Lesson 7 Read Bus Servo Status

1. Working Principle

On the basis of communication protocol, send ID, rotation angle or time commands to read the status of bus servo.

The source code of program is located in:

/home/ubuntu/armpi_pro/src/armpi_pro_demo/expansion_board_demo/

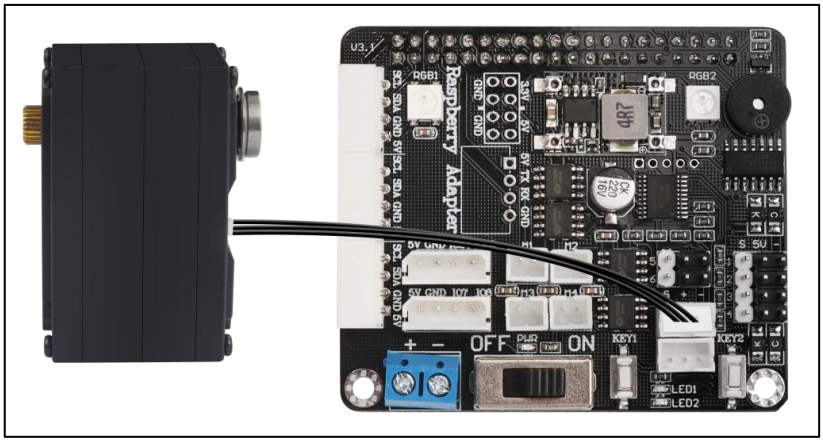
BusServo_ReadStatus.py

```
import time
import Board

print('''
**********************************************************
*********Function: Hiwonder Raspberry Pi expansion board. Servo Reading Status Routine**********
**********************************************************
----------------------------------------------------------
Official website:https://www.hiwonder.com
Online mall:https://hiwonder.tmall.com
----------------------------------------------------------
Tips:
 * Press "Ctrl+C" to close the running program. If fail to close, please try several times!
----------------------------------------------------------
''')

def getBusServoStatus():
    Pulse = Board.getBusServoPulse(6) # get the position information of ID6 servo
    Temp = Board.getBusServoTemp(6)   # get the temperature information of ID6 servo
    Vin = Board.getBusServoVin(6)     # get the voltage information of ID6 servo
    print('Pulse: {}\nTemp:  {}\nVin:   {}\n'.format(Pulse, Temp, Vin)) # Print the status information
    time.sleep(0.5) # delay for viewing


Board.setBusServoPulse(6, 500, 1000) # ID6 servo rotates to 500 in 1000ms
time.sleep(1) # delay 1s
getBusServoStatus() # read the status of bus servo
```

2. Preparation

2.1 Hardware Wiring

Connect one bus servo only to one of bus servo ports on expansion board. Take LX-15D servo as example.

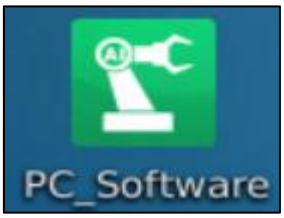


Reminder: The wire of bus servo uses anti-reverse plug. Please do not insert it forcefully.

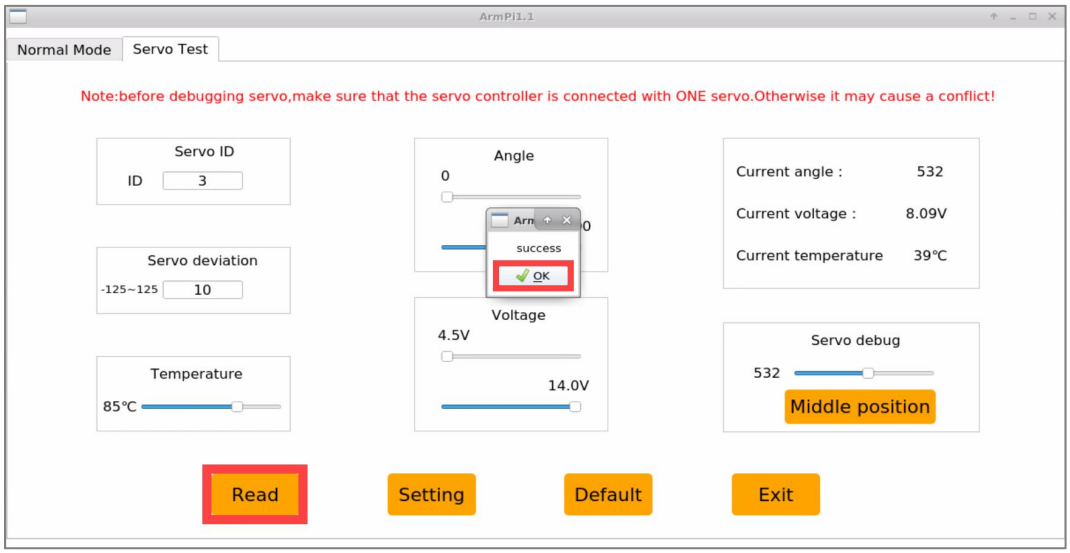
2.2 Set ID

Take controlling ID6 servo as example. Set Servo ID in “Servo Test Tool” in ArmPi Pro PC software.

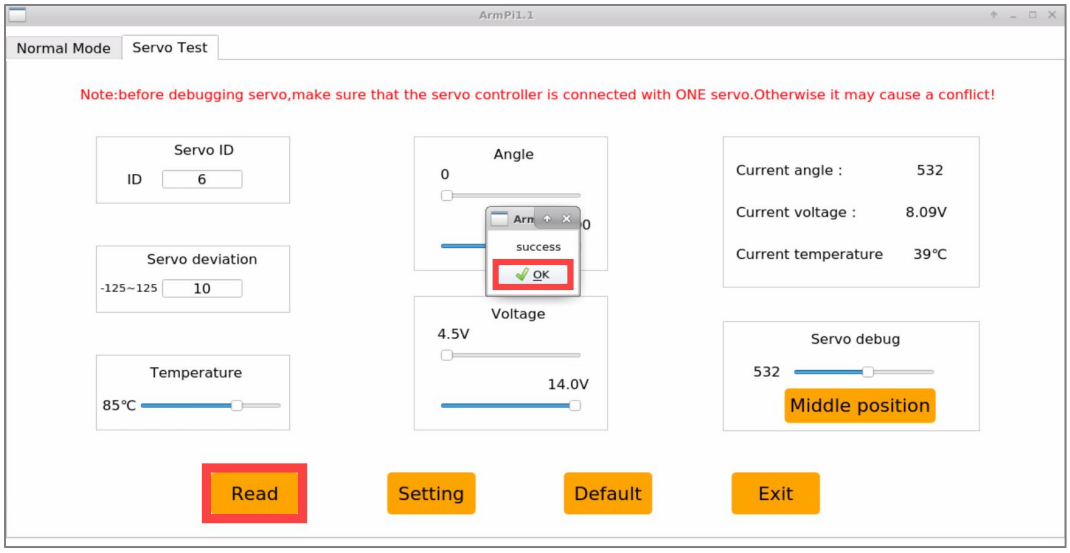
1) Click “**PC_Software**” to open ArmPi Pro PC software.



2) Click “Servo Test” menu bar, click “Read” , and wait for the prompt “success”.



3) In the “Servo ID” area, input “6” for servo ID, click “Set” button, and wait for the prompt “success”.



3. Operation Steps

1) Open the terminal. Click 

in the lower left corner and select 

to enter the terminal.

2) In the opened interface, enter the command "**cd armpi_pro/src/armpi_pro_demo/expansion_board_demo/**" and press "Enter" to access to game programmings directory.

```
ubuntu@ubuntu:~$ cd armpi_pro/src/armpi_pro_demo/expansion_board_demo/
```

3) Then enter command "**sudo python3 BusServo_Speed.py**" and press "Enter" to start the game.

```
ubuntu@ubuntu:~/armpi_pro/src/armpi_pro_demo/expansion_board_demo$
sudo python3 BusServo_ReadStatus.py
```

4) If want to exit the program, you can press "Ctrl+C". If fail to exit, you can try multiple times.

4. Project Outcome

After running program, the terminal will print the current information of position, temperature and voltage of ID6 servo.