

# How to activate the 3.2inch LCD shield with your ODROID-XU4

- To use the SPI, you first need to update the kernel version to **“3.10.83” or higher**.

target



```
sudo apt update && sudo apt dist-upgrade
```

- **“ads7846”** module driver must be in the output of “lsmod” command.
- You need a **HDMI connection or a Serial console connection** to follow below instruction.
- Operation confirmed with testing in our [Ubuntu 16.04 LTS \(v2.0\)](#)

## How to enable driver (Only Ubuntu 16.04 or higher is required)

Edit /etc/modprobe.d/blacklist-odroid.conf to comment out following three lines.

```
blacklist spidev  
blacklist spi_s3c64xx  
blacklist ads7846
```

Reboot.

target

```
reboot
```

Check your SPI node.

target

```
ls /dev/spidev*
```

## Configuring framebuffer

### 0. Update your Kernel

target

```
sudo apt update && sudo apt dist-upgrade
```

## 1. Insert modules

target

```
sudo modprobe fbftf_device name=odroid32 rotate=90 busnum=1  
gpios=reset:21,dc:22 speed=32000000 cs=0
```

You will have a new frame buffer /dev/fbX.



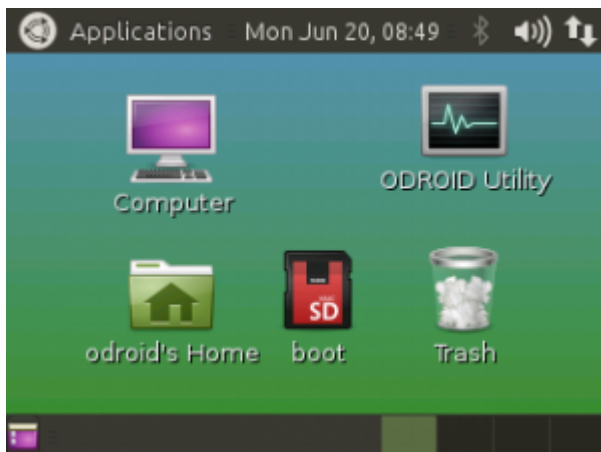
You should check the value of **X** and replace X to a **checked number**.

Find a ili9340 framebuffer node

target

```
ls /dev/fb*  
/dev/fbX  
cat /sys/class/graphics/fbX/name  
fb_ili9340
```

## Run Xwindow



## 0. Insert modules

target

```
sudo modprobe fbtft_device name=odroid32 rotate=90 busnum=1
gpios=reset:21,dc:22 speed=32000000 cs=0
```

## 1. Create a new config file

target

```
sudo mv /etc/X11/xorg.conf /etc/X11/xorg.conf.old
sudo rm -f /etc/X11/xorg.conf.d/exynos.conf
sudo vi /etc/X11/xorg.conf
```

Add following lines in “/etc/X11/xorg.conf” file.

```
Section "Device"
    Identifier      "fbdev"
    Driver          "fbdev"
    Option         "fbdev" "/dev/fbX"
EndSection
```

## 2. Run

target

```
/etc/init.d/lightdm start
```

# Run Console

## 0. Insert modules

target

```
sudo modprobe fbtft_device name=odroid32 rotate=90 busnum=1
gpios=reset:21,dc:22 speed=32000000 cs=0
```

## 1. Run con2fbmap

con2fbmap <console> <framebuffer>

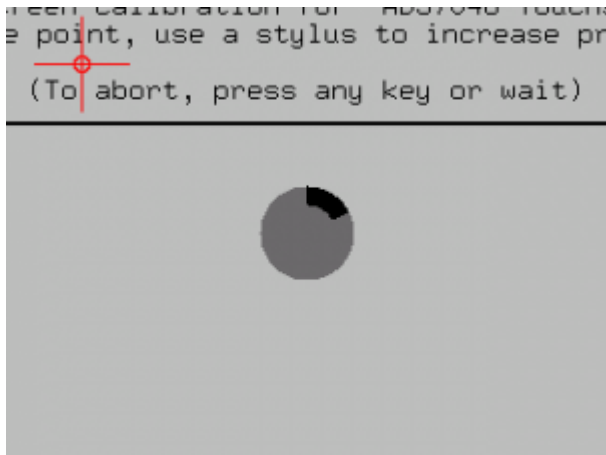
target

```
sudo apt-get install fbset
```

```
sudo con2fbmap 2 0
```

Press Keyboard Ctrl + Alt + F2 to change the console screen of FB1  
There will be a login screen on the LCD screen.

## Touch Calibration



- To use the Touch Calibration, you first need to update the kernel version to **“3.10.96-86” or higher.**



target

```
sudo apt update && sudo apt dist-upgrade
```

### 0. The xinput-calibrator package download

target

```
sudo apt-get install xinput-calibrator
```

### 1. Remove old calibration data.

target

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

### 2. Login

You need a login to get DISPLAY.

If you want auto login.

Edit /etc/lightdm/lightdm.conf file to enable auto-login: (password: odroid)

target

```
odroid@odroid:~$ sudo vi /etc/lightdm/lightdm.conf
[sudo] password for odroid:
odroid@odroid:~$ cat /etc/lightdm/lightdm.conf
[SeatDefaults]
autologin-user=odroid
autologin-user-timeout=0
odroid@odroid:~$
```

### 3. Check your DISPLAY

target

```
odroid@odroid:~$ w
09:13:31 up 35 min,  2 users,  load average: 0.09, 0.08, 0.12
USER      TTY      FROM          LOGIN@   IDLE   JCPU   PCPU WHAT
odroid    ttySAC2                08:42    2.00s  0.75s  0.02s w
odroid    :0       :0            05:39    ?xdm?  1:15   0.63s mate-
session
odroid@odroid:~$
```

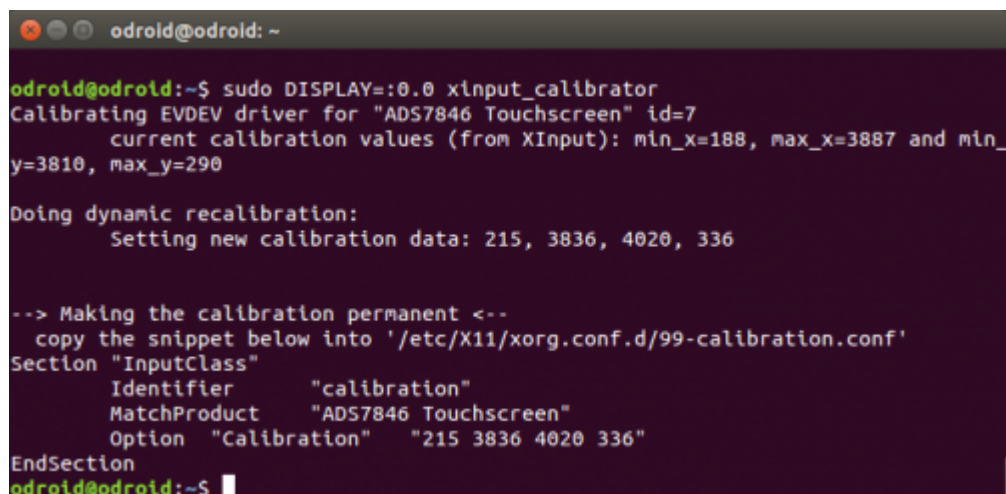
### 4. Run calibrator

target

```
sudo DISPLAY=:0 xinput_calibrator
```

Follow the directions on your screen.

then, you will get something like



```
odroid@odroid: ~
odroid@odroid:~$ sudo DISPLAY=:0.0 xinput_calibrator
Calibrating EVDEV driver for "ADS7846 Touchscreen" id=7
  current calibration values (from XInput): min_x=188, max_x=3887 and min_
y=3810, max_y=290

Doing dynamic recalibration:
  Setting new calibration data: 215, 3836, 4020, 336

--> Making the calibration permanent <--
  copy the snippet below into '/etc/X11/xorg.conf.d/99-calibration.conf'
Section "InputClass"
  Identifier      "calibration"
  MatchProduct   "ADS7846 Touchscreen"
  Option         "Calibration" "215 3836 4020 336"
EndSection
odroid@odroid:~$
```

Copy to “/etc/X11/xorg.conf.d/99-calibration.conf”

target

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

## 5. Reboot

target

```
sudo reboot
```

# Advanced Usages

- [Automatically start console mode](#)
- [Automatically start desktop GUI mode](#)

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