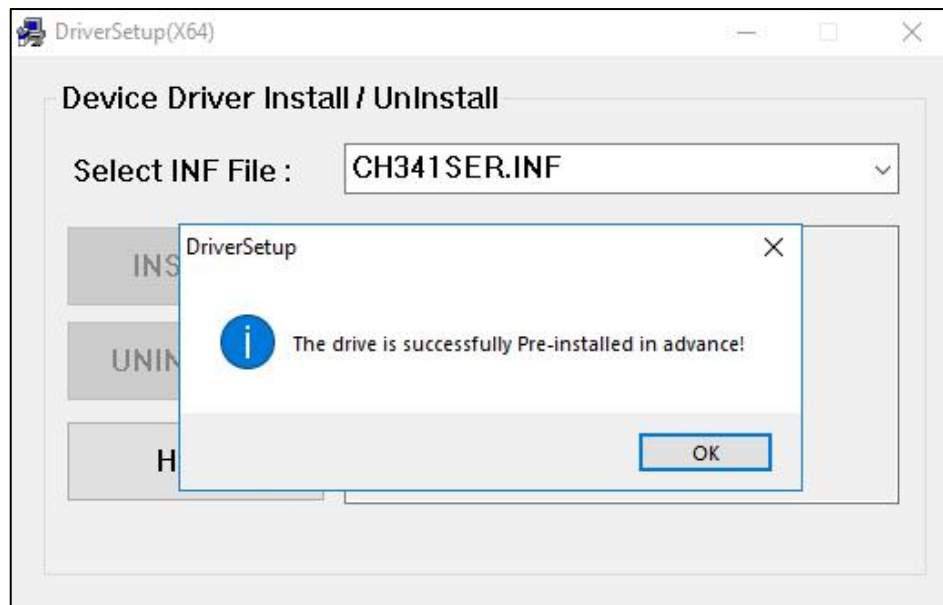
Step 1: Find "ch341ser.exe" in folder "Software/BusLinker Debugging Board Software/ Debugging Board Driver" , then double-click to run it.

Name	Date modified	Type	Size
 ch341ser.exe	5/8/2018 5:10 PM	Application	228 KB

Step 2: Click "Install".



Step 3: After installing, click “OK”.



## 3.4 Servo Debugging

Step 1: After installing driver, click the icon “Bus Servo Terminal V1.7” to enter the servo debugging interface.



Step 2: Select COM serial port, then click “Open port”.



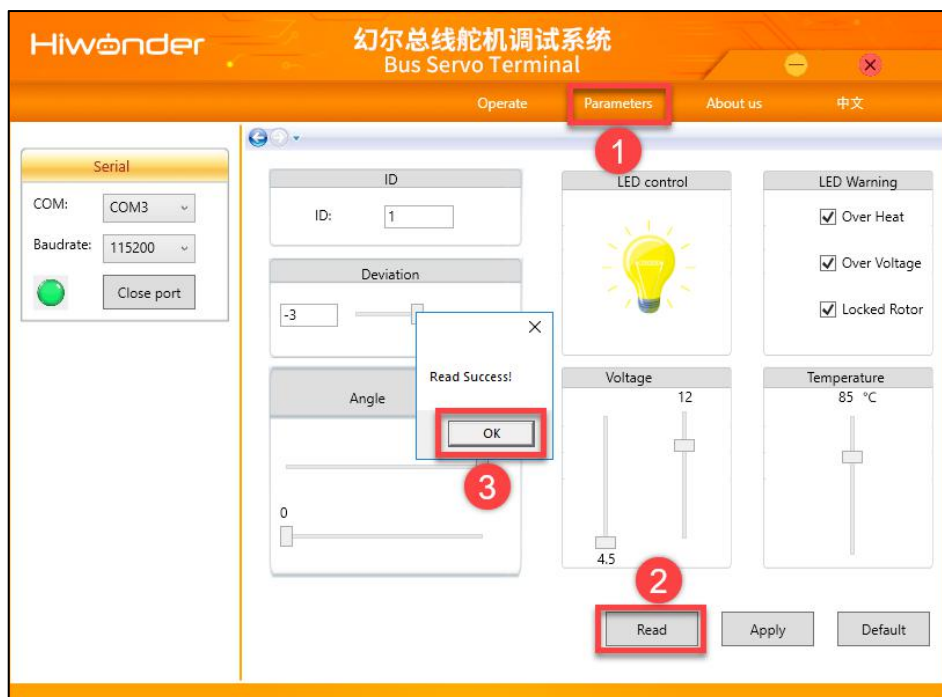


Step 3: Set Servo ID and take No.1 servo as example. In operation interface, choose Servo Mode to know the real-time status of servo.





Step 4: Parameters setting. Select “Parameter” interface to set deviation, angle and other parameters. We take an example of adjusting the deviation of servo. Click “Read” to obtain the current parameters of servo, then click “OK”.



Step 5: After the parameters is read successfully, adjust its deviation according to the servo status. When the adjustment is complete, click “Apply”.

