ArducAM Working with Raspberry Pi

Configurate the network

1、 Scan the available WIFI connection

Run command：sudo iwlist wlan0 scan

result：

wlan0 Scan completed :

Cell 01 - Address: 78:A1:06:FF:7F:96

ESSID:"JL_network"

Protocol:IEEE 802.11bgn

Mode:Master

Frequency:2.412 GHz (Channel 1)

Encryption key:on

Bit Rates:300 Mb/s

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2、 Configurate wpa-supplicant.conf ：

Run command：sudo nano /etc/wpa_supplicant/wpa_supplicant.conf

input：

country=GB

ctrl_interface=DIR=/var/run/wpa_supplicant GROUP=netdev

update_config=1

network={

ssid="JL_network" //put your ssid

psk="00180605" //put your password

}

3、 Ctrl +X then Y, then finally press Enter to save the file

4、 At this point, wpa-supplicant will normally notice a change has occurred within a few seconds, and it will try and connect to the network. If it does not, either manually restart the interface with **sudo ifdown wlan0** and**sudo ifup wlan0**, or reboot your Raspberry Pi with **sudo reboot**.

5、 Test the wifi connection

Run command ping 8.8.8.8

result：

64 bytes from 8.8.8.8: icmp_seq=4 ttl=45 time=58.4 ms

64 bytes from 8.8.8.8: icmp_seq=10 ttl=45 time=58.2 ms

64 bytes from 8.8.8.8: icmp_seq=13 ttl=45 time=65.1 ms

64 bytes from 8.8.8.8: icmp_seq=14 ttl=45 time=62.0 ms

。。。。。。。

Download the code library and compile

1、Make a working directory

Run command：sudo mkdir /home/test

Run command：cd /home/test

2、Download the library

Run command：

sudo git clone **https://github.com/arducam/raspberrypi.git**

3、Compile the library

Run command：cd raspberrypi/ArduCAM4Pi/

Run command：sudo make

There will be the following error message：

gcc -o ov2640_playback default_fonts_spi.o utft_spi.o arducam.o arducam_arch_raspberrypi.o arducam_ov2640_playback.o -lwiringPi -Wall

arducam_arch_raspberrypi.o: In function `arducam_i2c_word_write':

arducam_arch_raspberrypi.c:(.text+0x384): undefined reference to `i2c_smbus_write_word_data'

arducam_arch_raspberrypi.o: In function `arducam_i2c_word_read':

arducam_arch_raspberrypi.c:(.text+0x400): undefined reference to `i2c_smbus_write_byte_data'

arducam_arch_raspberrypi.c:(.text+0x428): undefined reference to `i2c_smbus_read_byte'

collect2: error: ld returned 1 exit status

Makefile:6: recipe for target 'ov2640_playback' failed

make: *** [ov2640_playback] Error 1

solution：

run commands below：

sudo apt-get install wiringpi

sudo apt-get install i2c-tools

sudo apt-get install libi2c-dev

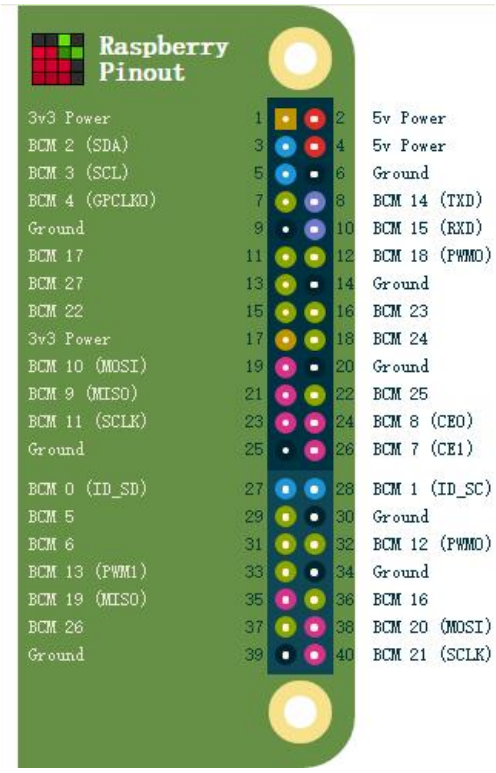
sudo apt-get install python-smbus

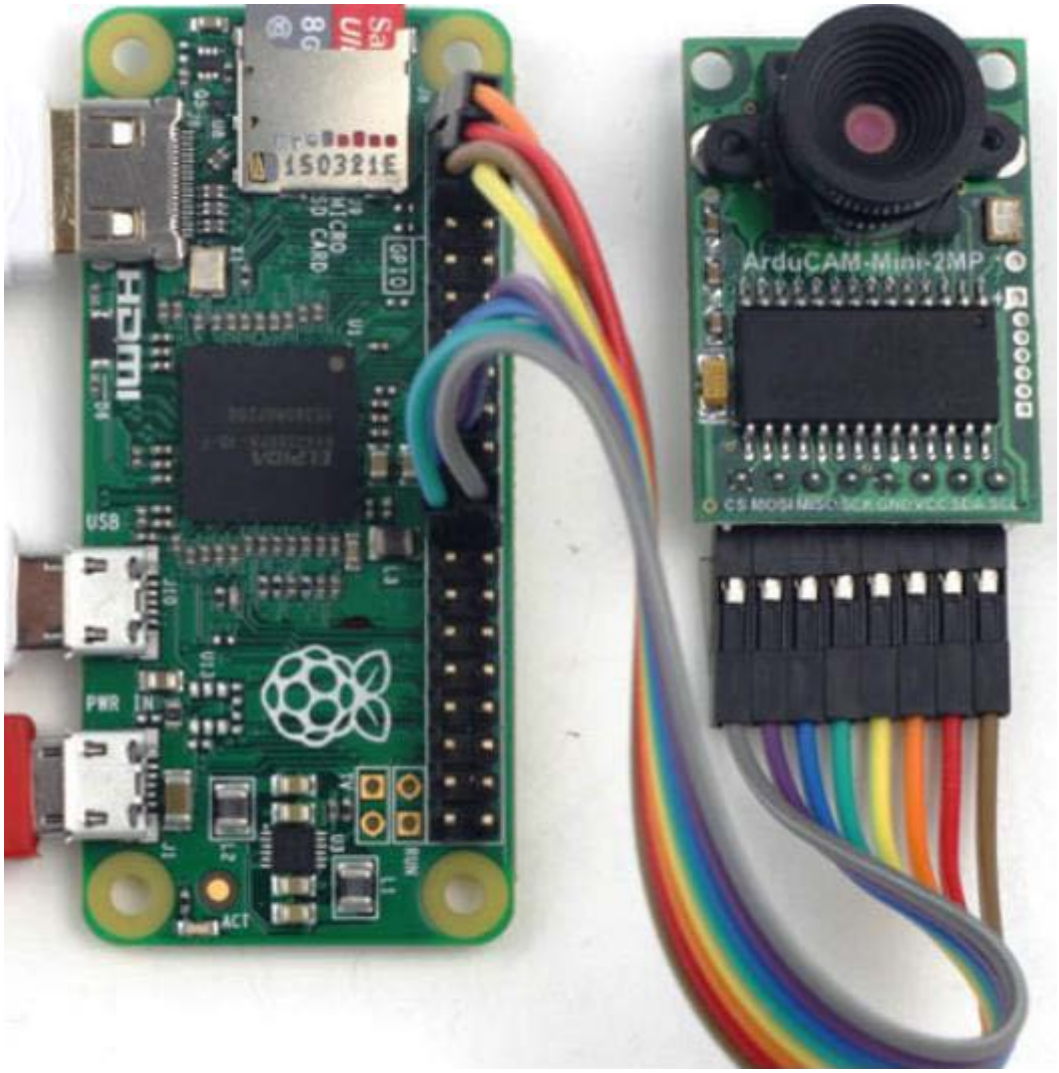
sudo make clean

sudo make

4、Hardware connection

Pin connection between ArduCAM and Raspberry pi								
Raspberry	24	19	21	23	6	1	3	5
ArduCAM-Mini	CS	MOSI	MISO	SCK	GND	5V	SDA	SCL


Raspberry
Pinout
3v3 Power 1
2 5v Power
BCM 2 (SDA) 3
4 5v Power
BCM 3 (SCL) 5
6 Ground
BCM 4 (GPCLK0) 7
8 BCM 14 (TXD)
Ground 9
10 BCM 15 (RXD)
BCM 17 11
12 BCM 18 (PWM0)
BCM 27 13
14 Ground
BCM 22 15
16 BCM 23
3v3 Power 17
18 BCM 24
BCM 10 (MOSI) 19
20 Ground
BCM 9 (MISO) 21
22 BCM 25
BCM 11 (SCLK) 23
24 BCM 8 (CE0)
Ground 25
26 BCM 7 (CE1)
BCM 0 (ID_SD) 27
28 BCM 1 (ID_SC)
BCM 5 29
30 Ground
BCM 6 31
32 BCM 12 (PWM0)
BCM 13 (PWM1) 33
34 Ground
BCM 19 (MISO) 35
36 BCM 16
BCM 26 37
38 BCM 20 (MOSI)
Ground 39
40 BCM 21 (SCLK)



5、Using examples

Make sure the I2C and SPI is enabled before run any command.

sudo nano /boot/config.txt

打开 **SPI**

#------------------------

dtparam=i2c_arm=on

dtparam=spi=on

#----------

Reboot is required

Run command to take a picture from one camera:

sudo ./ov2640_capture -c test.jpg 320x240

Run command to take a picture from 4 cameras:

sudo ./ov2640_4cams_capture -c test1,jpg test2.jp

g test3.jpg test4.jpg 320x240