



SMI Linux USB Display Driver for Ubuntu User Manual

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Revision History

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1. Overview

Linux USB Display Driver is a USB graphics driver developed by SMI. It provides complete function for the USB graphics card SM770 under the Ubuntu system. SMI Linux USB Display Driver software can drive HDMI/DP display output. It can support full-screen display and video playback, in addition to supporting different screen resolutions and refresh rates.

SMI Linux USB Display Driver provides USB device plug and play ease of use, in addition to providing three screens up to 4K high-definition multimedia playback display function, and support HDMI/DP audio output.

2. Requirements

2.1 Hardware and OS Support

Minimum Hardware Requirements:

- A SMI USB Display Adapter
- USB 3.0 or USB3.1 host port
- Ubuntu system x86 architecture host

OS Support:

- Ubuntu 20.04 or later

3. How to Use Linux USB Display Driver

This chapter introduces the functions of SMI Linux USB Display Driver and recommended steps to use the App.

There is a method to get the SMI Linux USB Display Driver.

- Download the App from: <https://www.siliconmotion.com/downloads/index.html>:

3.1 Install SMI Linux USB Display Driver

The SMI USB Display software for Ubuntu features is a simple installer that aims to perform the installation process in a single step if possible.

The installer should start with administrative privileges:

```
sudo ./SMIUSBDisplay-driver.*.*.*.run
```

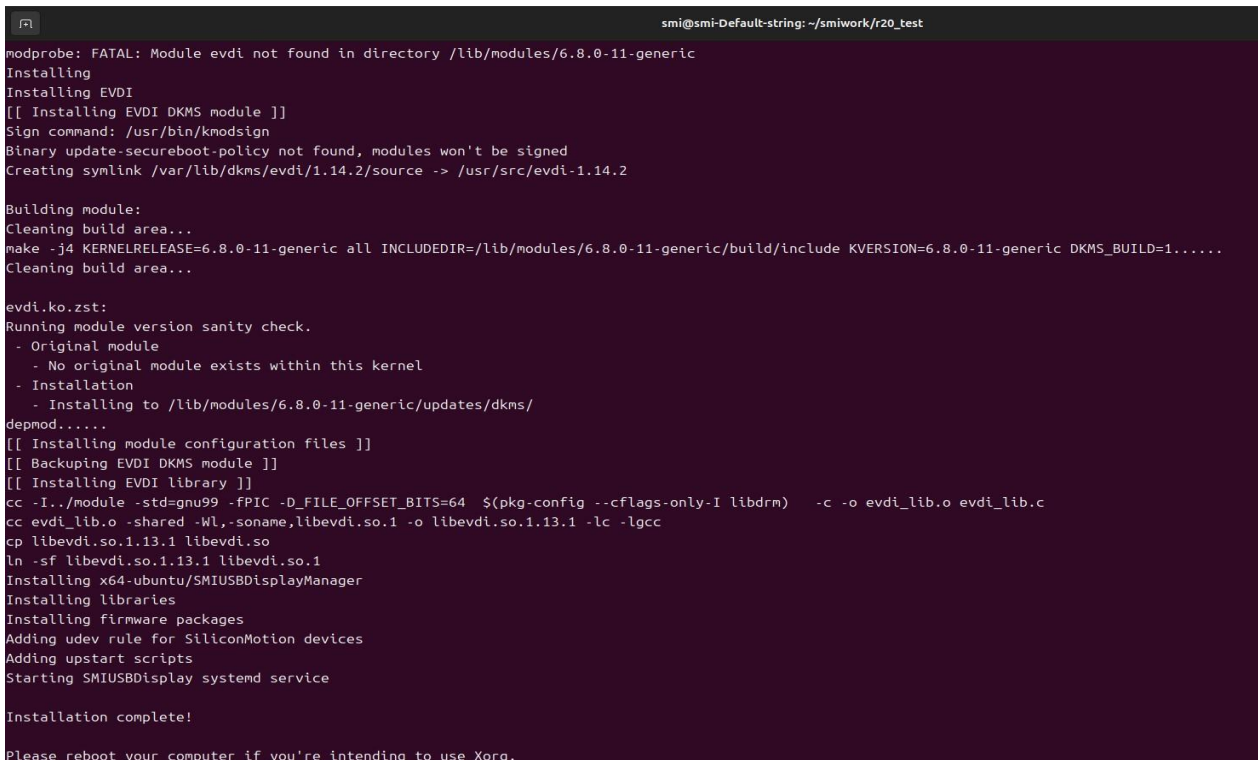
The installer is going to check for dependencies automatically, and execute apt package manager when needed. Therefore, you need to ensure that the network is connected during installation.

The messages may vary depending on the packages already installed in the system. Press ENTER to proceed. Please proceed to the subsequent step as indicated.

WARNING:

Should the permission to install the packages not be granted, the installation process stops.

The installation is complete as shown in the following figure:



```

smi@smi-Default-string: ~/smiwork/r20_test
modprobe: FATAL: Module evdi not found in directory /lib/modules/6.8.0-11-generic
Installing
Installing EVDI
[[ Installing EVDI DKMS module ]]
Sign command: /usr/bin/kmodsign
Binary update-secureboot-policy not found, modules won't be signed
Creating symlink /var/lib/dkms/evdi/1.14.2/source -> /usr/src/evdi-1.14.2

Building module:
Cleaning build area...
make -j4 KERNELRELEASE=6.8.0-11-generic all INCLUDEDIR=/lib/modules/6.8.0-11-generic/build/include KVERSION=6.8.0-11-generic DKMS_BUILD=1.....
Cleaning build area...

evdi.ko.zst:
Running module version sanity check.
- Original module
- No original module exists within this kernel
- Installation
- Installing to /lib/modules/6.8.0-11-generic/updates/dkms/
depmod.....
[[ Installing module configuration files ]]
[[ Backuping EVDI DKMS module ]]
[[ Installing EVDI library ]]
cc -I./module -std=gnu99 -fPIC -D_FILE_OFFSET_BITS=64 $(pkg-config --cflags-only-I libdrm) -c -o evdi_lib.o evdi_lib.c
cc evdi_lib.o -shared -Wl,-soname,libevdi.so.1 -o libevdi.so.1.13.1 -lc -lgcc
cp libevdi.so.1.13.1 libevdi.so
ln -sf libevdi.so.1.13.1 libevdi.so.1
Installing x64-ubuntu/SMIUSBDisplayManager
Installing libraries
Installing firmware packages
Adding udev rule for SiliconMotion devices
Adding upstart scripts
Starting SMIUSBDisplay systemd service

Installation complete!

Please reboot your computer if you're intending to use Xorg.
    
```

Figure 2.1 SMI Linux USB Display Driver is installed

3.2 Use of SMI Linux USB Display Driver

SMI Linux USB Display Driver is a software that does not need to be opened, only needs to run continuously in the background, and can easily achieve multi-screen extended display function. Whether it is an office environment or an entertainment occasion, just correctly connect the USB graphics card device to the host, without complicated settings, you can immediately enjoy the rich experience brought by multiple screens. The user can operate the monitor in “Settings -> Monitor”.

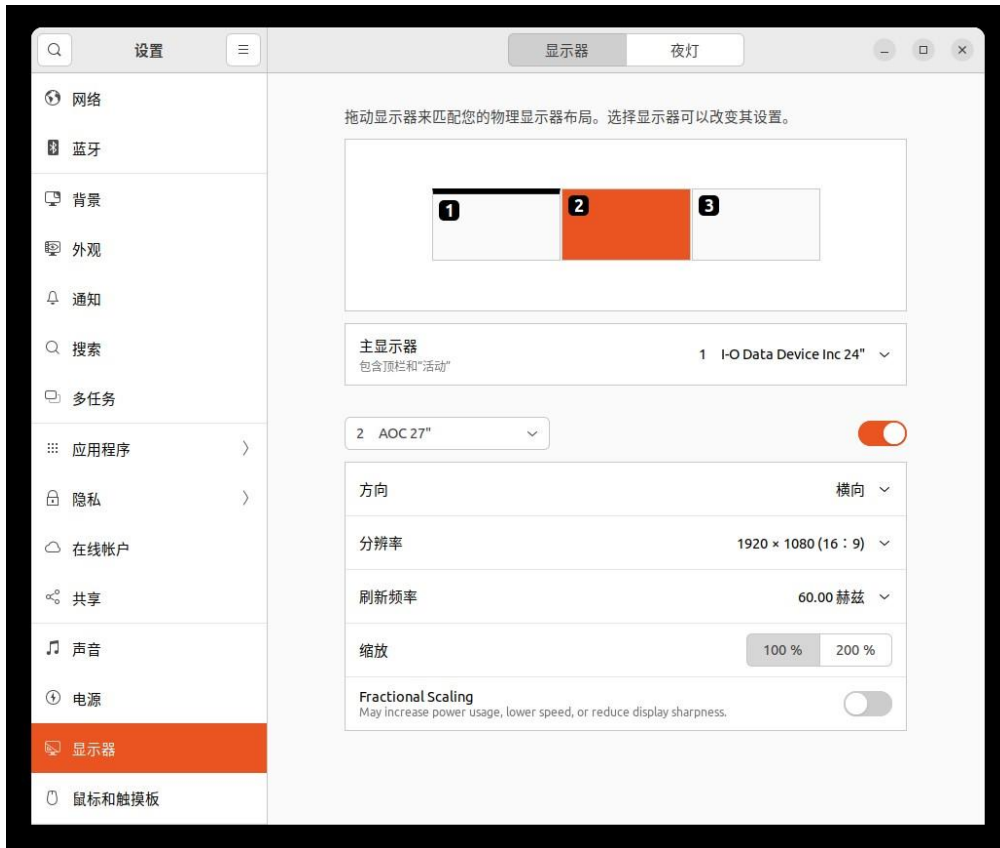


Figure 3.1 Monitor Mode Setting

3.2.1 Display mode

The software provides a powerful Extend mode feature that enables each connected monitor on USB graphics devices to display independent content, effectively expanding the desktop space. In Extend mode, users can multitask at the same time or easily switch between different applications. This flexibility greatly improves work efficiency, and users can assign different applications, files or tasks to different displays as needed, making operations more orderly and smooth.



Figure 3.2 Extend Display Mode

In addition, the software also supports the rotation function, the user can simply set the "Settings -> Display" if the display setting support rotation. This feature is very useful for portrait display or special scenes, to bring users more choices and personalized experience.

3.2.2 Multi-channel display

Support for dual device display, this software will bring users a more flexible work environment to improve work efficiency effectively. At the same time, the device can connect up to three 4K monitors, allowing users to immerse in a 4K high-quality visual experience. This superior image performance will greatly increase user satisfaction, making both work and play a better experience.

4. Uninstall SMI Linux USB Display Driver

Use ./run package name + uninstall with root permission. For example:

```
sudo ./SMIUSBDisplay-driver.*.*.*.*.run uninstall.
```

 The uninstallation is complete, as shown in

Figure 4.1.

```

smi@smi-Default-string:~/smiwork/r20_test
Distribution discovered: No LSB modules are available.
Ubuntu Noble Numbat (development branch)
Uninstalling
Stopping SMIUSBDisplay systemd service
Stopping smiusbdisplay systemd service
The unit files have no installation config (WantedBy=, RequiredBy=, UpheldBy=,
Also=, or Alias= settings in the [Install] section, and DefaultInstance= for
template units). This means they are not meant to be enabled or disabled using systemctl.

Possible reasons for having these kinds of units are:
* A unit may be statically enabled by being symlinked from another unit's
.wants/, .requires/, or .upholds/ directory.
* A unit's purpose may be to act as a helper for some other unit which has
a requirement dependency on it.
* A unit may be started when needed via activation (socket, path, timer,
D-Bus, udev, scripted systemctl call, ...).
* In case of template units, the unit is meant to be enabled with some
instance name specified.
[ Removing suspend-resume hooks ]
[ Removing udev rule ]
[ Removing Core folder ]
Removing EVDI from kernel tree, DKMS, and removing sources.
dkms remove evdi/1.14.2 --all
Module evdi-1.14.2 for kernel 6.8.0-11-generic (x86_64).
Before uninstall, this module version was ACTIVE on this kernel.

evdi.ko.zst:
- Uninstallation
  - Deleting from: /lib/modules/6.8.0-11-generic/updates/dkms/
  - Original module
  - No original module was found for this module on this kernel.
  - Use the dkms install command to reinstall any previous module version.
depmod.....
Deleting module evdi-1.14.2 completely from the DKMS tree.
rm -f -rf /usr/src/evdi-1.14.2

Uninstallation steps complete.
    
```

Figure 4.1 SMI Linux USB Display Driver Uninstallation is completed