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# Raspberry Pi RTC Module SKU: DFR0386

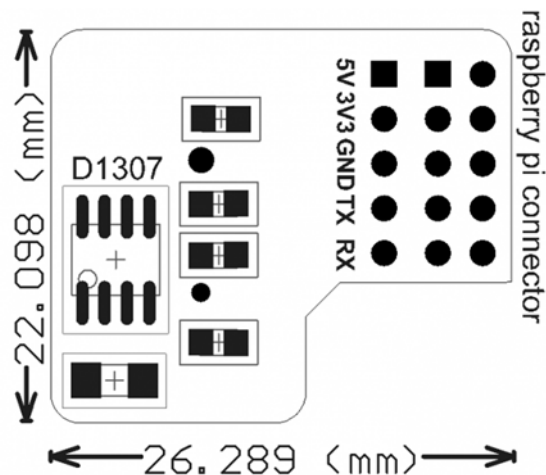
## Introduction

The RTC module is specifically designed for Raspberry Pi. It communicates with Raspberry Pi through I2C bus. There is a Maxim DS1307 and CR1220 button cell on the board to keep the real time for a long time after the Raspberry Pi has its powerdown. Set a serial port, TTL convenient way online debugging.

## Specification=

- RTC module: DS1307
- Battery model: CR1220 button cell
- Operating Voltage: 5V
- I2C address: 0x68
- Clock precision:  $\pm 2\text{ppm}$  ( $0\sim 40^{\circ}\text{C}$ )
- Unit information: Second, Minute, Date, Week, Month and Year
- Two calendar clock
- Operating temperature:  $-10^{\circ}\text{C}$ 至 $+85^{\circ}\text{C}$
- Compatible with Raspberry Pi B/A+/B+/2B
- Interface: 2\*5p 2.54mm

## Dimension





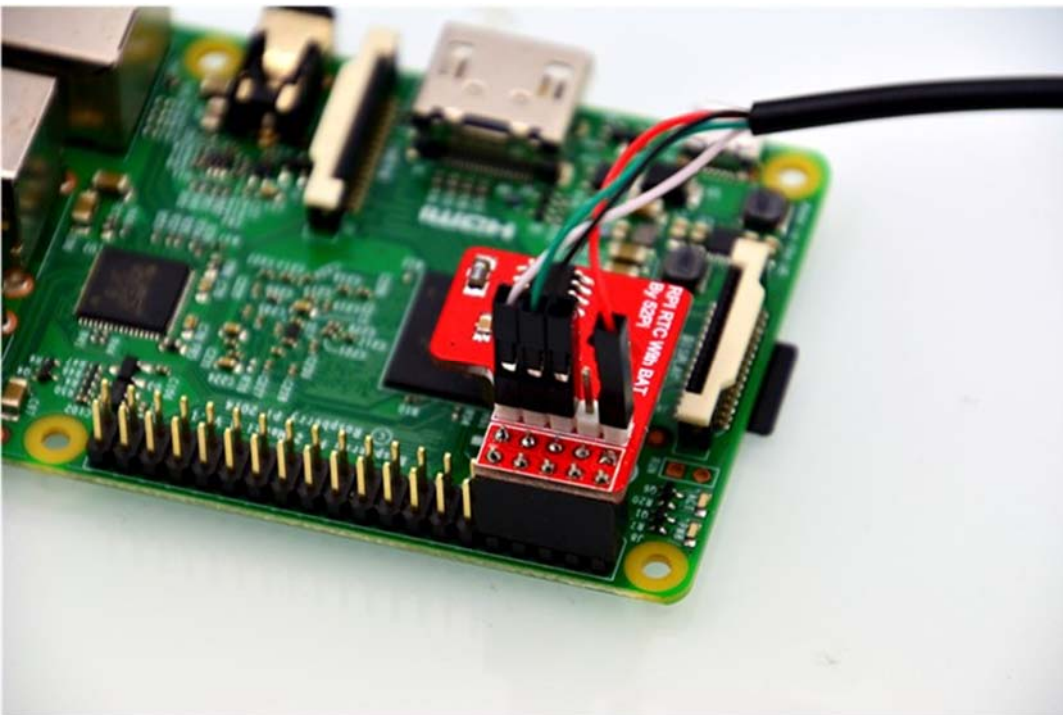
## HOW TO USE

### Connection

- Connect the module to your Pi



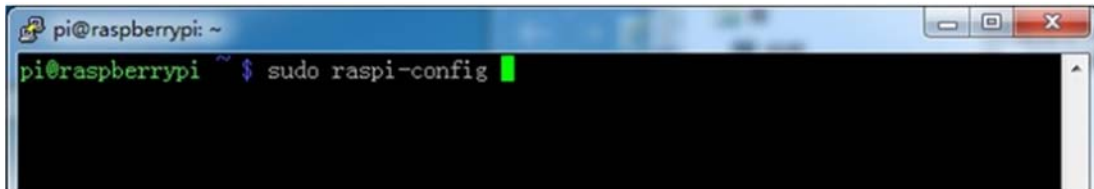
- The module leads to the TX&RX pins, you could set the information via this port.



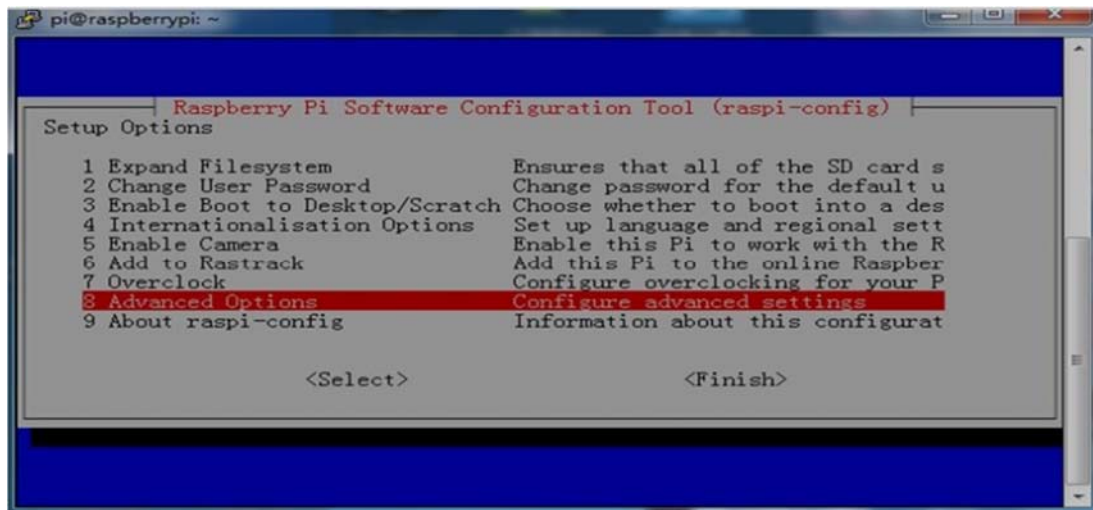
**NOTE:** DO NOT power it again if the Raspberry Pi has been powered, or it will damage the module and Raspberry.

Test

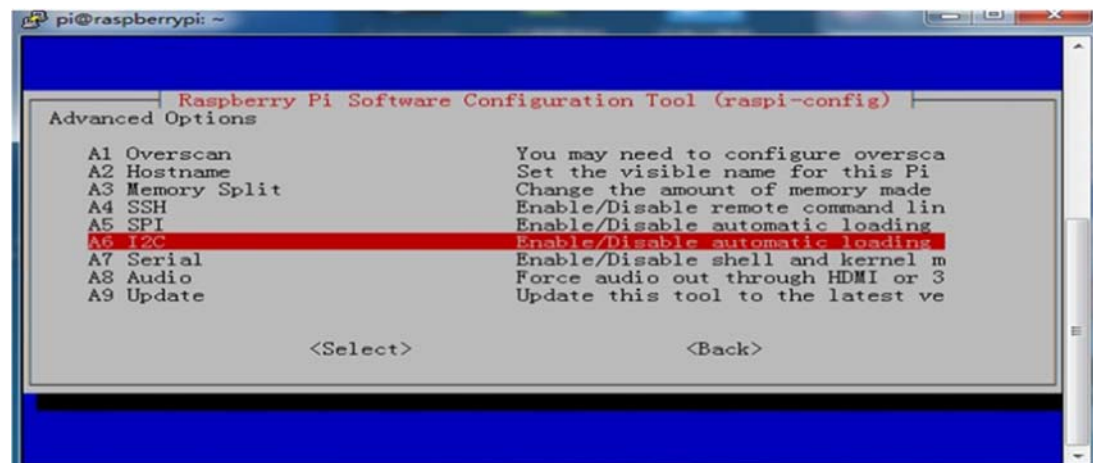
- 1. Input "sudo raspi-config" to Open Raspberry Pi I2C interface



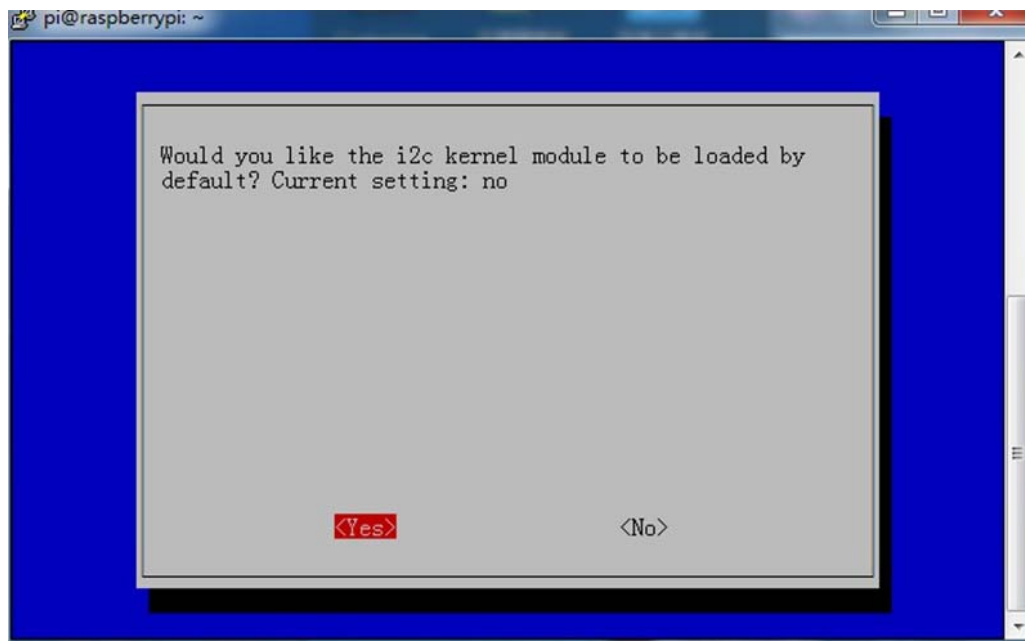
- 2. Select "Advanced Options"



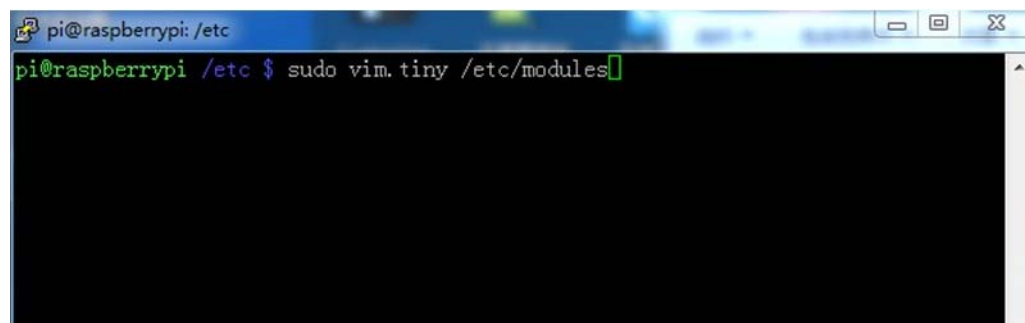
- 3. Select "I2C"



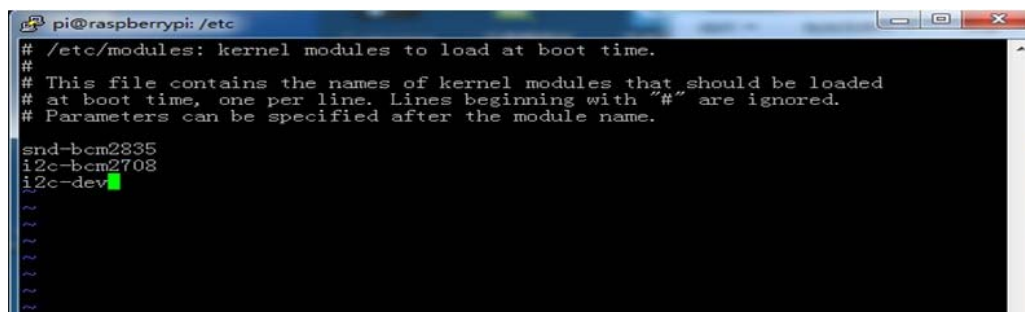
- 4. Select "YES"



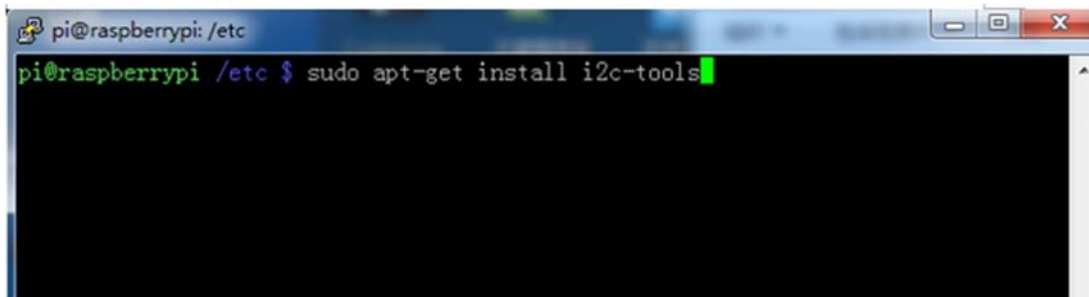
- 5. Input "sudo vim.tiny /etc/modules" to add the module



- 6. Add "i2c-dev" device

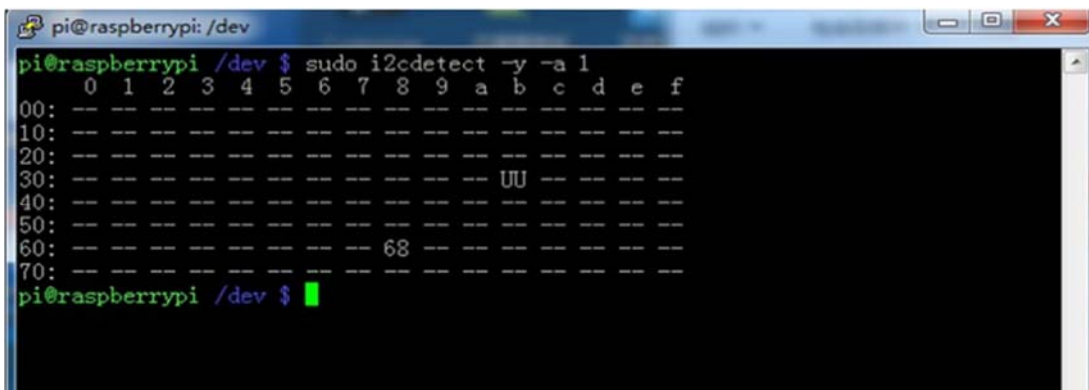


- 7. Install I2C tools, input "sudo apt-get install i2c-tools"



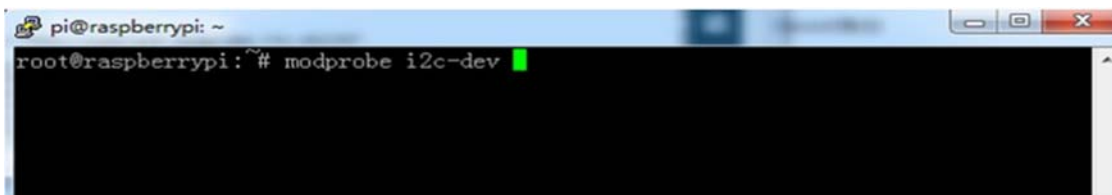
```
pi@raspberrypi: /etc
pi@raspberrypi /etc $ sudo apt-get install i2c-tools
```

- 8. Input "sudo reboot" to reboot Raspberry Pi; Input "sudo i2cdetect -y -a 1" after a reboot. If everything goes well, the module will be detected normally.



```
pi@raspberrypi: /dev
pi@raspberrypi /dev $ sudo i2cdetect -y -a 1
  0  1  2  3  4  5  6  7  8  9  a  b  c  d  e  f
00: -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
10: -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
20: -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
30: -- -- -- -- -- -- -- -- -- -- UU -- -- -- --
40: -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
50: -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
60: -- -- -- -- -- -- -- -- 68 -- -- -- -- -- --
70: -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
pi@raspberrypi /dev $
```

- 9. Input "sudo su--" to get "root"; input "modprobe i2c-dev" to load I2C device.



```
pi@raspberrypi: ~
root@raspberrypi:~# modprobe i2c-dev
```

- 10. Input "echo "ds1307 0x68" >/sys/class/i2c-adapter/i2c-1/new\_device" to load to Raspberry Pi system I2C device.

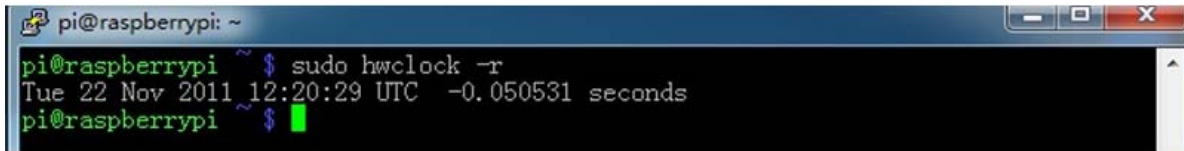


```
root@raspberrypi:~# echo "ds1307 0x68" > /sys/class/i2c-adapter/i2c-1/new_device ^C
root@raspberrypi:~#
```

- 11. Now you can use "hwclock" command to use this module, refer to "man hwclock" for more details.

"hwclock -r" Get RTC module time

"hwclock -w" Set system time

A terminal window titled "pi@raspberrypi: ~" with standard window controls. The prompt is "pi@raspberrypi ~\$". The command "sudo hwclock -r" has been entered. The output is "Tue 22 Nov 2011 12:20:29 UTC -0.050531 seconds". The prompt is now "pi@raspberrypi ~\$" with a green cursor.

```
pi@raspberrypi ~$ sudo hwclock -r
Tue 22 Nov 2011 12:20:29 UTC -0.050531 seconds
pi@raspberrypi ~$
```