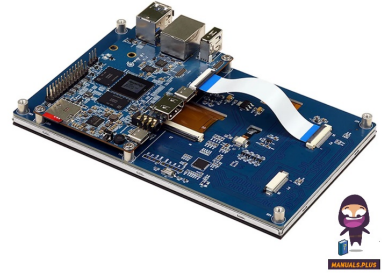




DSI050 DSI Display



Surennoo DSI050 DSI Display Instructions

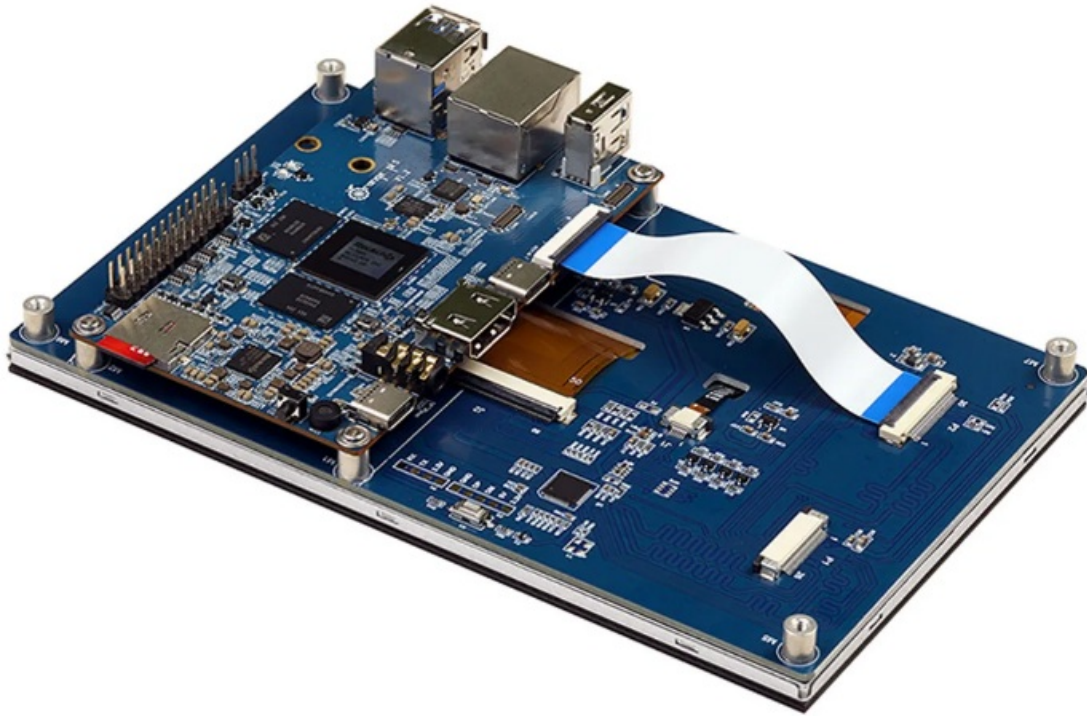
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Surennoo DSI050 DSI Display



Product Information

Specifications:

- **Display Sizes Available:** DSI050, DSI055, DSI070, DSI080
- **Orange Pi Board Versions:** OPI-5, OPI-5B, OPI-5Plus, OPI-5Pro
- **Operating Systems Supported:** Linux OS, Android OS

Product Usage Instructions

Precautions:

1. Before connecting the DSI display to the OPI Board, ensure the power is off. Disconnect OPI Board power before plugging or unplugging the FFC ribbon cable to avoid damage.
2. The official Orange Pi OS cannot be directly used for DSI Display; kernel drivers need to be updated.

Images Download:

Contact info@surenoo.com with the following information to receive the download link:

1. Display Size: DSI050 / DSI055 / DSI070 / DSI080
2. Orange Pi Board Version: OPI-5 / OPI-5B / OPI-5Plus / OPI-5Pro
3. Operating System: Linux OS / Android OS

Ubuntu System Instructions:

Based on the system image version, download the corresponding Linux deb package and install it on the development board.

Open MIPI DSI Output:

To open MIPI DSI output:

- For Orange Pi 5 and 5B, edit vim/boot/orangepiEnv.txt and add overlays=lcd1 for the MIPI LCD1 interface or overlays=lcd2 for MIPI LCD2 interface.
- For Orange Pi 5Plus, edit vim/boot/orangepiEnv.txt and add overlays=opi5plus lcd.

Adjust Backlight:

For DSI 7.0 Display only, adjust the backlight as needed.

Version	Date	Contents	Mark
1.0	2024-03-05	Initial release	
1.1	2024-03-14	Add instructions for 5.5 inch DSI Display	
1.2	2024-03-24	Add Instructions for Support Linux6.1 Core	
1.3	2024-06-08	Add Instructions for Support Orange pi 5Pro Board	

Precautions

1. Before connecting DSI display to OPI Board, be sure not to operate with power on. Ensure that OPI Board power is disconnected before plugging and unplugging the FFC ribbon cable. (Otherwise, it may burn the OPI Board or Display).
2. Before connecting the ribbon cables, please ensure that the direction of the ribbon cables is correct. For flip over type bottom contact connectors, the ribbon cables are made of metal Face down connection; For drawer type up contact connectors, connect the ribbon cable with the metal side facing upwards.
 - DS_5.0 5.57.0 come with bottom contact connectors;
 - DS_8.0 Display come with top contact connectors.
 - Pay attention to controlling the force during operation, to avoid damaging the connector.
3. The official Orange Pi OS cannot be used directly for DSI Display, and kernel drivers need to be updated.

Images Download Link

Due to the IMAGE file is very big, we can send you via NetDisk link. It can be saved within 21 days only, please download it as soon as possible once you get the download link.

Please supply the following information or your Order No., and then we'll share you the matched files:

1. **Display Size:** DSI050 / DSI055 / DSI070 / DSI080
2. **Orange Pi Board Version:** OPI-5 / OPI-5B / OPI-SPlus / OPI-5Pro
3. **OS:** Linux OS / Android OS

E-mail: info@surenoo.com

Purchase Link

1. [5.0" 720*1280 MIPI DSI Display with CTP for Orange Pi 5/5B/5Plus/5Pro](#)
2. [5.5" 1080*1920 MIPI DSI Display with CTP for Orange Pi 5/5B/5Plus/5Pro](#)
3. [7.0" 1024*600 MIPI DSI Display with CTP for Orange Pi 5/5B/5Plus/5Pro](#)
4. [8.0" 800*1280 MIPI DSI Display with CTP for Orange Pi 5/5B/5Plus/5Pro](#)

Ubuntu System Instructions

For Ubuntu systems, there are 3 methods to update LCD drivers, and the method A is recommended.

1. Update the kernel and kernel modules of the Linux system on the development board.

If you have installed the official system image, we recommend using this method to update the kernel driver!

1. Install the official Ubuntu image or Debian image.
2. Download the kernel deb package(xxx. deb) from Surenoo Download link you request.
3. **Note:** Our company has two versions of the kernel deb package in current, Linux5.10 and Linux6.1.
 - If you have installed the system image of V5.10, please download the Linux V5.10 deb;
 - If you have installed the system image of V6.1, please download the Linux V6.1 deb.
4. Upload the compiled Linux kernel deb package to the Linux system of the development board.

5.0" – 720*1280 Portrait Display / 5.5"-1080*1920 Portrait Display / 7.0"-1024*600 Landscape Display / 8.0"-800*1280 Portrait Display

Orange pi 5:
linux5.10 Core: adb push linux-image-legacy-rockchip-rk3588_1.1.8_arm64.deb /root linux6.1 Core: adb push linux-image-current-rockchip-rk3588_1.1.8_arm64.deb /root
Orange pi 5B:
linux5.10 Core: adb push linux-image-legacy-rockchip-rk3588_1.0.8_arm64.deb /root linux6.1 Core: adb push linux-image-current-rockchip-rk3588_1.0.8_arm64.deb /root
Orange pi 5Plus:
linux5.10 Core: adb push linux-image-legacy-rockchip-rk3588_1.0.8_arm64.deb /root linux6.1 Core: adb push linux-image-current-rockchip-rk3588_1.0.8_arm64.deb /root
Orange pi 5Pro:
linux5.10 Core: adb push linux-image-legacy-rockchip-rk3588_1.0.2_arm64.deb /root linux6.1 Core: adb push linux-image-current-rockchip-rk3588_1.0.2_arm64.deb /root

A4 Log in to the development board and uninstall the installed Linux kernel deb package.

linux5.10 Core: apt purge -y linux-image-legacy-rockchip-rk3588 linux6.1 Core: apt purge -y linux-image-current-rockchip-rk3588

A5 Install the newly uploaded Linux kernel deb package again

5.0"- 720*1280 Portrait Display / 5.5"-1080*1920 Portrait Display / 7.0"-1024*600 Landscape Display / 8.0"-800*1280 Portrait Display

Orange pi 5:
linux5.10 Core: <code>dpkg -i linux-image-legacy-rockchip-rk3588_1.1.8_arm64.deb</code>
linux6.1 Core: <code>dpkg -i linux-image-current-rockchip-rk3588_1.1.8_arm64.deb</code>
Orange pi 5B:
linux5.10 Core: <code>dpkg -i linux-image-legacy-rockchip-rk3588_1.0.8_arm64.deb</code>
linux6.1 Core: <code>dpkg -i linux-image-current-rockchip-rk3588_1.0.8_arm64.deb</code>
Orange pi 5Plus:
linux5.10 Core: <code>dpkg -i linux-image-legacy-rockchip-rk3588_1.0.8_arm64.deb</code>
linux6.1 Core: <code>dpkg -i linux-image-current-rockchip-rk3588_1.0.8_arm64.deb</code>
Orange pi 5Pro:
linux5.10 Core: <code>dpkg -i linux-image-legacy-rockchip-rk3588_1.0.2_arm64.deb</code>
linux6.1 Core: <code>dpkg -i linux-image-current-rockchip-rk3588_1.0.2_arm64.deb</code>

A6 Open MIPI DSI output

The default configuration for Linux images is not to open the MIPI Display, which needs to be manually opened. For Orange Pi 5 and 5B have two MIPI Display interfaces.

Open DSI output method for Orange Pi 5:

- Use MIPI LCD1 interface: `vim/boot/orangepiEnv.txt`, then add `overlays=lcd 1`.
- Use MIPI LCD2 interface: `vim/boot/orangepiEnv.txt`, then add `overlays=|cd2`.



Open DSI output method for Orange Pi 5B:

- Use MIPI LCD1 interface: `vim/boot/orangepiEnv.txt`, then add `overlays=lcd1`.
- Use MIPI LCD2 interface: `vim/boot/orangepiEnv.txt`, then add `overlays=|cd2`.



Open DSI output method for Orange Pi 5plus:

Vim/boot/orangepiEnv.txt, then add overlays=opi5plus lcd.

A7 Adjust Backlight (For DSI 7.0" Display only)

```
Log in to the development board and switch to the root user: root@orangepi:~# cd /sys/class/backlight/backlight
_1 root@orangepi:~# echo 255 > brightness

root@orangepi:~# cd /sys/class/backlight/backlight

root@orangepi:~# echo 255 > brightness
```

A8 Replace the .dtb file of the development board (this operation is only applicable to DSI 5.5" Display only)
The .dtb file of the development board is located in the "/boot/dtb/Rockchip" directory

Orange pi 5:
Replace the rk3588s-orangepi-5.dtb file in the "/boot/dtb/Rockchip" directory of OPI-5 Board
Orange pi 5B:
Replace the rk3588s-orangepi-5b.dtb file in the "/boot/dtb/Rockchip" directory of OPI-5B Board
Orange pi 5Plus:
Replace the rk3588s-orangepi-5-plus.dtb file in the "/boot/dtb/Rockchip" directory of OPI-5Plus Board
Orange pi 5Pro:
Replace the rk3588s-orangepi-5-pro.dtb file in the "/boot/dtb/Rockchip" directory of OPI-5Pro Board

Reboot development board

```
root@orangepi:~# reboot
```

Install the Linux system image provided by Surenoo Technology.

If you are installing the system image provided by our company, after installing the image, you need to open DSI output only. Open DSI output method reference A6.

Compile Linux images yourself.

C1 5.0"- 720*1280 Portrait Display / 7.0"-1024*600 Landscape Display / 8.0"-800*1280 Portrait Display

Drive path:

/orangepi-build-next/kernel/orange-pi-5.10-rk3588/drivers/gpu/drm/panel/panel-innolux-afj101-ba2131.c Replace panel-innolux-afj101-ba2131.c file with the file from the request download link, then compile it, About the body compilation method refers to the official user manual of Orange Pi. C2 5.5"-1080*1920 Portrait Display

Replace the panel-innolux-afj101-ba2131. c file.

1. Orange Pi 5/5B: Replace the rk3588s-orangepi-5-lcd.dtsi file.
2. Orange Pi 5Plus: Replace the r3588-orangepi-5-plus-lod.dtsi file.

3. Orange Pi 5Pro: Replace the rk3588s-orangepi-5-pro.dtsi file.

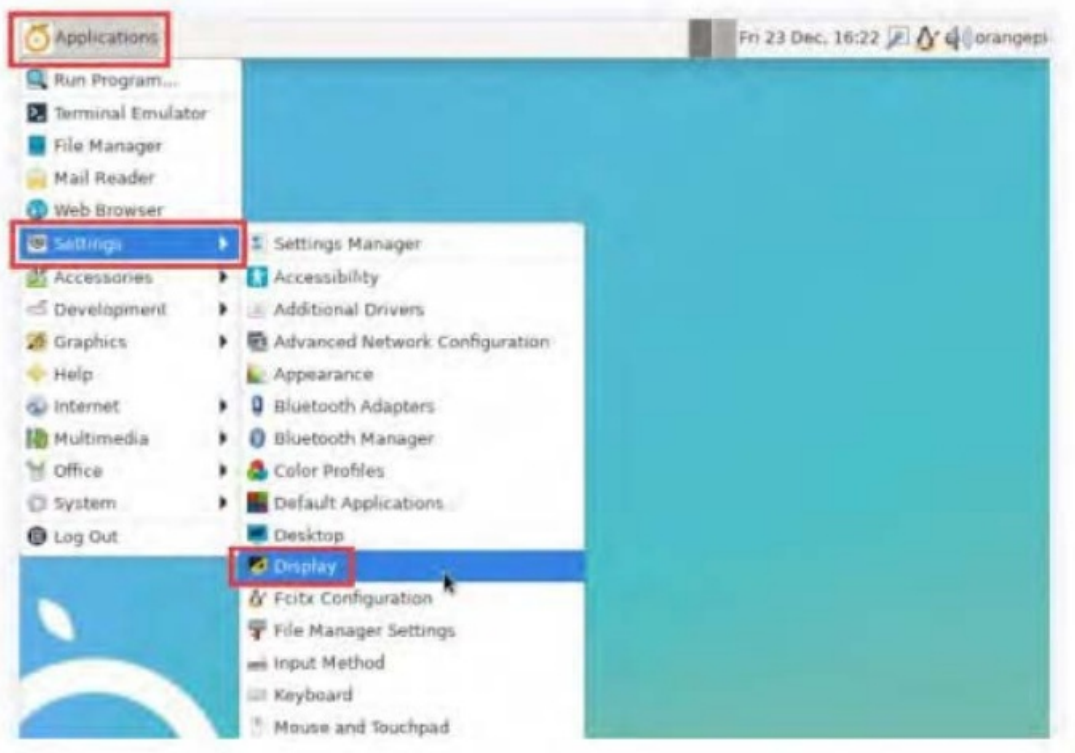
Drive path: (Replace the panel-innolux-afj 101-ba2131. file in the following directory) /orangepi-build-next/kernel/orange-pi-5.10-rk3588/drivers/gpu/drm/panel/panel-innolux-afj101-ba2131.c

Device tree path:

Orange pi 5: Replace “rk3588s-orangepi-5-lcd.dtsi” in the following directory
/orangepi-build-next/kernel/orange-pi-5.10-rk3588/arch/arm64/boot/dts/rockchip/rk3588s-orangepi-5-lcd.dtsi
Orange pi 5B: Replace “rk3588s-orangepi-5-lcd.dtsi” in the following directory
/orangepi-build-next/kernel/orange-pi-5.10-rk3588/arch/arm64/boot/dts/rockchip/rk3588s-orangepi-5-lcd.dtsi
Orange pi 5Plus: Replace “rk3588-orangepi-5-plus-lcd.dtsi” in the following directory
/orangepi-build-next/kernel/orange-pi-5.10-rk3588/arch/arm64/boot/dts/rockchip/rk3588-orangepi-5-plus-lcd.dtsi
Orange pi 5Pro: Replace “rk3588-orangepi-5-pro-lcd.dtsi” in the following directory
/orangepi-build-next/kernel/orange-pi-5.10-rk3588/arch/arm64/boot/dts/rockchip/rk3588s-orangepi-5-pro.dts

How to rotate display and touch in Linux system?

1. First, open “Display” settings in the Linux system



2. Then select the direction you want to rotate in the Rotation
 1. **None:** No rotation
 2. **Left:** Rotate 90 degrees to the left
 3. **Inverted:** Flip up and down, equivalent to rotating 180 degrees
 4. **Right:** Rotate 90 degrees to the right
3. Then click “Apply”
4. Then select “Keep this configuration”
5. At this point, the screen rotation is complete, and then close the Display program.
6. The above steps select the display direction only and do not rotate the touch direction. Use The set LCD _rate.sh script can rotate the touch direction, and after setting it, it will automatically restart You can test whether the touch has been used normally.

1. **None:** No rotation

```
orangepi@orangepi:~$ set_lcd_rotate.sh none
```

2. **Left:** Rotate 90 degrees to the left

```
orangepi@orangepi:~$ set_lcd_rotate.sh left
```

3. **Inverted:** Flip up and down, equivalent to rotating 180 degrees

```
orangepi@orangepi:~$ set_lcd_rotate.sh inverted
```

4. **Right:** Rotate 90 degrees to the right

```
orangepi@orangepi:~$ set_lcd_rotate.sh right
```

Android OS System Instructions

For Android systems, there are 2 methods to update LCD drivers.

1. Install the Android system image provided by Surenoo Technology. Our company provides 2 Android images. update.img is the TF card boot image, update_spi_nvme.img is the NVME SSD boot image.
2. Compile your own Android image. 2.1 5.0" – 720*1280 Portrait Display / 7.0"-1024*600 Landscape Display / 8.0"-800*1280 Portrait Display

Drive path:

/Android_12/kernel-5.10/drivers/gpu/drm/panel/panel-innolux-afj101-ba2131.c Replace panel-innolux-afj 101-ba2131.c file with the file from the download link, then compile it, with The body compilation method refers to the official user manual of Orange Pi.

2.2 5.5"-1080*1920 Portrait Display

Replace the panel-innolux-afj 101-ba2131. c file.

1. Orange Pi 5/5B: Replace the rk3588s-orangepi-5-lcd.dtsi file.
2. Orange Pi 5Plus: Replace the rk3588-orangepi-5-plus-lcd.dtsi file.
3. Orange Pi 5Pro: Replace the rk3588s-orangepi-5-pro.dtsi file.

Drive path: (Replace the panel-innolux-afj101-ba2131.c file in the following directory) Android_12/kernel-5.10/drivers/gpu/drm/panel/panel-innolux-afj101-ba2131.c

Device tree path:

Orange pi 5: Replace "rk3588s-orangepi-5-lcd.dtsi" in the following directory
Android_12/kernel-5.10/arch/arm64/boot/dts/rockchip/rk3588s-orangepi-5-lcd.dtsi
Orange pi 5B: Replace "rk3588s-orangepi-5-lcd.dtsi" in the following directory
Android_12/kernel-5.10/arch/arm64/boot/dts/rockchip/rk3588s-orangepi-5-lcd.dtsi
Orange pi 5Plus: Replace "rk3588-orangepi-5-plus-lcd.dtsi" in the following directory
Android_12/kernel-5.10/arch/arm64/boot/dts/rockchip/rk3588-orangepi-5-plus-lcd.dtsi
Orange pi 5Pro: Replace "rk3588-orangepi-5-pro-lcd.dtsi" in the following directory
Android_12/kernel-5.10/arch/arm64/boot/dts/rockchip/rk3588s-orangepi-5-plus-lcd.dtsi

The command to compile and support LCD display images is as follows:

Orange pi 5:

```
test@test:~$ cd Android_12
```

```
test@test:~/Android_12$ export DUAL_LCD=true test@test:~/Android_12$ source build/envsetup.sh test
@test:~/Android_12$ lunch rk3588s_s-userdebug test@test:~/Android_12$ ./build.sh -AUKu
```

The final generated image file will be placed in the directory: **rockdev/Image-rk3588s_s. update.img** is the TF card boot image,

update_spi_nvme.img is the NVME SSD boot image.

Orange pi 5B:

```
test@test:~$ cd Android_12
```

```
test@test:~/ Android_12$ export BOARD=orangepi5 test@test:~/ Android_12$ export DUAL_LCD=true test  
@test:~/ Android_12$ source build/envsetup.sh test@test:~/ Android_12$ lunch rk3588s_s-userdebug test  
@test:~/ Android_12$ ./build.sh -AUKu
```

The final generated image file will be placed in the directory: **rockdev/Image-rk3588s_s. update.img** is the TF card boot image,

update_spi_nvme.img is the NVME SSD boot image.

Orange pi 5Plus:

```
test@test:~$ cd Android_12
```

```
test@test:~/ Android_12$ export DUAL_LCD=true test@test:~/ Android_12$ source build/envsetup.sh test  
@test:~/ Android_12$ lunch rk3588_s-userdebug test@test:~/ Android_12$ ./build.sh -AUKu
```

The final generated image file will be placed in the directory: **rockdev/Image-rk3588s_s. update.img** is the TF card boot image,

update_spi_nvme.img is the NVME SSD boot image.

Orange pi 5Pro:

```
test@test:~$ cd Android_12
```

```
test@test:~/ Android_12$ ./make.sh -FMu --board orangepi5pro --nvme --gapps --lcd
```

The final generated image file will be placed in the directory: **rockdev/Image-rk3588s_s. update.img** is the TF card boot image,

update_spi_nvme.img is the NVME SSD boot image.

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FAQ

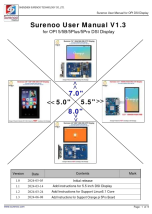
Q: Can I use the official Orange Pi OS directly with the DSI Display?

A: No, kernel drivers need to be updated for proper functionality with the DSI Display.

Q: How do I download images for my specific setup?

A: Contact info@surenoo.com with details of your Display Size, Orange Pi Board Version, and Operating System to receive the download link.

Documents / Resources



[Surenoo DSI050 DSI Display](#) [pdf] Instructions
DSI050, DSI055, DSI070, DSI080, DSI050 DSI Display, DSI050, DSI Display, Display

References

-  [aliexpress.com/item/1005006431973979.html](https://www.aliexpress.com/item/1005006431973979.html)
- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

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