

Servo Driver HAT

Servo Driver HAT for Raspberry Pi, 16-Channel, 12-bit, I2C Interface

Resources

- [User Manual](#)
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Software

- [QT software for PC](#)
- [App for Android](#)
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Datasheet

- [PCA96](#)
- [MP1584](#)
- [RT9193](#)

How to use

Using with Raspberry Pi

To use this module, we provide python examples for testing the PCA9685 as well as wifi remote controlling and bluetooth controlling codes

Enable I2C Interface

Open a terminal and run the following commands :

```
sudo raspi-config  
Choose Interfacing Options -> I2C ->yes
```

```
Raspberry Pi Software Configuration Tool (raspi-config)

1 Change User Password Change password for the current user
2 Network Options      Configure network settings
3 Boot Options         Configure options for start-up
4 Localisation Options Set up language and regional settings to match your location
5 Interfacing Options  Configure connections to peripherals
6 Overclock            Configure overclocking for your Pi
7 Advanced Options     Configure advanced settings
8 Update               Update this tool to the latest version
9 About raspi-config   Information about this configuration tool

<Select>                                <Finish>
```

```
Raspberry Pi Software Configuration Tool (raspi-config)

P1 Camera      Enable/Disable connection to the Raspberry Pi Camera
P2 SSH         Enable/Disable remote command line access to your Pi using SSH
P3 VNC         Enable/Disable graphical remote access to your Pi using RealVNC
P4 SPI         Enable/Disable automatic loading of SPI kernel module
P5 I2C         Enable/Disable automatic loading of I2C kernel module
P6 Serial      Enable/Disable shell and kernel messages on the serial connection
P7 I-Wire      Enable/Disable one-wire interface
P8 Remote GPIO Enable/Disable remote access to GPIO pins

<Select>                                <Back>
```

```
Would you like the ARM I2C interface to be enabled?

<Yes>                                <No>
```

Reboot Raspberry Pi :

```
sudo reboot
```

Install libraries

```
sudo apt-get update
sudo apt-get install python-pip
sudo pip install RPi.GPIO
sudo apt-get install python-smbus
```

Download the demo codes and unzip

You should start the Raspberry Pi, open a terminal and run the following commands:

```
sudo apt-get install p7zip-full
wget http://www.waveshare.net/w/upload/6/6c/Servo_Driver_HAT.7z
```

```
7zr x Servo_Driver_HAT.7z -r -o./Servo_Driver_HAT
sudo chmod 777 -R Servo_Driver_HAT
cd Servo_Driver_HAT/Raspberry\ Pi/
```

Run The Examples

Python Examples

Open a terminal and run the following commands:

```
#For python2
cd ~/Servo_Driver_HAT/Raspberry\ Pi/
cd python/
sudo python PCA9685.py
#For python3
cd ~/Servo_Driver_HAT/Raspberry\ Pi/
cd python3/
sudo python3 PCA9685.py
```

Expected result: Connect a servo to Channel 0, the servo will rotate.

WIFI Remote Control

Open a terminal and run the following commands:

```
cd ~/Servo_Driver_HAT/Raspberry\ Pi/
cd Wifi-Control/
sudo python main.py
```

Expected result: Connect the Raspberry Pi and telephone to the same WLAN network. Data will be transmitted by TCP protocol. After running, the IP address and the Port are printed in terminal.

Open the APP and choose the WIFI control, input the IP address and the port then connect..

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It enters the control page if connected successfully. You can click button to control the four servo (Channel 0 to Channel 4).

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You can also connect it with QT software in windows PC.=

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Note: You can download the APP and the QT software from Resources part.