

## How to Modify the Display Direction

### 1、GPIO port type LCD Rotation Methods:

Apply to GPIO port LCD(2.4 inch,2.8 inch,3.2 inch,3.5 inch).

Execute command at terminal :

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

If using 2.4 inch/2.8 inch/3.2 inch LCD, please find "dtoverlay=tft9341", then add rotate parameter, and do as follows:

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

If using 3.5 inch LCD, please find "dtoverlay=tft35a" then add rotate parameter, and do as follows:

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

We take 3.5inch LCD for example:

For rotation of 0 degree(vertical screen), the corresponding value is:

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

For rotation of 90 degree(horizontal screen), the corresponding value is:

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

For rotation of 180 degree(vertical screen), the corresponding value is:

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

For rotation of 270 degree(horizontal screen), the corresponding value is:

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

Press Ctrl + X, select Y, save and exit.

## 2、HDMI port type LCD Rotation Methods:

This method just applies to the HDMI interface type LCD( such as 3.97inch, 4.3inch,5 inch,7 inch model B,7 inch model C,10.1 inch)

Execute command at terminal:

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

Find "display\_rotate" , if there is not, please add it in

There are the meaning of parameter "display\_rotate"

display_rotate	result
0	no rotation
1	rotate 90 degrees clockwise
2	rotate 180 degrees clockwise
3	rotate 270 degrees clockwise
0x10000	horizontal flip
0x20000	vertical flip

For rotation of 0 degree, the corresponding value is:

```
display_rotate=0
```

For rotation of 90degrees, the corresponding value is:

```
display_rotate=1
```

For rotation of 180 degrees, the corresponding value is:

```
display_rotate=2
```

For rotation of 270 degrees, the corresponding value is:

```
display_rotate=3
```

For horizontal flip display, the corresponding value is:

```
display_rotate=0x10000
```

For vertical flip display,the corresponding value is:

```
display_rotate=0x20000
```

Press Ctrl + X, select Y, save and exit.

**As picture:**

```
pi@raspberrypi:~$ nano /boot/config.txt
GNU nano 2.2.6 File: /boot/config.txt Modified

# 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:rotate=270
dtoverlay=ads7846,cs=1,penirq=17,penirq_pull=2,speed=1000000,keep_vref_on=1,swapxy=1,pmax=255,xohms=60,xs
```

### 3、Modify touch parameters

When the display direction changes, we also need to modify “99-calibration.conf” file to set the touch. And then execute command

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

Take 5 inch HDMI LCD for example:

The default parameter is 0 degree, that is, display\_rotate=0, the corresponding touch calibration parameters are:

```
Section "InputClass"
    Identifier          "calibration"
    MatchProduct        "ADS7846 Touchscreen"
    Option "Calibration"      "140 3951 261 3998 "
    Option "SwapAxes"        "0"
EndSection
```

For rotating 90 degrees to display, that is, display\_rotate=1, the corresponding touch parameters are modified as:

```
Section "InputClass"
    Identifier          "calibration"
    MatchProduct        "ADS7846 Touchscreen"
    Option "Calibration"      "261 3998 3951 140"
    Option "SwapAxes"        "1"
EndSection
```

For rotating 180 degrees to display, that is, display\_rotate=2, the corresponding touch parameters are modified as:

```
Section "InputClass"
```

Identifier	"calibration"		
MatchProduct	"ADS7846 Touchscreen"		
Option	"Calibration"	"3951 140 3998 261"	
Option	"SwapAxes"	"0"	
EndSection			

For rotating 270 degrees to display, that is, display\_rotate=3, the corresponding touch parameters are modified as:

```
Section "InputClass"
    Identifier            "calibration"
    MatchProduct          "ADS7846 Touchscreen"
    Option    "Calibration"      "3998 261 140 3951"
    Option    "SwapAxes"        "1"
EndSection/
```

**When modified, restart to see the effect.**

```
sudo reboot
```