

# POS Touch Open Source Driver Installation Guide

## 1. Setup the environment.

Before compiling the driver, you need the library and packages below. Usually, you can use the package manager (apt-get /YaST2 /yum /urpmi) to find the necessary packages.

a.	gcc	(apt-get install gcc)
b.	Xorg develop package	(apt-get install xorg-dev)
c.	Kernel headers	(apt-get install linux-headers-\$(uname -r))
d.	GTK2.0	(apt-get install libgtk2.0-dev)
e.	tcl develop package	(apt-get install tcl-dev)
f.	tk develop package	(apt-get install tk-dev)
g.	ncurses develop package	(apt-get install ncurses-dev)

P.S. Different OS or package managers may use different package names.

## 2. Structure of the driver package

File/Folder name				Note
V1.0.0.X	Application	RS232	Calib	3 point calibration tool for serial port POS Touch.
			FreeDraw	Test tool with touch and drawing.
			Linear	5/9 point calibration tool for serial port POS Touch.
		USB	Calib	3 point calibration tool for USB POS Touch.
			FreeDraw	Test tool with touch and drawing.
			Linear	5/9 point calibration tool for USB POS Touch.
	touch.calib			Configuration file for the calibration tool.
	USB_Kernel	v2.6.x	Touch	USB POS Touch kernel driver.
	Xorg	1.6.x-1.9.x	xdrv	Xorg driver for POS Touch.

## 3. Compiler and install the driver

After setting up the environment, we can start to compile the tool and the utility.

### a. Extract the driver package.

```
#tar xzvf POSTouch_Linux_OpenSource_v1.0.0.6.tar.gz
```

### b. Compile and install the Xorg driver

```
#cd v1.0.0.6/Xorg/1.6.x-1.9.x/xdrv/
```

```
#./configure --with-xlib=/usr/lib
```

```
#make
```

```
#make install
```

You can find the Xorg driver already installed to the /usr/lib/xorg/modules/input folder.

```

BUILD ENVIRONMENT:
architecture - i686-linux-gnu
linux kernel - yes
module versioning - no
kernel source - yes /lib/modules/2.6.35-22-generic/build
XFree86 source - no
Xorg SDK - yes /usr/include/xorg
XSERVER64 - no
dlloader - yes
XLib - yes /usr/lib
TCL - yes /usr/include/tcl
TK - yes /usr/include/tcl
ncurses - yes

BUILD OPTIONS:
xdrvrtouch_drv.so - yes /usr/lib/xorg/modules/input
xdrvrtouch_drv.o - no

```

### c. Compile and install USB Kernel driver

If you are installing the driver for the serial touch, you can skip this step.

```

#cd v1.0.0.6/USB_Kernel/v2.6.x/touch
#make
#cd touch/
#rm -f /lib/modules/$(uname -r)/kernel/drivers/input/touchscreen/usbtouchscreen*
#install -o root -g root -m 666 touch.ko /lib/modules/$(uname -r)/kernel/drivers/input/touchscreen/
#depmod -a

```

### d. Compile and install the calibration tools

Select the utilities you just need and compile them. For example, if your system needs a serial type touch driver, then you just need to compile the Linear/Calib applications in the RS232 folder. All the tools are based on GTK, so before you compile the driver, please ensure that you have the GTK dev package.

#### Calib:

```

#cd v1.0.0.6/AP/RS232/Calib
#./configure
#make
#make install

```

#### Linear:

```

#cd v1.0.0.6/AP/RS232/Linear
#./configure
#make
#make install

```

#### FreeDraw:

```

#cd v1.0.0.6/AP/RS232/FreeDraw
#./configure
#make
#make install

```

```

interface.c:389: warning: ignoring return value of 'write', declared with attribute 'warn_unused_result'
interface.c:399: warning: ignoring return value of 'write', declared with attribute 'warn_unused_result'
interface.c: In function 'StoreCalibrationData':
interface.c:444: warning: ignoring return value of 'write', declared with attribute 'warn_unused_result'
interface.c:468: warning: ignoring return value of 'write', declared with attribute 'warn_unused_result'
gcc -g -O2 -pthread -I/usr/include/gtk-2.0 -I/usr/lib/gtk-2.0/include -I/usr/include/atk-1.0 -I/usr/include/cairo -I/usr/include/gdk-pixbuf-2.0 -I/usr/include/pango-1.0 -I/usr/include/gio-unix-2.0/ -I/usr/include/glib-2.0 -I/usr/lib/glib-2.0/include -I/usr/include/pixman-1 -I/usr/include/freetype2 -I/usr/include/libpng12 -o Linear232 main.o interface.o -pthread -lgtk-x11-2.0 -lgdk-x11-2.0 -latk-1.0 -lgio-2.0 -lpangot2-1.0 -lpango-1.0 -lgobject-1.0 -lgdk-pixbuf-2.0 -lm -lcairo -lpng12 -lpango-1.0 -lfreetype -lfontconfig -ljpeg -lmodule-2.0 -lgthread-2.0 -lrt -lglib-2.0
root@root1-desktop:/Driver/v1.0.0.6/AP/RS232/Linear# make install
make[1]: Entering directory `/Driver/v1.0.0.6/AP/RS232/Linear'
test -z "/usr/local/bin" || mkdir -p -- "/usr/local/bin"
/usr/bin/install -c 'Linear232' '/usr/local/bin/Linear232'
make[1]: Nothing to be done for `install-data-am'.
make[1]: Leaving directory `/Driver/v1.0.0.6/AP/RS232/Linear'
root@root1-desktop:/Driver/v1.0.0.6/AP/RS232/Linear# Linear232

```

#### touch.calib:

One more file is needed: the touch.calib file is a configuration file for the calibration tools. You must copy the file to the /etc folder.

```
#cp v1.0.0.6/touch.calib /etc/
```

**P.S. If you are using Fedora or you got error message from configuration, you need add option LIBS="-IX11 -IXi" for configure.**

**EX:**

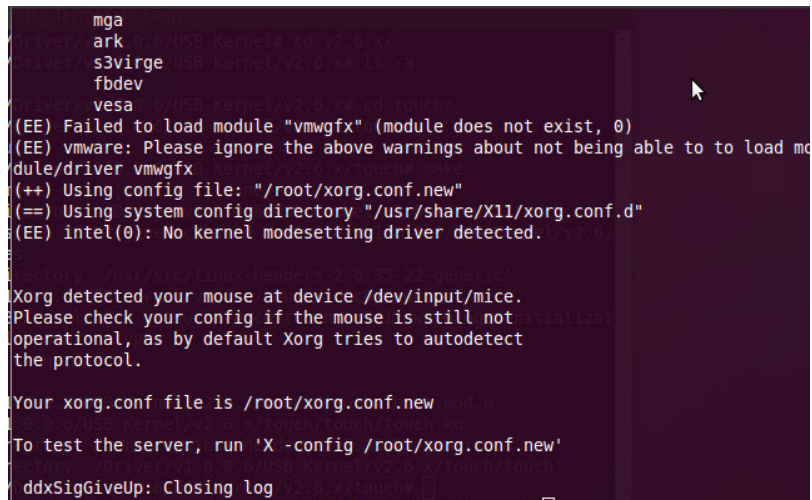
```
./configure LIBS="-IX11 -IXi"
```

#### 4. Modify the xorg.conf

Recent versions of Linux may not include xorg.conf. You can use the X configure function to make the configuration file as shown below.

```
#X --configure :1
```

```
#cp /root/xorg.conf.new /etc/X11/xorg.conf
```



```
mga
ark
s3virge
fbdev
vesa
(E) Failed to load module "vmwgfx" (module does not exist, 0)
(E) vmware: Please ignore the above warnings about not being able to to load mo
dule/driver vmwgfx
(++) Using config file: "/root/xorg.conf.new"
(==) Using system config directory "/usr/share/X11/xorg.conf.d"
(E) intel(0): No kernel modesetting driver detected.
Xorg detected your mouse at device /dev/input/mice.
Please check your config if the mouse is still not
operational, as by default Xorg tries to autodetect
the protocol.

Your xorg.conf file is /root/xorg.conf.new
To test the server, run 'X -config /root/xorg.conf.new'
ddxSigGiveUp: Closing log
```

Now we can start to modify the xorg.conf file and focus on the ServerLayout and InputDevice section.

Section "ServerLayout"		
Identifier	"X.org Configured"	
Screen	0	"Screen0" 0 0
InputDevice	"Mouse0"	"CorePointer"
InputDevice	"Keyboard0"	"CoreKeyboard"
InputDevice	"Touchscreen0"	"SendCoreEvents"
EndSection		
Section "InputDevice"		
Identifier	"Touchscreen0"	
Driver	"xftouch"	
Option	"Device"	"/dev/ttyS0"
Option	"ScreenNo"	"0"
Option	"Rotation"	"0"
Option	"SwapY"	"0"
Option	"DebugLevel"	"0"
Option	"UpSound"	"1"
Option	"DownSound"	"1"
Option	"RightButtonON"	"1"
Option	"XRandrSetting"	"1024x768+0+0"
EndSection		

### Device Option:

About the "Device" option, you need to confirm to which serial port the touch controller is connected, or whether it is a USB port.

#### a. RS232

Please install the setserial package. Our devices use /dev/ttyS4 for touch.

`#apt-get install setserial`

Use the command to list the serial ports. You should find 6 serial ports..

`#setserial -g /dev/ttyS?`

However, by default the Linux kernel supports only 4 serial ports.

If you can not find 6 serial ports with the setserial command, add the kernel option "8250.nr\_uaarts=6" to enable 6 serial ports as shown in the example below.

```
### BEGIN /etc/grub.d/10_linux ###
menuentry 'Ubuntu, with Linux 2.6.35-22-generic' --class ubuntu --class gnu-linux --class gnu --class
os {
    recordfail
    insmod part_msdos
    insmod ext2
    set root='(hd0,msdos1)'
    search --no-floppy --fs-uuid --set eaa4ddef-dc68-40e9-a6cb-125d3f039967
    linux /boot/vmlinuz-2.6.35-22-generic root=UUID=eaa4ddef-dc68-40e9-a6cb-125d3f039967 ro
    quiet splash 8250.nr_uaarts=6
    initrd /boot/initrd.img-2.6.35-22-generic
```

```
}
```

After enabling the serial ports, we can use the command below to find on which serial port the touch can be found. If you choose the correct serial port and click the panel a few times, the command should return some data. Then please change the option device to which you detected (EX: /dev/ttyS4).

```
#od -x </dev/ttyS4
```

## b. USB

After installing the kernel driver and using the depmod command to install the module and plug-in the USB touch controller. You can find the /dev/itdk0...etc. So modify the device option to /dev/itdk0.

## XRandrSetting Option:

Before using this option please verify that your driver version is open driver v1.0.0.6 or above. If you have a dual display with Intel Linux driver and you want to setup the touch on a single monitor. This option can help you to define the position and resolution of the touch area.

```
#xrandr -q
```

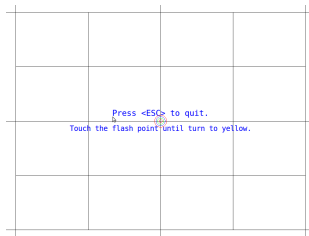
```
root@root1-desktop:/home/root1# xrandr -q
Screen 0: minimum 320 x 200, current 1024 x 768, maximum 4096 x 4096
VGA1 connected 1024x768+0+0 (normal left inverted right x axis y axis) 410mm x 256mm
  1366x768 59.8 +
  1280x1024 75.0
  1280x960 60.0
  1280x800 59.8
  1152x864 75.0
  1280x720 60.0
  1024x768 70.1 60.0*
   800x600 72.2 75.0 60.3 56.2
   640x480 72.8 75.0 60.0
   720x400 70.1
LVDS1 connected 1024x768+0+0 (normal left inverted right x axis y axis) 0mm x 0mm
  1024x768 60.0*+ 85.0 75.0 70.1 60.0*
   832x624 74.6
   800x600 85.1 72.2 75.0 60.3 56.2
   640x480 85.0 72.8 75.0 59.9
   720x400 85.0
   640x400 85.1
   640x350 85.1
```

Just copy the resolution and position from command reply (1024x768+0+0) add to XRandrSetting Option.

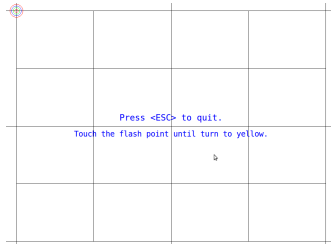
## 5. Calibration

After installing the tools you can use the command below to start the calibration.

```
#Linear232 /dev/ttyS4 9
```



```
#Calib_3P232 /dev/ttyS4
```



## 6. Uninstalling the driver

The simple way is to remove the xorg.conf section of the touch driver.

- Modify the xorg.conf setting: remove the touch sections.
- Remove the Calib\_3P232, FreeDraw and Linear232 tools on /usr/local/bin folder.
- Remove the xorg driver and kernel driver.

```
#rm /usr/lib/xorg/modules/input/xfdrvtouch_drv.so
```

```
#rm /lib/module/$(uname -r)/kernel/drivers/input/touchscreen/touch.ko
```