6 DS3231精密时钟

1 DS3231配置过程

```
# Remove the module blacklist entry so it can be loaded on boot
sudo sed -i 's/blacklist i2c-bcm2708/#blacklist i2c-bcm2708/' /etc/modprobe.d/raspi-blacklist.conf
```

```
# Load the module now
sudo modprobe i2c-bcm2708
```

```
# Notify Linux of the Dallas RTC device
echo ds1307 0x68 | sudo tee /sys/class/i2c-adapter/i2c-1/new_device
```

```
# Test whether Linux can see our RTC module.
sudo hwclock
```

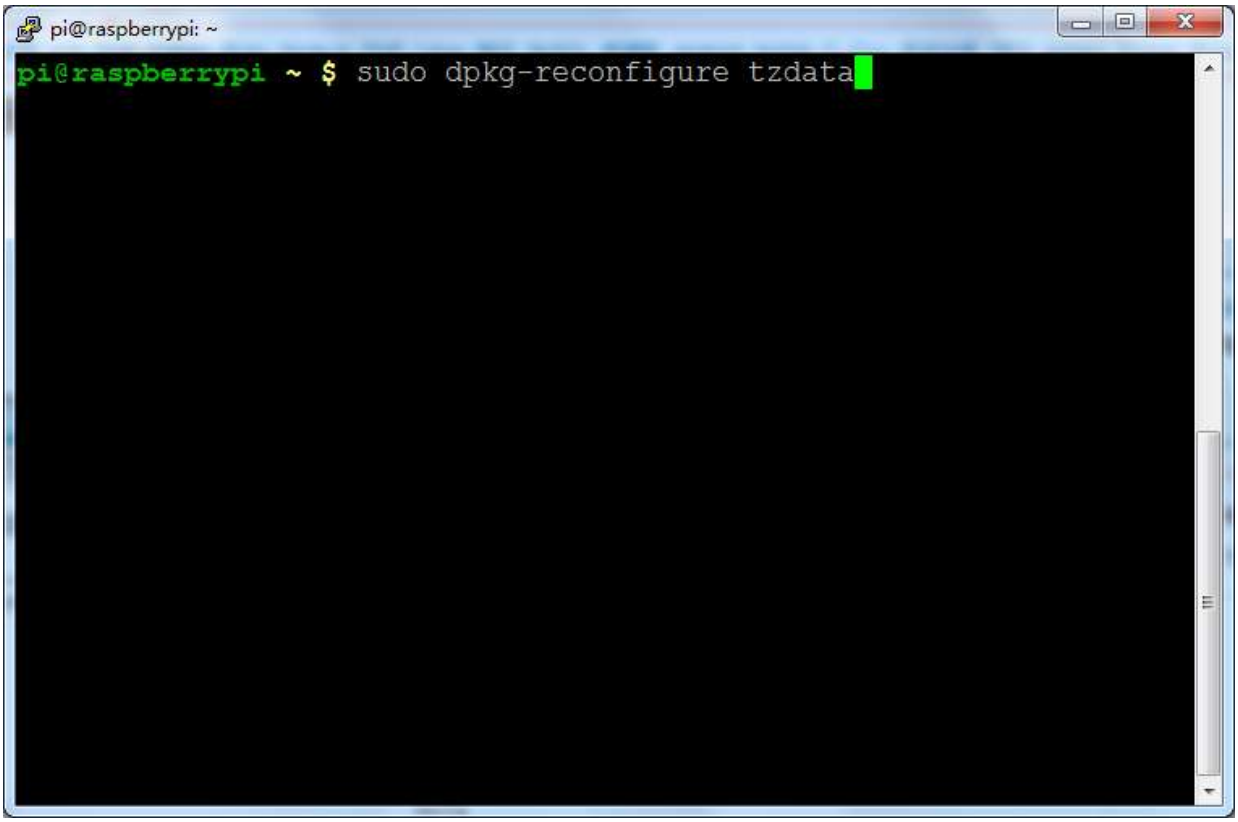
That's it! You can also add the i2c initialisation command to rc.local which means it will be run at every boot up;

```
# Add the RTC device on boot
sudo sed -i 's#^exit 0$#echo ds1307 0x68 > /sys/class/i2c-adapter/i2c-1/new_device#' /etc/rc.local
echo exit 0 | sudo tee -a /etc/rc.local
```

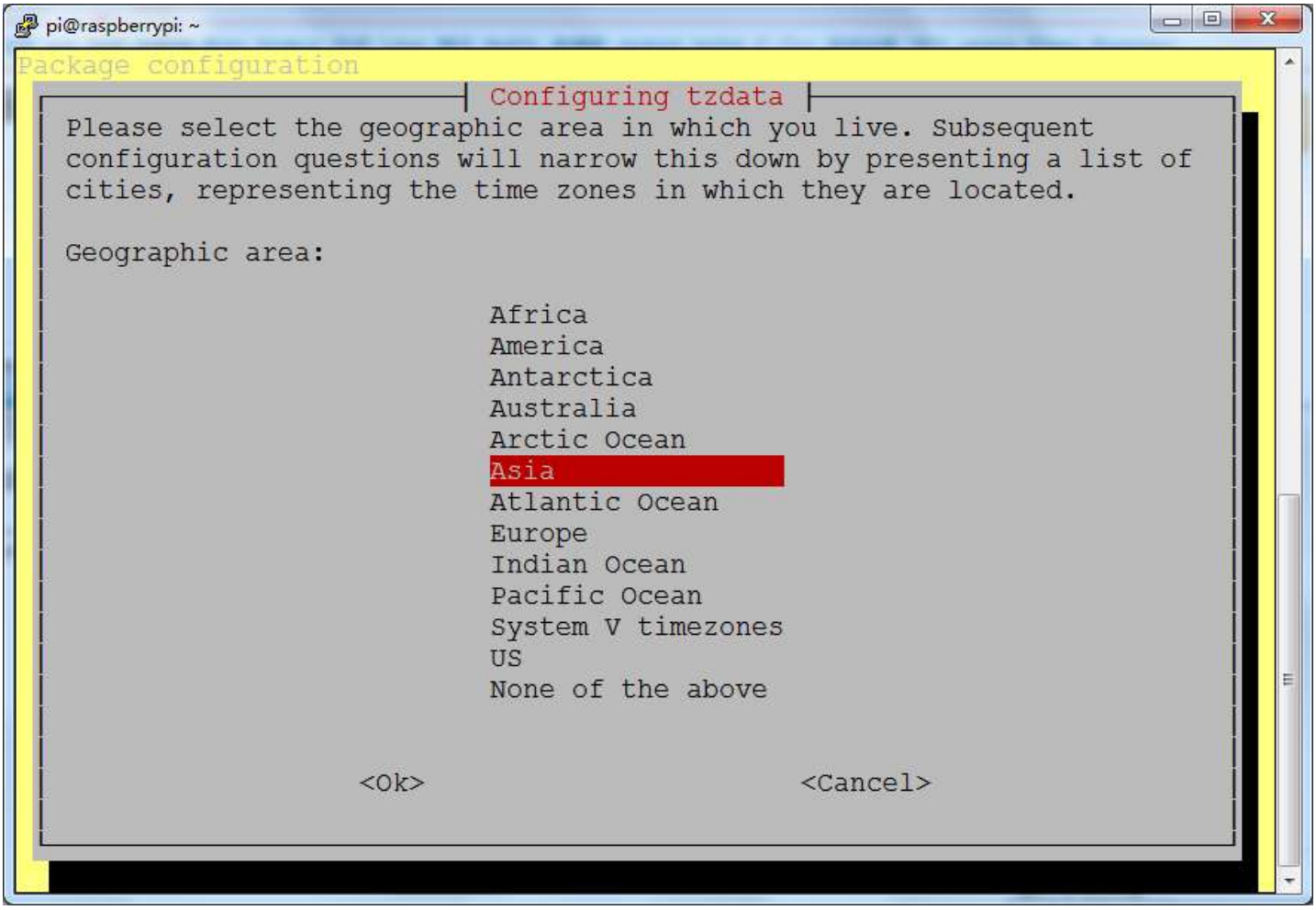
This doesn't cover automatically setting the clock on boot and but you can do so by adding another line (above exit 0) to rc.local with;

```
hwclock -s
```

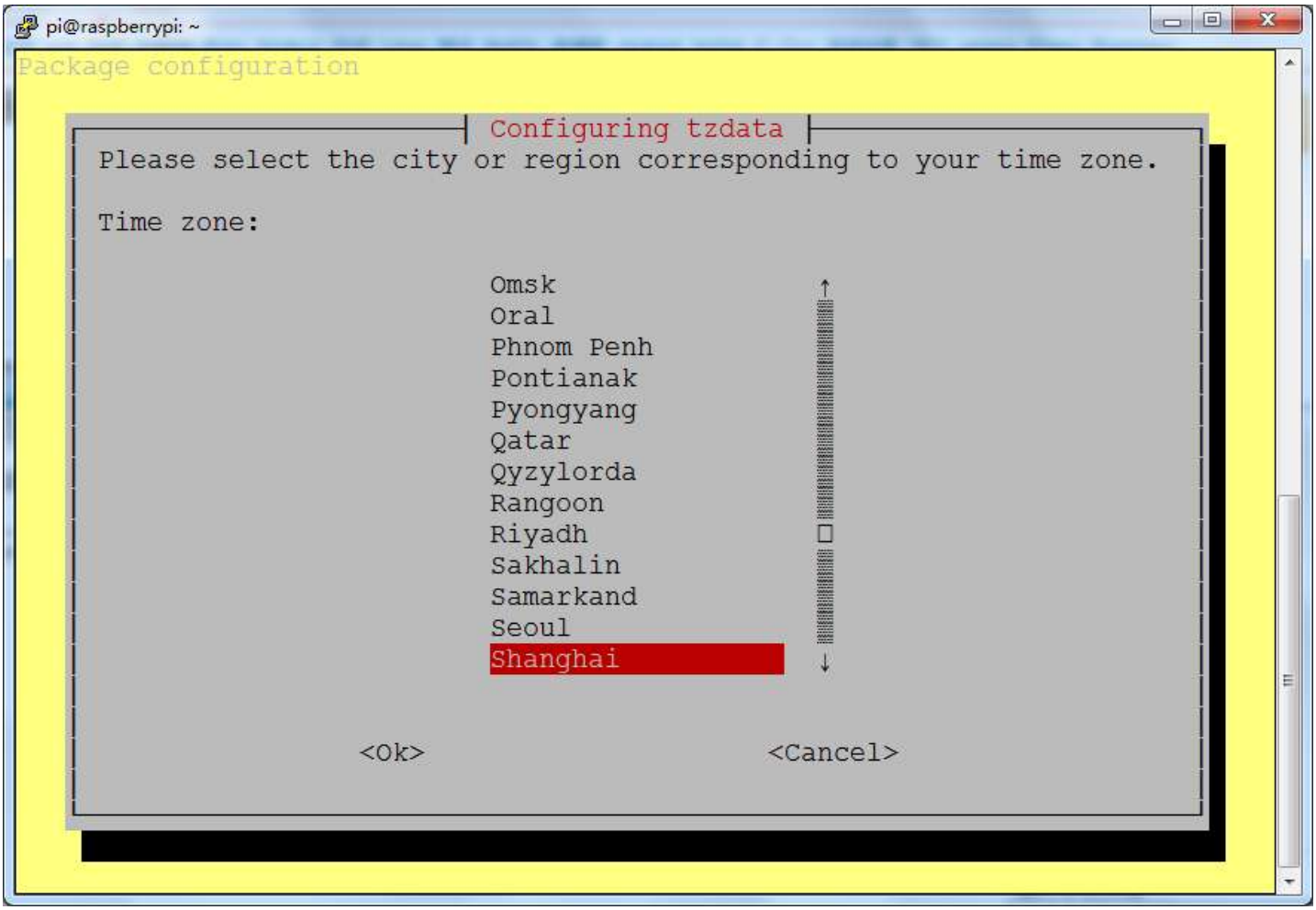
2.1 配置树莓派时区：



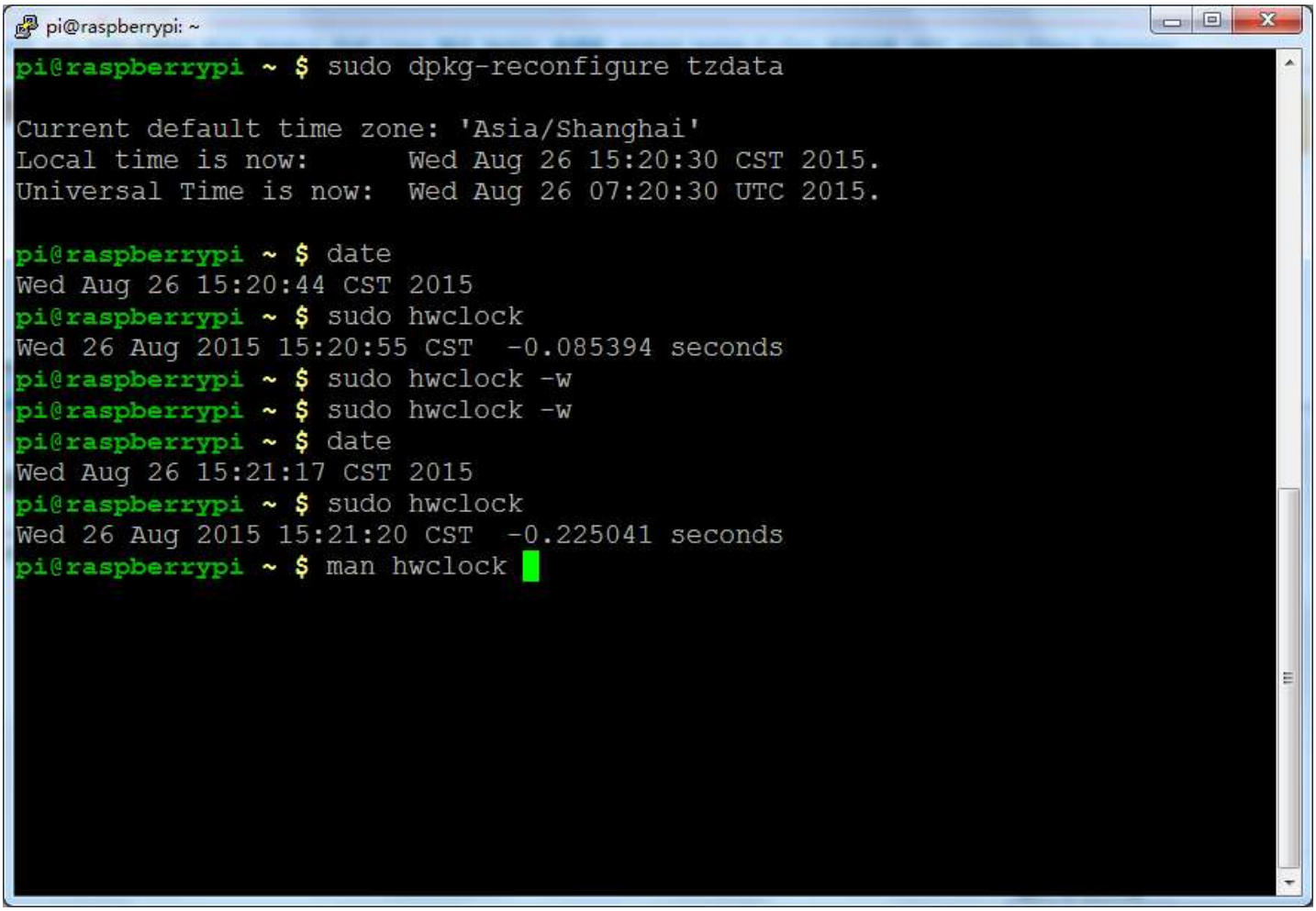
2.2 配置树莓派时区


pi@raspberrypi: ~
Package configuration
Configuring tzdata
Please select the geographic area in which you live. Subsequent configuration questions will narrow this down by presenting a list of cities, representing the time zones in which they are located.
Geographic area:
Africa
America
Antarctica
Australia
Arctic Ocean
Asia
Atlantic Ocean
Europe
Indian Ocean
Pacific Ocean
System V timezones
US
None of the above
<Ok>
<Cancel>

2.3 配置树莓派时区


pi@raspberrypi: ~
Package configuration
Configuring tzdata
Please select the city or region corresponding to your time zone.
Time zone:
Omsk
Oral
Phnom Penh
Pontianak
Pyongyang
Qatar
Qyzylorda
Rangoon
Riyadh
Sakhalin
Samarkand
Seoul
Shanghai
<Ok>
<Cancel>

3 配置之后系统时间和DS3231时间显示效果



4 man hwclock 用法说明

```
pi@raspberrypi: ~
HWCLOCK(8)                  System Administration                  HWCLOCK(8)

NAME
       hwclock - query or set the hardware clock (RTC)

SYNOPSIS
       hwclock [function] [option...]

DESCRIPTION
       hwclock is a tool for accessing the Hardware Clock.  You can display
       the current time, set the Hardware Clock to a  specified  time,  set
       the Hardware Clock from the System Time, or set the System Time from
       the Hardware Clock.

       You can also run hwclock periodically to add or subtract  time  from
       the  Hardware  Clock  to  compensate for systematic drift (where the
       clock consistently loses or gains time at a certain rate  when  left
       to run).

FUNCTIONS
       You  need  exactly one of the following options to tell hwclock what
       function to perform:

       -r, --show
              Read the Hardware Clock and print the time on  standard  out-
              put.   The  time  shown  is always in local time, even if you
 Manual page hwclock(8) line 1 (press h for help or q to quit)
```

5 实验接线图