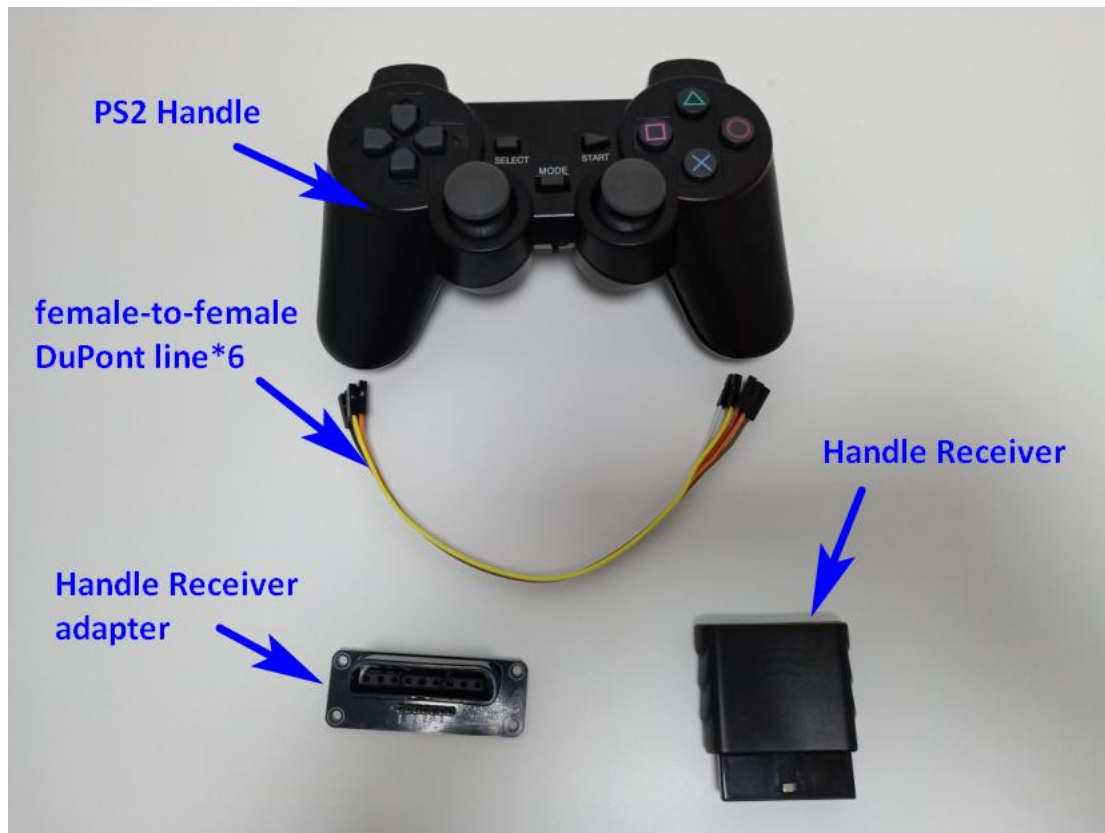


15. Raspberry Pi platform ----- PS2_control

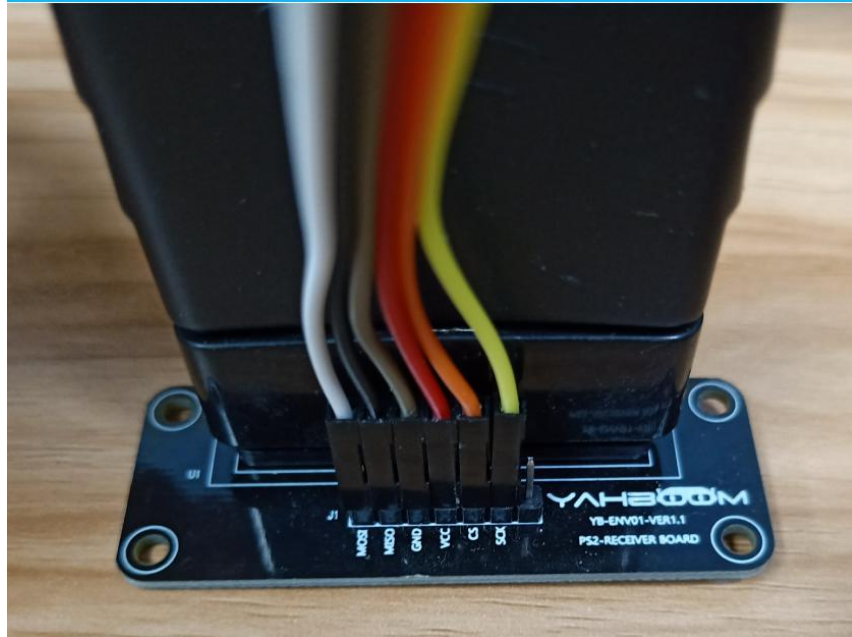
1. Wiring of HardWare

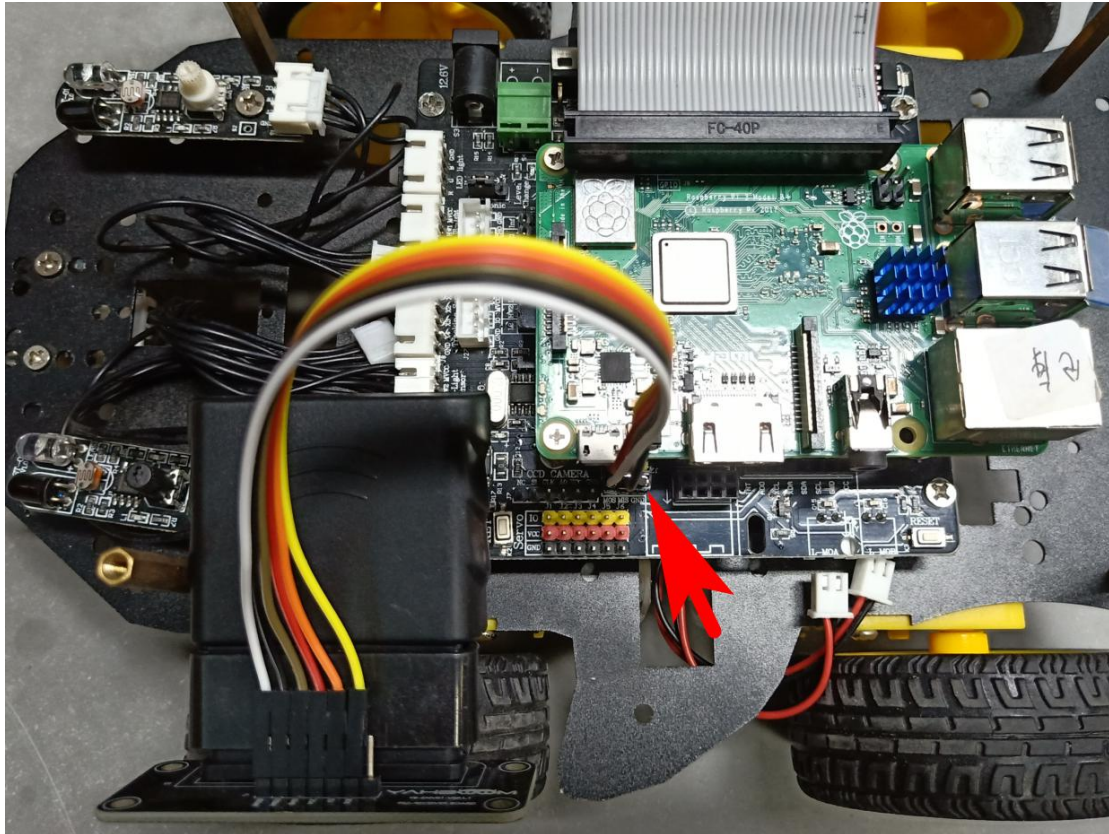
1.1) You need to prepare the Yahboom PS2 handle kit, 4WD car and the DuPont lines. As shown below.



1.2) We need to connect Handle Receiver to expansion board.

Expansion board	PS2 Handle
MVCC	VCC
CS	CS
CLK	SCK
MOS	MOSI
MIS	MISO
GND	GND





1.3) Open the power switch of PS handle, you will see green light on PS handle is flashing.

Open the power switch of robot car, you will see red light on Handle Receiver is keep on, green light on Handle Receiver is flashing.

Wait patiently for a while, they will automatically pair and connect.

1.4) After successfully connected, you can see green light on Handle Receiver stop flashing and keep on. Green light on PS handle stop flashing and keep on.
As shown below.





You need to press “MODE” button on Handle to switch the handle sending mode. As shown below.





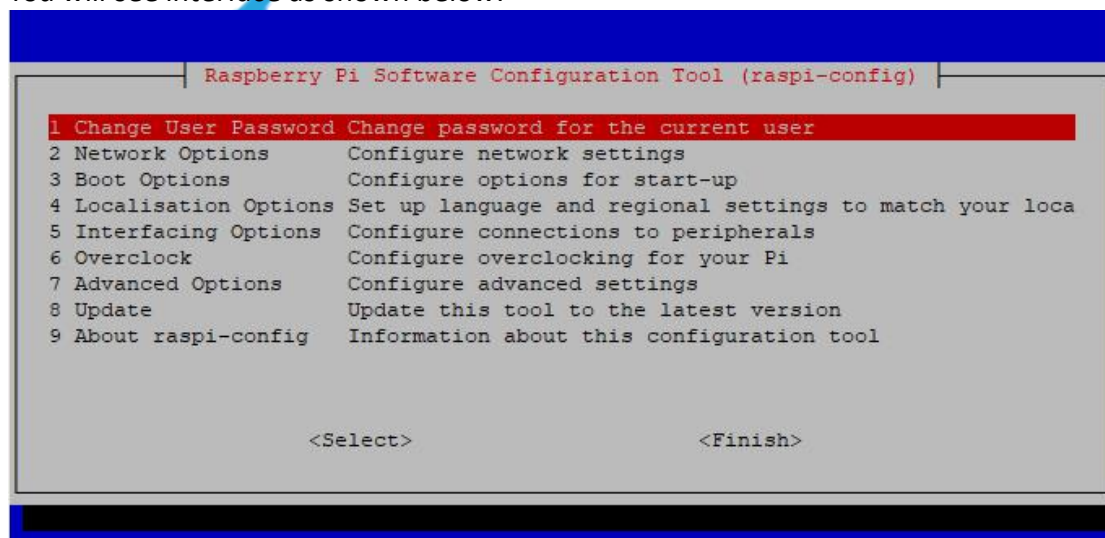
2. Open SPI service

2.1) We need to open SPI service of Raspberry Pi system.

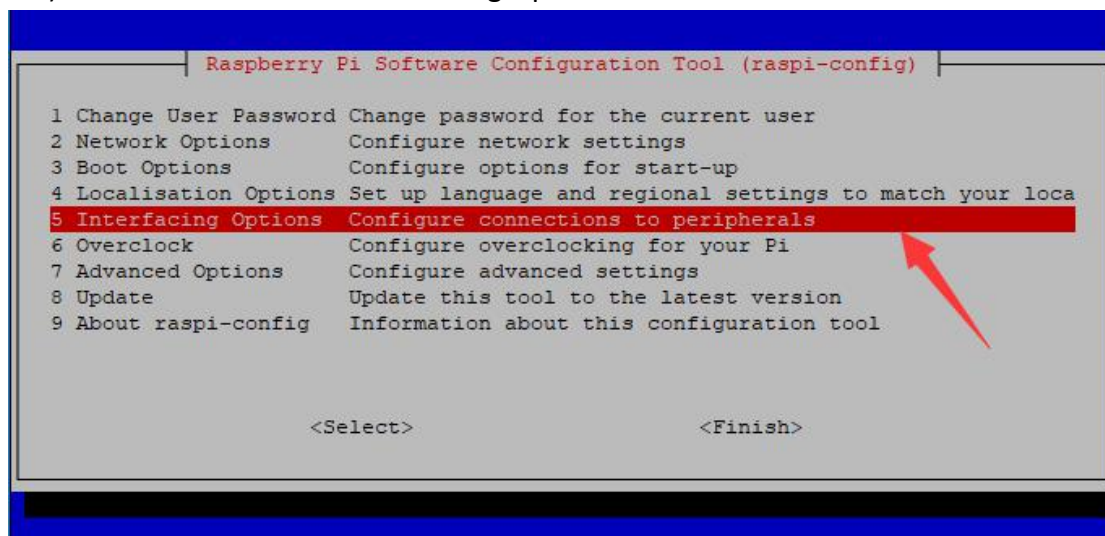
Input command: `sudo raspi-config`

```
pi@raspberrypi:~$ sudo raspi-config
```

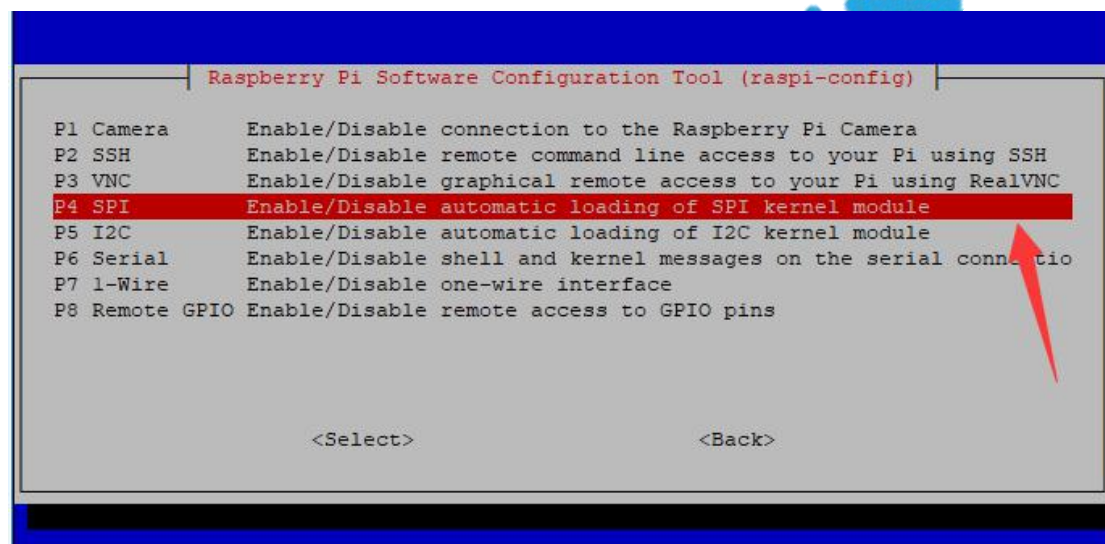
You will see interface as shown below:



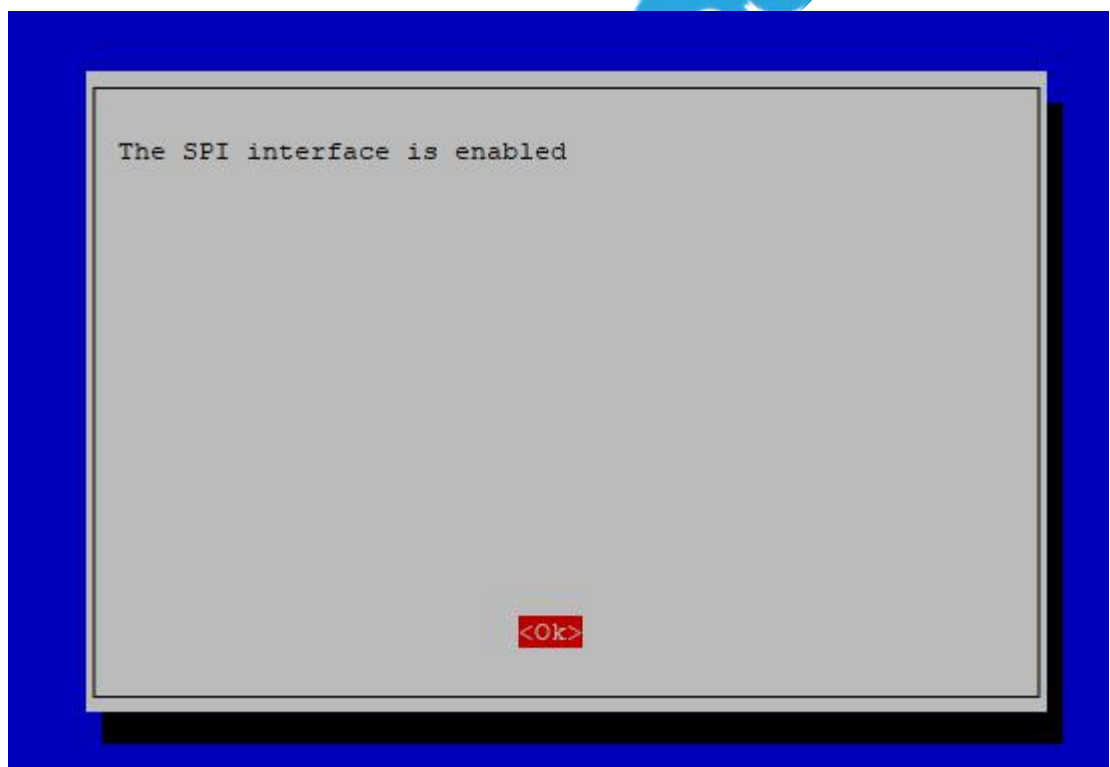
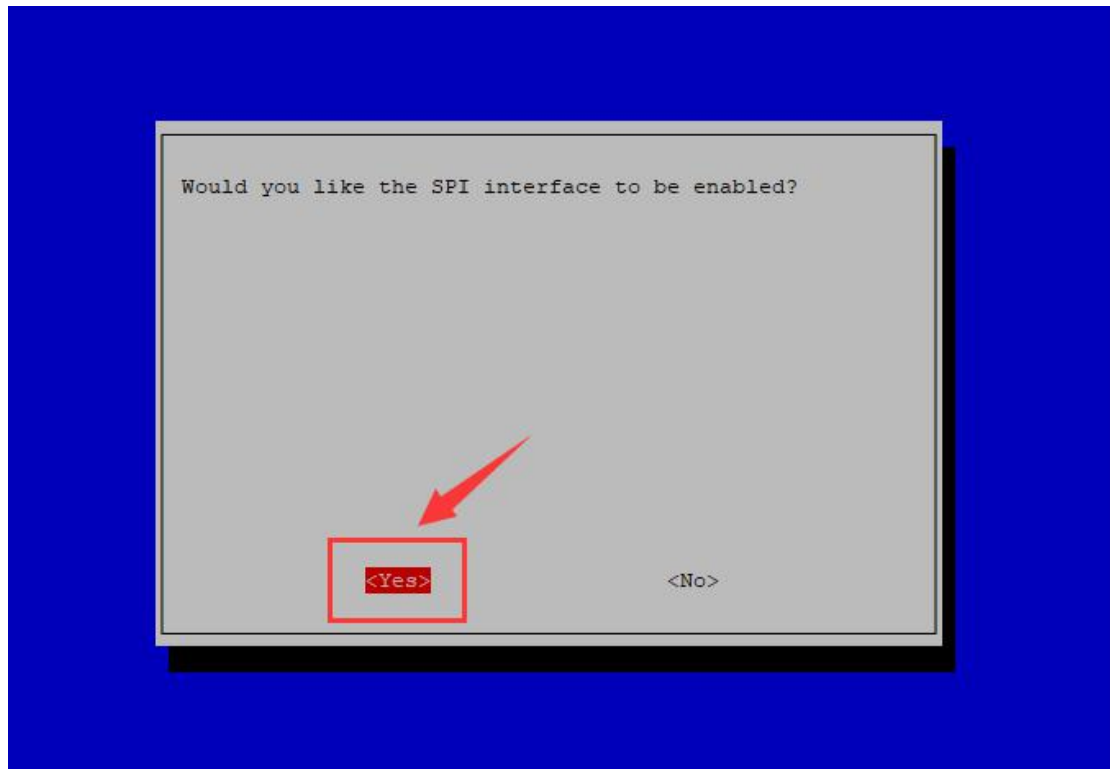
2.2) We need to choose **【Interfacing Options】** .



2.3) We need to choose **【SPI】** .



2.4) We need to enable **【SPI】** .



2.5 Restart Raspberry Pi.

3. Running Code

A. For .c code

Enter the command:

```
gcc PS2_Control.c -o PS2_Control -lwiringPi -lpthread
./PS2_Control
```

as shown below.

```
pi@raspberrypi:~/PS2_control $ ./PS2_Control
```

Then, you can control the robot car by PS2 handle. At the same time, we can see that some data will be printed.

```
pi@raspberrypi:~/PS2_control $ sudo gcc PS2_Control.c -o PS2_Control -lwiringPi -lpthread
pi@raspberrypi:~/PS2_control $ ./PS2_Control
PSB_TRIANGLE
PSB_TRIANGLE
PSB_TRIANGLE
PSB_PAD_UP
PSB_PAD_UP
PSB_PAD_UP
PSB_PAD_UP
PSB_PAD_UP
PSB_PAD_DOWN
PSB_PAD_DOWN
PSB_PAD_DOWN
PSB_PAD_LEFT
PSB_PAD_LEFT
PSB_PAD_LEFT
PSB_PAD_RIGHT
PSB_PAD_RIGHT
```

B. For python code

Enter the command:

```
python PS2_control.py
```

```
pi@raspberrypi: ~/PS2_control
Linux raspberrypi 4.19.50-v7+ #896 SMP Thu Jun 20 16:11:44 BST 2019 armv7l

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Fri Oct 18 09:24:04 2019

SSH is enabled and the default password for the 'pi' user has not been changed.
This is a security risk - please login as the 'pi' user and type 'passwd' to set
a new password.

pi@raspberrypi:~ $ cd PS2_control/
pi@raspberrypi:~/PS2_control $ ls
PS2_Control  PS2_control_1.py  PS2_control_2.py  PS2_Control.c  PS2_control.py
pi@raspberrypi:~/PS2_control $ sudo python PS2_control.py
PS2_control.py:311: SyntaxWarning: name 'CarSpeedControl' is assigned to before
global declaration
global CarSpeedControl
PS2_control.py:312: SyntaxWarning: name 'g_ServoState' is assigned to before glo
bal declaration
global g_ServoState
PSB_PAD_UP
PSB_PAD_UP
PSB_PAD_RIGHT
PSB_PAD_RIGHT
PSB_PAD_UP
PSB_PAD_DOWN
```

These warnings do not affect the program operation

PS2 Handle data

Then, you can control the robot car by PS2 handle. At the same time, we can see that some data will be printed.

4. Handle button function definition

