

# How to change display direction

(HDMI-Resistive touch)

## 1. How does HDMI interface LCD rotate display

(Applicable to HDMI LCD (3.5-inch (MPI3508) and 5-inch (MPI5001)), not applicable to GPIO LCD)

- 1) Execute the command on the Raspberry Pi to open the `config.txt` file:

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

- 2) Find the "`display_rotate`" parameter item or add it if there is no this item. The specific parameters are as follows:

0 degrees of rotation:

```
display_rotate=0
```

90 degrees of rotation:

```
display_rotate=1
```

180 degrees of rotation:

```
display_rotate=2
```

270 degrees of rotation:

```
display_rotate=3
```

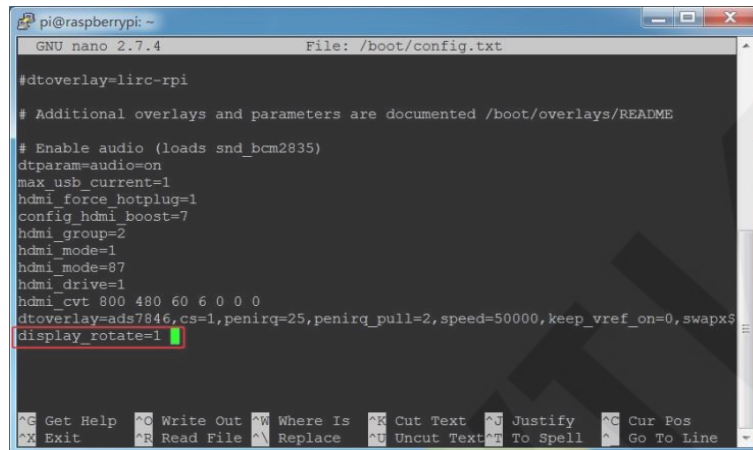
Flip horizontal display:

```
display_rotate=0x10000
```

Vertical flip display:

```
display_rotate=0x20000
```

Press **Ctrl + X**, quit



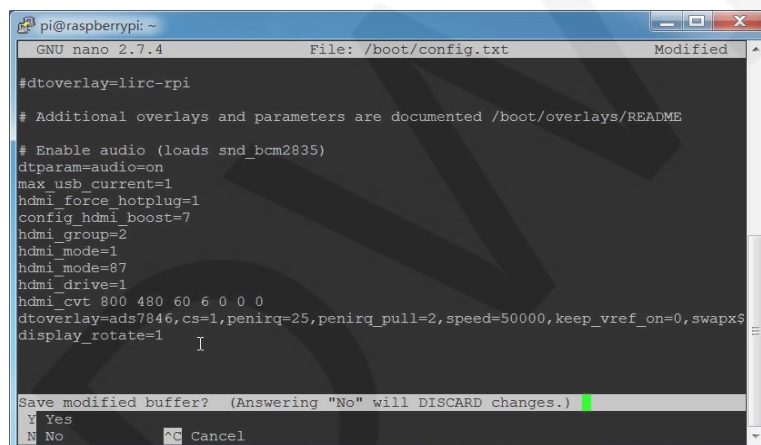
```
pi@raspberrypi: ~
GNU nano 2.7.4 File: /boot/config.txt

#dtoverlay=lirc-rpi

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

# Enable audio (loads snd_bcm2835)
dtparam=audio=on
max_usb_current=1
hdmi_force_hotplug=1
config_hdmi_boost=7
hdmi_group=2
hdmi_mode=1
hdmi_mode=87
hdmi_drive=1
hdmi_cvt 800 480 60 6 0 0 0
dtoverlay=ads7846,cs=1,penirq=25,penirq_pull=2,speed=50000,keep_vref_on=0,swapx5
display_rotate=1
```

Press **Y**, confirm to save



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

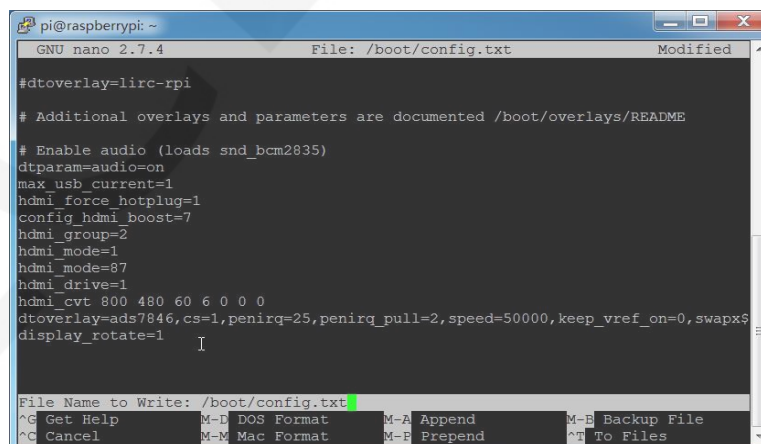
#dtoverlay=lirc-rpi

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

# Enable audio (loads snd_bcm2835)
dtparam=audio=on
max_usb_current=1
hdmi_force_hotplug=1
config_hdmi_boost=7
hdmi_group=2
hdmi_mode=1
hdmi_mode=87
hdmi_drive=1
hdmi_cvt 800 480 60 6 0 0 0
dtoverlay=ads7846,cs=1,penirq=25,penirq_pull=2,speed=50000,keep_vref_on=0,swapx5
display_rotate=1

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

Press **Enter**, Make sure to save the file name



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

#dtoverlay=lirc-rpi

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

# Enable audio (loads snd_bcm2835)
dtparam=audio=on
max_usb_current=1
hdmi_force_hotplug=1
config_hdmi_boost=7
hdmi_group=2
hdmi_mode=1
hdmi_mode=87
hdmi_drive=1
hdmi_cvt 800 480 60 6 0 0 0
dtoverlay=ads7846,cs=1,penirq=25,penirq_pull=2,speed=50000,keep_vref_on=0,swapx5
display_rotate=1

File Name to Write: /boot/config.txt
```

Restart Raspberry Pi

```
sudo reboot
```

## 2. Modify resistance touch parameters

When the display direction changes, the touch needs to be set by modifying the [99-calibration.conf](#) file.

1) Execute the command in the Raspberry Pi:

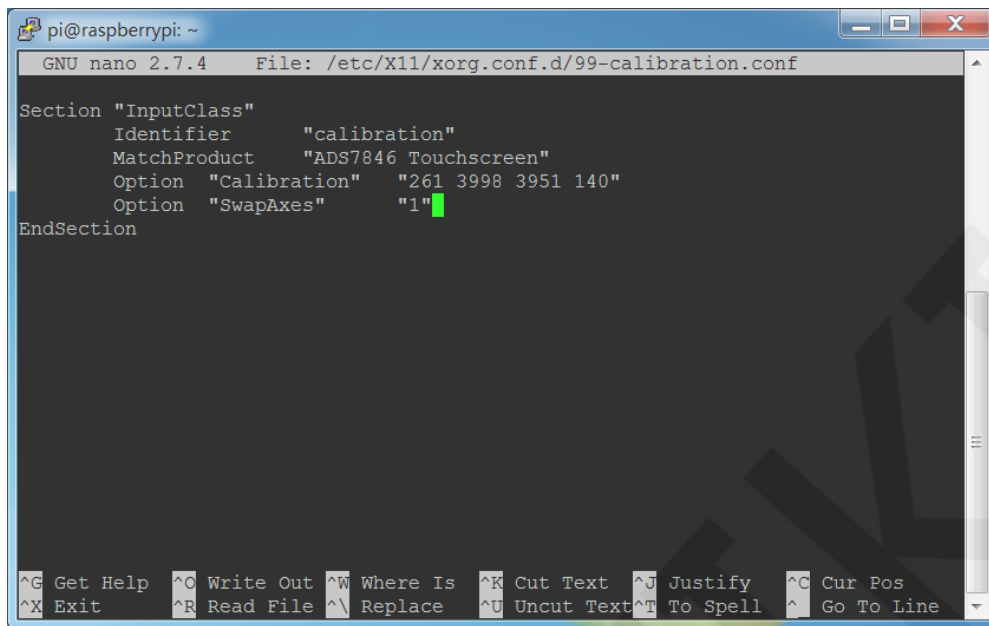
```
sudo nano /etc/X11/xorg.conf.d/99-calibration.conf
```

Take [5inch HDMI Display \(MPI5008\)](#) as an example:

90 degrees of rotation, (`display_rotate=1`), the corresponding touch parameter is modified to:

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

As following picture shows:



```

pi@raspberrypi: ~
GNU nano 2.7.4 File: /etc/X11/xorg.conf.d/99-calibration.conf
Section "InputClass"
  Identifier      "calibration"
  MatchProduct   "ADS7846 Touchscreen"
  Option "Calibration" "261 3998 3951 140"
  Option "SwapAxes" "1"
EndSection
^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

```

2) After saving, restart the Raspberry Pi.

```
sudo reboot
```

(The following figure shows the relationship between rotation Angle and resistance touch parameters)

The relationship between rotation Angle and resistance touch parameters

Angle \ Type	3.5-inch (MPI3508)	5-inch (MPI5008)
<b>display_rotate=0</b>	"3945 233 3939 183" "1" (Default Orientation)	"140 3951 261 3998" "0" (Default Orientation)
<b>display_rotate=1</b>	"3939 183 233 3945" "0"	"261 3998 3951 140" "1"
<b>display_rotate=2</b>	"233 3945 183 3939" "1"	"3951 140 3998 261" "0"
<b>display_rotate=3</b>	"183 3939 3945 233" "0"	"3998 261 140 3951" "1"