

# How to change display direction

(HDMI-Capacitive touch)

## 1. How does HDMI interface LCD rotate display

(Applicable to HDMI LCD ( 5-inch (MPI5001) , 7-inch B and 7-inch C), 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:

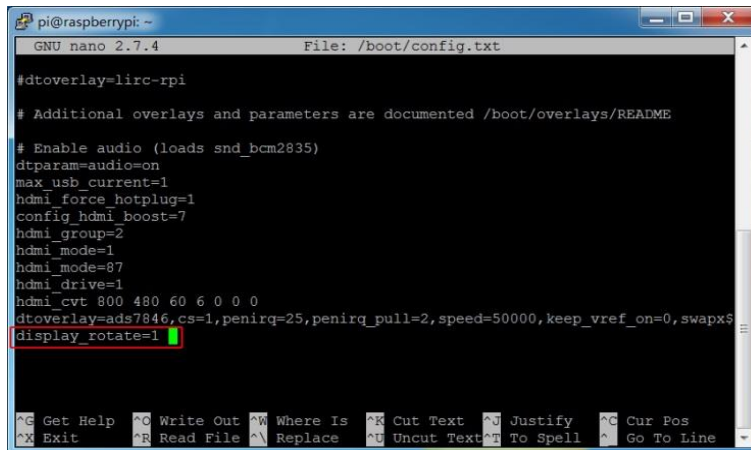
```
display_rotate=0x10000
```

Vertical flip display:

```
display_rotate=0x20000
```

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Press **Ctrl + X**, quit



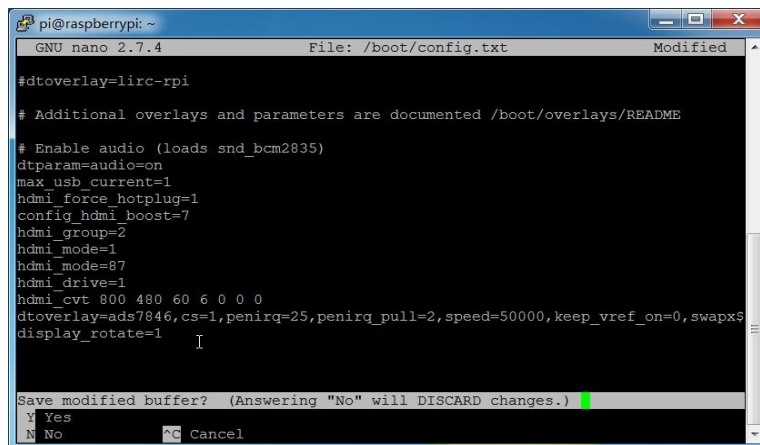
```
pi@raspberrypi: ~
GNU nano 2.7.4 File: /boot/config.txt

#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,swapx$
display_rotate=1
```

Press **Y**, confirm to save



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

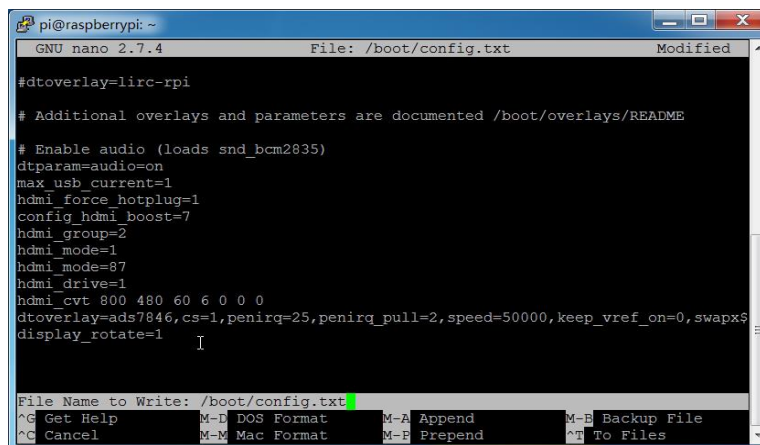
#dtoverlay=lirc-rpi

# 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,swapx$
display_rotate=1

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

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,swapx$
display_rotate=1

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 M-T To Files
```

Restart Raspberry Pi

```
sudo reboot
```

## 2. How to rotate Touch direction:

After the display is rotated, the touch needs to be modified.

1) Install libinput

```
sudo apt-get install xserver-xorg-input-libinput
```

2) Create the "**xorg.conf.d**" directory in /etc/x11 / below (if the directory already exists, this will proceed directly to step 3)

```
sudo mkdir/etc/X11/xorg.conf.d
```

3) Copy the file "**40-libinput.conf**" to the directory you just created.

```
sudo cp /usr/share/X11/xorg.conf.d/40-libinput.conf  
/etc/X11/xorg.conf.d/
```

4) Edit "**/etc/X11/xorg.conf.d/40-libinput.conf**"

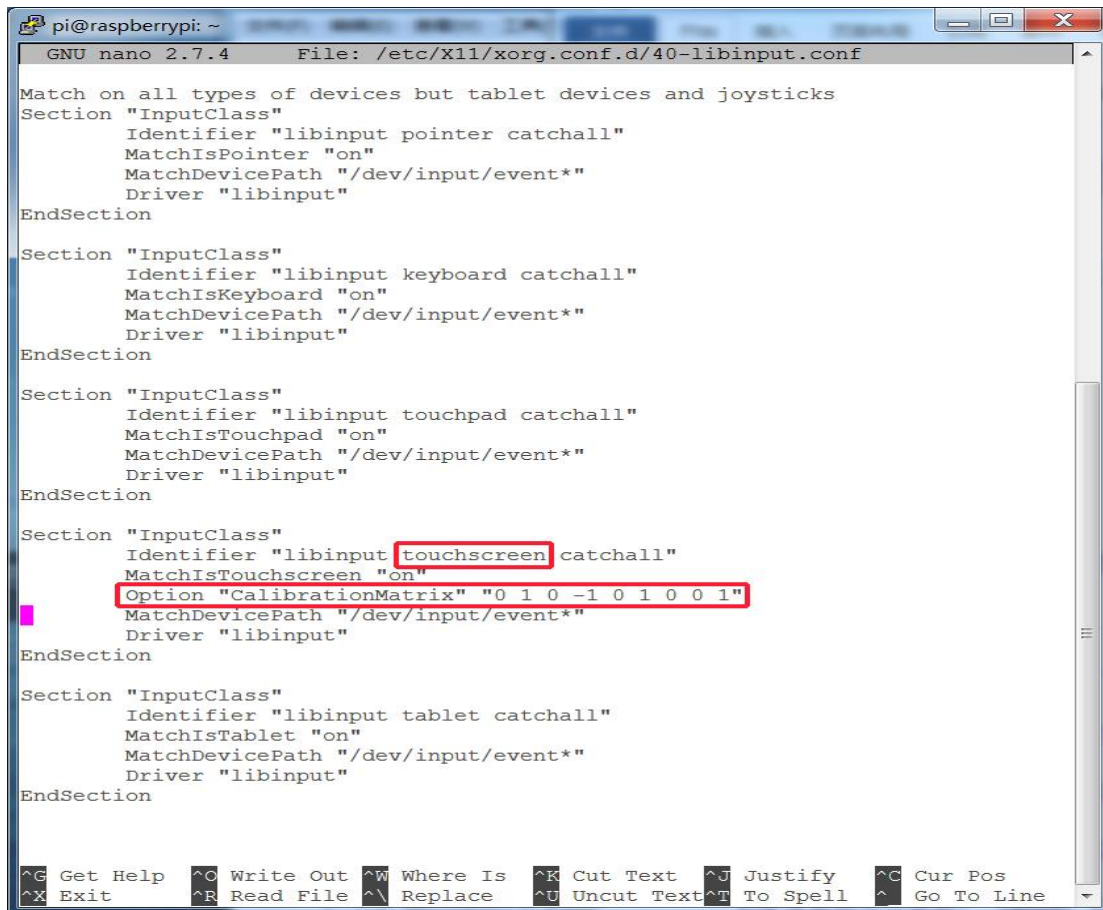
```
sudo nano /etc/X11/xorg.conf.d/40-libinput.conf
```

Find a part of the `touchscreen`, add the following statement inside (90 degrees of rotation parameters). Press **Ctrl+X** to exit, press **Y** to save, **Press Enter** to

Make sure to save the file name

```
Option "CalibrationMatrix" "0 1 0 -1 0 1 0 0 1"
```

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```
pi@raspberrypi: ~
GNU nano 2.7.4 File: /etc/X11/xorg.conf.d/40-libinput.conf
Match on all types of devices but tablet devices and joysticks
Section "InputClass"
    Identifier "libinput pointer catchall"
    MatchIsPointer "on"
    MatchDevicePath "/dev/input/event*"
    Driver "libinput"
EndSection

Section "InputClass"
    Identifier "libinput keyboard catchall"
    MatchIsKeyboard "on"
    MatchDevicePath "/dev/input/event*"
    Driver "libinput"
EndSection

Section "InputClass"
    Identifier "libinput touchpad catchall"
    MatchIsTouchpad "on"
    MatchDevicePath "/dev/input/event*"
    Driver "libinput"
EndSection

Section "InputClass"
    Identifier "libinput touchscreen catchall"
    MatchIsTouchscreen "on"
    Option "CalibrationMatrix" "0 1 0 -1 0 1 0 0 1"
    MatchDevicePath "/dev/input/event*"
    Driver "libinput"
EndSection

Section "InputClass"
    Identifier "libinput tablet catchall"
    MatchIsTablet "on"
    MatchDevicePath "/dev/input/event*"
    Driver "libinput"
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
```

### 5) Restart your Raspberry Pi

```
sudo reboot
```

Complete the above steps for a [90](#) degree rotation.

#### **Note:**

[0](#) degrees of rotation parameters:

```
Option "CalibrationMatrix" "1 0 0 0 1 0 0 0 1"
```

[90](#) degrees of rotation parameters:

```
Option "CalibrationMatrix" "0 1 0 0 -1 1 0 0 1"
```

[180](#) degrees of rotation parameters:

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```
Option "CalibrationMatrix" "-1 0 1 0 -1 1 0 0 1"
```

270 degrees of rotation parameters:

```
Option "CalibrationMatrix" "0-1 1 1 0 0 0 0 0 1"
```