

How to Activate 3.2 Inch LCD Shield for ODROID-N2

- Operation confirmed with our **ODROID-N2** on ubuntu-18.04.2-4.9-minimal-odroid-n2-20190217.img.xz
- This guide is based on **Minimal image** for now.

System Update

It is recommended to update/upgrade your system using **apt**.

```
root@odroid:~# apt update
root@odroid:~# apt full-upgrade -y
```

Configure Device Tree Source

Enable SPI Driver

SPI feature would be disabled by default.

You have to enable that feature using **device-tree-compiler** utility.

Please refer to this guide: https://wiki.odroid.com/odroid-n2/application_note/gpio/spi#n2

Enable ADS7846 Touch Driver

To use its touch screen, you have to enable that feature in Device Tree Source.

Assume that you've installed **device-tree-compiler**. Enter the following commands.

```
root@odroid:~# fdtput -t s /media/boot/meson64_odroidn2.dtb
/soc/cbus@ffd00000/spi@13000/ads7846@1 status okay
```

Then reboot to apply changes.

```
root@odroid:~# reboot
```

Configure Framebuffer

Insert a Module

You should load a module designed for our LCD shield.

```
root@odroid:~# modprobe fbtft_device name=odroid32 rotate=90
```

Then you will have a new framebuffer device **/dev/fbX**.

```
root@odroid:~# ls /dev/fb*
/dev/fb0 /dev/fb1 /dev/fb2 /dev/fb3 /dev/fb4
```

Find the framebuffer has name **fb_ili9340**. Commonly **/dev/fb4** should be that.

```
root@odroid:~# cat /sys/class/graphics/fb4/name
fb_ili9340
```

The character **X** depends on your system environment. Replace **X** to yours.

Install fbset Utility

To map between a console and a screen easily, installing **fbset** is recommended.

```
root@odroid:~# apt install fbset
```

We will use **con2fbmap** utility that is coming with.

```
root@odroid:~# con2fbmap
Usage: con2fbmap console [framebuffer]
```

Run Console

Let's map **the console number 1** to **the frame buffer 4** screen.

To do that, enter the following command.

```
root@odroid:~# con2fbmap 1 4
```

Then, press **Ctrl + Alt + F1** on your keyboard to change the current console to 1. Or, you can just enter the following command.

```
root@odroid:~# chvt 1
```

Then you can see the console on your LCD shield.

Run X-Window

Map **the console number 7**, which is for X-Window though the Linux world, to **the frame buffer 4**, which is the LCD shield we've enabled.

To do that, enter the following command.

```
root@odroid:~# con2fbmap 7 4
```

Then, press **Ctrl + Alt + F7** on your keyboard to change the current console to 7. Or, you can just enter the following command.

```
root@odroid:~# chvt 7
```

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