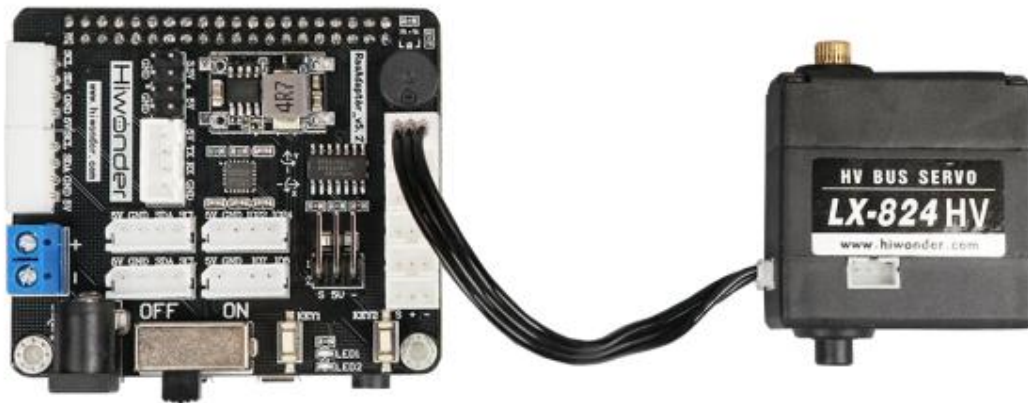# Lesson 2 Read Bus Servo Data

1. Preparation

1.1 Hardware wiring

Connect each bus servo to any bus servo port on the Raspberry Pi board separately. Take the LX-824HV servo as an example.

Note: the bus servo wire adopts anti-reverse plug design, please insert carefully.
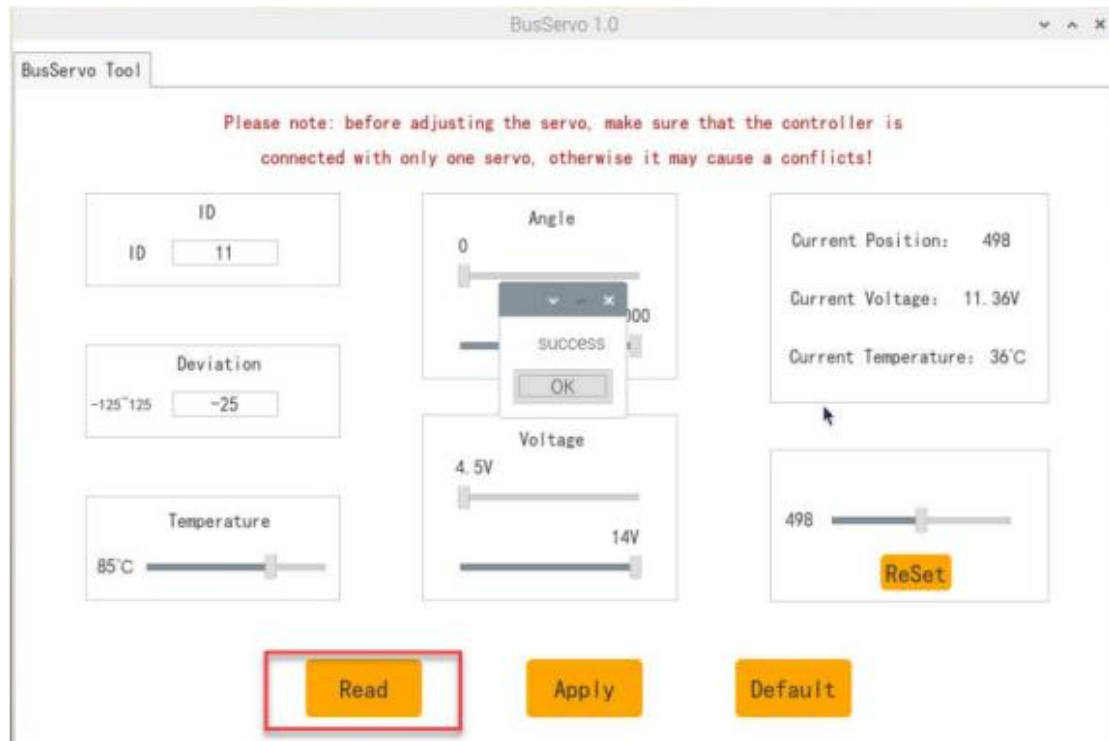
1.2 ID Setting

The sample program is set to control the ID8 servo by default. The ID number can be adjusted through the debugging tool "Bus_Servo_Tool" on the desktop.
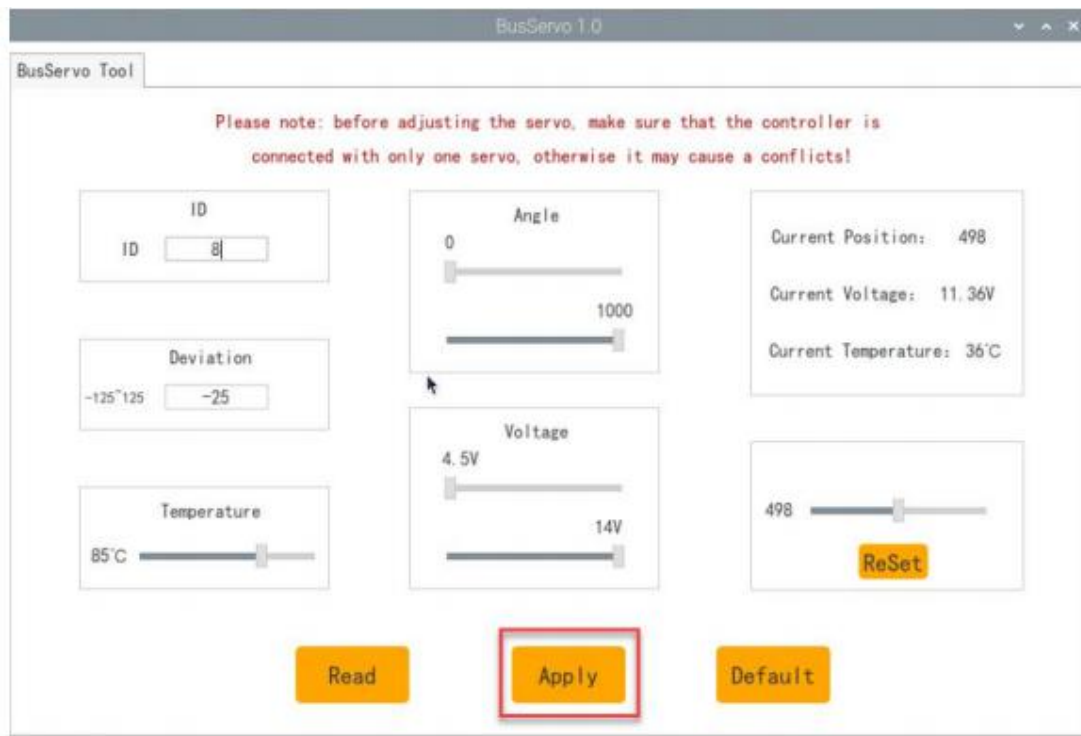
1) Open "Bus_Servo_Tool" debugging tool on Raspberry Pi desktop.

2) Click "Read" button and read servo ID.

3) Select the ID and enter the number 8, click "Set" button, and wait for the prompt "success".

2. Working Principle

Read the bus servo status through calling the related functions in Board library.

The source code of program is located in **/home/pi/TonyPi/HiwonderSDK/BusServoReadStatus.py**

```
25  def getBusServoStatus():
26      Pulse = Board.getBusServoPulse(8) # get the position information of No.8 servo
27      Temp = Board.getBusServoTemp(8) # get the temperature information of No.8 servo
28      Vin = Board.getBusServoVin(8) # get the voltage inforamtion of No.8 servo
29      print('Pulse: {}\nTemp: {}℃\nVin: {}mV\n'.format(Pulse, Temp, Vin)) # print the status information
30      time.sleep(0.5) # delay to view
31
32  while True:
33      Board.setBusServoPulse(8, 500, 1000) # The running time is 1000ms when No.8 servo
34      time.sleep(1)                         rotated to the position 500
35      getBusServoStatus()
36      Board.setBusServoPulse(8, 300, 1000)
37      time.sleep(1)
38      getBusServoStatus()
```

Through calling getBusServoPulse() 、 getBusServoTemp() and

getBusServoVin() functions, the position, temperature and voltage information of bus servo can be obtained respectively. The parameter in parenthesis represents servo ID.

3. Operation Steps

1) Click the icon shown below to enter the LX terminal command line.

2) Enter the command "cd TonyPi/Example/" in the interface and press "Enter" to switch to the directory where the routine is located.

3) Input command "sudo python3 BusServoReadStatus.py" and press "Enter" to control one servo rotation.

4) Press "**Ctrl+C**" can close the program.

4. Project outcome

The servo will rotate slowly. The current position, temperature and voltage information will be displayed on the terminal interface.

```
pi@raspberrypi: ~/TonyPi/HiwonderSDK
File  Edit  Tabs  Help
Official website:http://www.hiwonder.com
Online mall:https://huaner.tmall.com/
---------------------------------------------------------
The following commands need to be used in the LX terminal, which can be opened b
y ctrl+alt+t, or click
Click the black LX terminal icon in the upper bar.
---------------------------------------------------------
Usage:
    sudo python3 BusServoReadStatus.py
---------------------------------------------------------
Version: --V1.1  2020/08/25
---------------------------------------------------------
Tips:
 * Press Ctrl+C to close the program, if it fails, please try multiple times!
---------------------------------------------------------

Pulse: 301
Temp:  40℃
Vin:   12200mV

Pulse: 301
Temp:  41℃
Vin:   12216mV
```

Pulse refers to the position. Temp is temperature. Vin is voltage.