

# 如何修改显示方向和触摸

(GPIO-电阻触摸)

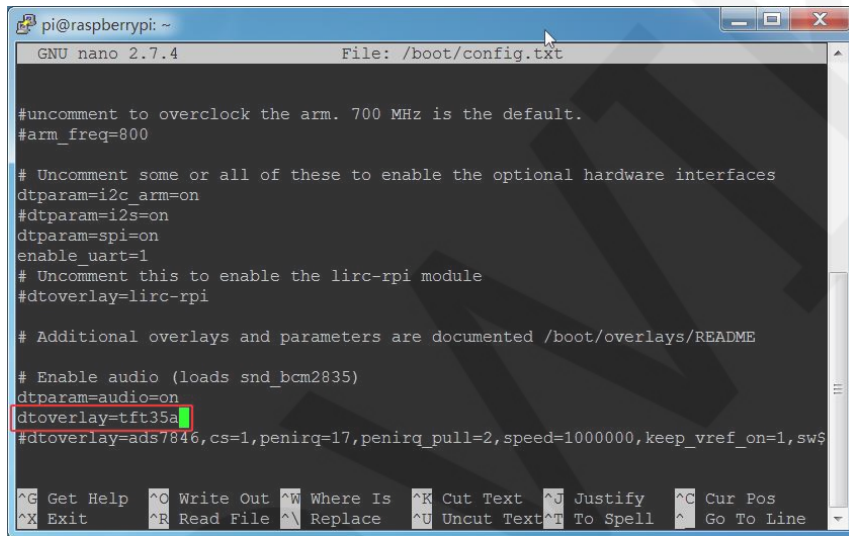
## 一、GPIO 接口型 LCD 旋转显示方法：

(适用于 GPIO 接口型 LCD(2.4 寸, 2.8 寸, 3.2 寸, 3.5 寸), 不适用 HDMI 接口型 LCD)

### 1.1 打开 config.txt 文件，在树莓派上执行命令：

```
sudo nano /boot/config.txt
```

如下图：



```
pi@raspberrypi: ~
GNU nano 2.7.4 File: /boot/config.txt

#uncomment to overclock the arm. 700 MHz is the default.
#arm_freq=800

# Uncomment some or all of these to enable the optional hardware interfaces
dtparam=i2c_arm=on
#dtparam=i2s=on
dtparam=spi=on
enable_uart=1
# Uncomment this to enable the lirc-rpi module
#dtoverlay=lirc-rpi

# Additional overlays and parameters are documented /boot/overlays/README

# Enable audio (loads snd_bcm2835)
dtparam=audio=on
dtoverlay=tft35a
#dtoverlay=ads7846,cs=1,penirq=17,penirq_pull=2,speed=1000000,keep_vref_on=1,sws

^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text   ^J Justify    ^C Cur Pos
^X Exit      ^R Read File  ^\ Replace   ^U Uncut Text ^T To Spell   ^_ Go To Line
```

### 1.2. 如使用 2.4 寸/2.8 寸/3.2 寸 LCD 则找到 “dtoverlay=tft9341” 行，添加 rotate 参数，格式如下：

```
dtoverlay=tft9341:rotate=value
```

如使用 3.5 寸 LCD 则找到 “dtoverlay=tft35a” 行，添加 rotate 参数，格式如下：

```
dtoverlay=tft35a:rotate=value
```

(value 的值为 0, 90, 180, 270)

以 3.5inch RPi Display (MPI3501) 为例说明：

如需旋转 0 度（竖屏显示，LCD 排线在上方），则对应值为：

```
dtoverlay=tft35a:rotate=0
```

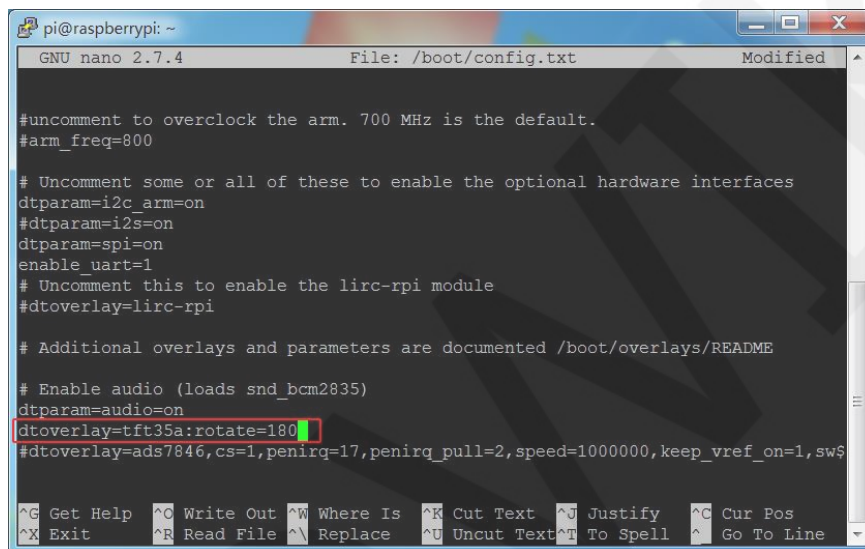
如需旋转 90 度（横屏显示，此方向为默认显示方向），则对应值为：

```
dtoverlay=tft35a:rotate=90
```

如需旋转 180 度（竖屏显示），则对应值为：

```
dtoverlay=tft35a:rotate=180
```

如图：



```
pi@raspberrypi: ~
GNU nano 2.7.4 File: /boot/config.txt Modified

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dtparam=i2c_arm=on
#dtparam=i2s=on
dtparam=spi=on
enable_uart=1
# Uncomment this to enable the lirc-rpi module
#dtoverlay=lirc-rpi

# Additional overlays and parameters are documented /boot/overlays/README

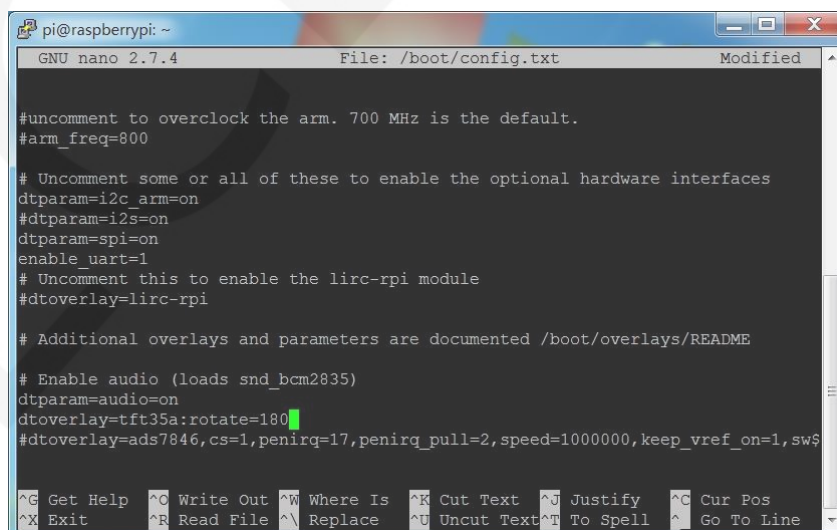
# Enable audio (loads snd_bcm2835)
dtparam=audio=on
dtoverlay=tft35a:rotate=180
#dtoverlay=ads7846,cs=1,penirq=17,penirq_pull=2,speed=1000000,keep_vref_on=1,sw$

^G Get Help ^C Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell ^_ Go To Line
```

如需旋转 270 度（横屏显示），则对应值为：

```
dtoverlay=tft35a:rotate=270
```

按键盘 **Ctrl + X**，退出；



```
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#arm_freq=800

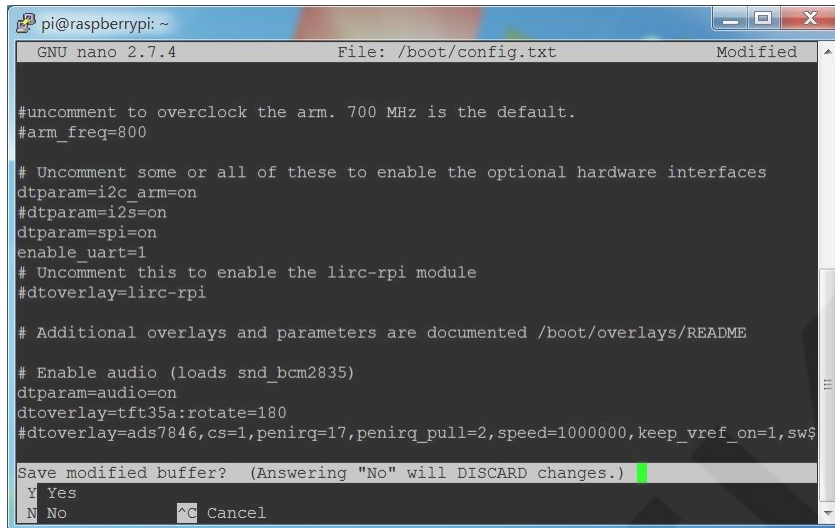
# Uncomment some or all of these to enable the optional hardware interfaces
dtparam=i2c_arm=on
#dtparam=i2s=on
dtparam=spi=on
enable_uart=1
# Uncomment this to enable the lirc-rpi module
#dtoverlay=lirc-rpi

# Additional overlays and parameters are documented /boot/overlays/README

# Enable audio (loads snd_bcm2835)
dtparam=audio=on
dtoverlay=tft35a:rotate=180
#dtoverlay=ads7846,cs=1,penirq=17,penirq_pull=2,speed=1000000,keep_vref_on=1,sw$

^G Get Help ^C Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell ^_ Go To Line
```

按 **Y**，确认保存；



```
pi@raspberrypi: ~
GNU nano 2.7.4 File: /boot/config.txt Modified
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#arm_freq=800

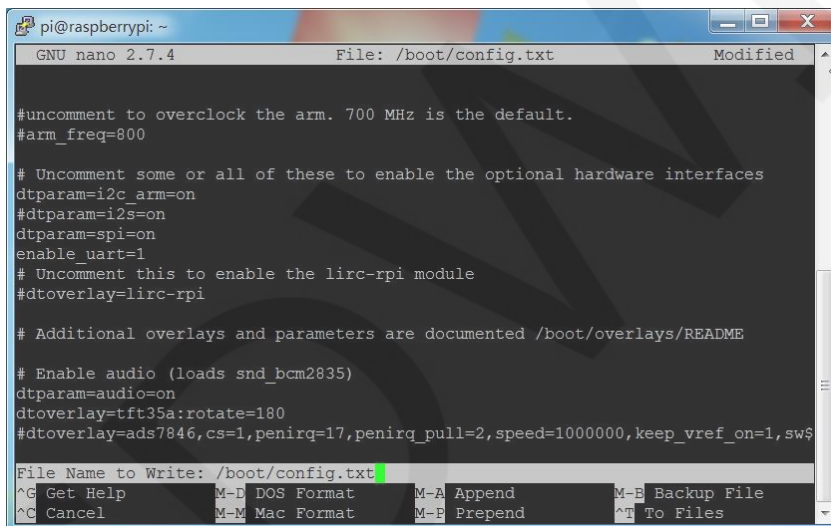
# Uncomment some or all of these to enable the optional hardware interfaces
dtparam=i2c_arm=on
#dtparam=i2s=on
dtparam=spi=on
enable_uart=1
# Uncomment this to enable the lirc-rpi module
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# Additional overlays and parameters are documented /boot/overlays/README

# Enable audio (loads snd_bcm2835)
dtparam=audio=on
dtoverlay=tft35a:rotate=180
#dtoverlay=ads7846,cs=1,penirq=17,penirq_pull=2,speed=1000000,keep_vref_on=1,sw$

Save modified buffer? (Answering "No" will DISCARD changes.)
Y Yes
N No ^C Cancel
```

按 **Enter**，确认保存文件名；



```
pi@raspberrypi: ~
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dtparam=i2c_arm=on
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# Enable audio (loads snd_bcm2835)
dtparam=audio=on
dtoverlay=tft35a:rotate=180
#dtoverlay=ads7846,cs=1,penirq=17,penirq_pull=2,speed=1000000,keep_vref_on=1,sw$

File Name to Write: /boot/config.txt
^G Get Help M-D DOS Format M-A Append M-B Backup File
^C Cancel M-M Mac Format M-P Prepend ^T To Files
```

重启树莓派即可生效

```
sudo reboot
```

## 二、修改电阻触摸参数

当显示方向改变后还需要通过修改 `99-calibration.conf` 文件, 对触摸进行设置, 在树莓派中执行命令:

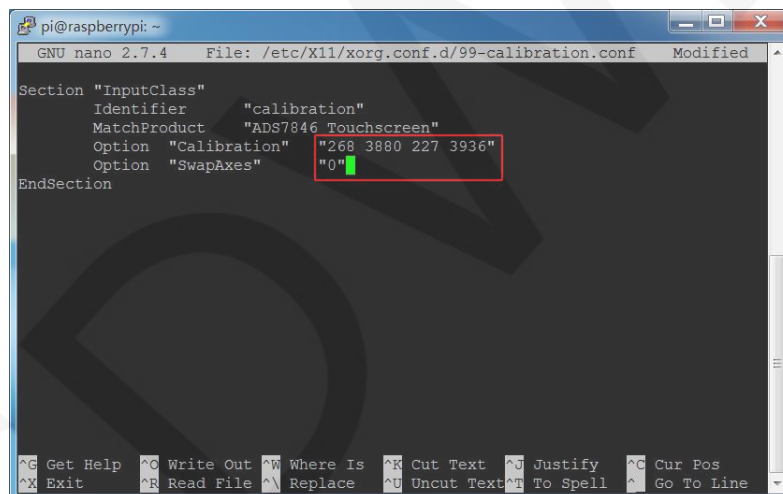
```
sudo nano /etc/X11/xorg.conf.d/99-calibration.conf
```

以 3.5inch RPi Display (MPI3501) 为例:

如需旋转 0 度显示, 即 `dtoverlay=tft35a:rotate=0`, 对应触摸参数修改为:

```
Section "InputClass"
    Identifier      "calibration"
    MatchProduct   "ADS7846 Touchscreen"
    Option "Calibration"    "268 3880 227 3936"
    Option "SwapAxes"      "0"
EndSection
```

如图所示:



保存之后, 重启树莓派即可生效

```
sudo reboot
```

(下图是旋转角度与电阻触摸参数之间的关系)

旋转角度与电阻触摸参数的关系 (GPIO-电阻触摸)		
角度 \ 种类	2.4, 2.8, 3.2 寸	3.5 寸 (MPI3501)
rotate=0	"155 3865 115 3700" "0"	"268 3880 227 3936" "0"
rotate=90	"3700 115 155 3865" "1"	"3936 227 268 3880" "1" (默认方向)
rotate=180	"3865 155 3700 115" "0"	"3880 268 3936 227" "0"
rotate=270	"115 3700 3865 155" "1" (默认方向)	"227 3936 3880 268" "1"