

ATI 9600Pro screen wiggle problem

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I have a little problem with the screen on a linux box when I attempt to use the ATI proprietary video driver for it. The vertical lines on the screen have a little "wiggle" to them. It is almost as though the scan lines were being transposed left or right by a pixel or two constantly. It is most annoying.

My current thought is that this is a bug in their driver, but I am not clear on that. Following are details and some attempts to figure it out:

The details:

Shuttle SB65G2 with Intel 2.4 GHz CPU
Video card – ATI 9600 Pro graphics card
Monitor – Apple 15 in. flat panel (their very first 15 in. flat panel)
Slackware 9.1 running kernel 2.4.24
ATI's fglrx driver (have tried a number of versions up to and including fglrx-4.3.0-3.14.6.i386.rpm)

In order to get fast opengl performance (which is what I am looking for so as to play with things), it seems to be necessary to use the ATI fglrx driver.

But the fglrx driver has this annoying screen flicker or wiggle.

If I use a XF86Config-4 file generated by a recent Knoppix disk, then the screen is fine. But it is 16 bits only and no openGL speed. If I switch to the ATI driver, with its kernel settings and its own XF86Config-4 file, then there is openGL plus the screen wiggle.

My guessing is that the wiggle is either a bug in fglrx for this monitor, or something subtle in the XF86Config-4 that I am missing. Any suggestions would be appreciated. Text of the two config files follows:

```
//===== XF86Config-4 from fglrxconfig (with 3 modelines added  
from Knoppix) =====
```

```
# File: XF86Config-4  
# File generated by fglrxconfig (C) ATI Research, a substitute for  
xf86config.
```

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```
# Note by ATI: the below copyright notice is there for servicing possibly
# pending third party rights on the file format and the instance of this
file.
#
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#
# *****
# Refer to the XF86Config(4/5) man page for details about the format of
# this file.
# *****
# *****
# DRI Section
# *****
Section "dri"
# Access to OpenGL ICD is allowed for all users:
    Mode 0666
# Access to OpenGL ICD is restricted to a specific user group:
# Group 100 # users
# Mode 0660
EndSection
# *****
# Module section -- this section is used to specify
# which dynamically loadable modules to load.
# *****
#
```

Section "Module"

This loads the DBE extension module.

Load "dbe" # Double buffer extension

This loads the miscellaneous extensions module, and disables
initialisation of the XFree86-DGA extension within that module.

SubSection "extmod"

Option "omit xfree86-dga" # don't initialise the DGA extension

EndSubSection

This loads the Type1 and FreeType font modules

Load "type1"

Load "freetype"

This loads the GLX module

Load "glx" # libglx.a

Load "dri" # libdri.a

EndSection

Files section. This allows default font and rgb paths to be set

Section "Files"

The location of the RGB database. Note, this is the name of the
file minus the extension (like ".txt" or ".db"). There is normally
no need to change the default.

RgbPath "/usr/X11R6/lib/X11/rgb"

Multiple FontPath entries are allowed (which are concatenated together),
as well as specifying multiple comma-separated entries in one FontPath
command (or a combination of both methods)

#

If you don't have a floating point coprocessor and emacs, Mosaic or other
programs take long to start up, try moving the Type1 and Speedo directory
to the end of this list (or comment them out).

#

FontPath "/usr/X11R6/lib/X11/fonts/local/"

FontPath "/usr/X11R6/lib/X11/fonts/misc/"

FontPath "/usr/X11R6/lib/X11/fonts/75dpi:unscaled"

FontPath "/usr/X11R6/lib/X11/fonts/100dpi:unscaled"

FontPath "/usr/X11R6/lib/X11/fonts/Type1/"

FontPath "/usr/X11R6/lib/X11/fonts/Speedo/"

FontPath "/usr/X11R6/lib/X11/fonts/75dpi/"

FontPath "/usr/X11R6/lib/X11/fonts/100dpi/"

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```
# The module search path. The default path is shown here.

# ModulePath "/usr/X11R6/lib/modules"

EndSection

# *****
# Server flags section.
# *****

Section "ServerFlags"

# Uncomment this to cause a core dump at the spot where a signal is
# received. This may leave the console in an unusable state, but may
# provide a better stack trace in the core dump to aid in debugging

# Option "NoTrapSignals"

# Uncomment this to disable the <Ctrl><Alt><BS> server abort sequence
# This allows clients to receive this key event.

# Option "DontZap"

# Uncomment this to disable the <Ctrl><Alt><KP_+>/<KP_-> mode switching
# sequences. This allows clients to receive these key events.

# Option "Dont Zoom"

# Uncomment this to disable tuning with the xvidtune client. With
# it the client can still run and fetch card and monitor attributes,
# but it will not be allowed to change them. If it tries it will
# receive a protocol error.

# Option "DisableVidModeExtension"

# Uncomment this to enable the use of a non-local xvidtune client.

# Option "AllowNonLocalXvidtune"

# Uncomment this to disable dynamically modifying the input device
# (mouse and keyboard) settings.

# Option "DisableModInDev"

# Uncomment this to enable the use of a non-local client to
# change the keyboard or mouse settings (currently only xset).

# Option "AllowNonLocalModInDev"

EndSection
```

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```
# *****  
# Input devices  
# *****  
  
# *****  
# Core keyboard's InputDevice section  
# *****  
  
Section "InputDevice"  
  
    Identifier "Keyboard1"  
    Driver "Keyboard"  
# For most OSs the protocol can be omitted (it defaults to "Standard").  
# When using XQUEUE (only for SVR3 and SVR4, but not Solaris),  
# uncomment the following line.  
  
# Option "Protocol" "Xqueue"  
  
    Option "AutoRepeat" "500 30"  
  
# Specify which keyboard LEDs can be user-controlled (eg, with xset(1))  
# Option "Xleds" "1 2 3"  
  
# Option "LeftAlt" "Meta"  
# Option "RightAlt" "ModeShift"  
  
# To customise the XKB settings to suit your keyboard, modify the  
# lines below (which are the defaults). For example, for a non-U.S.  
# keyboard, you will probably want to use:  
# Option "XkbModel" "pc102"  
# If you have a US Microsoft Natural keyboard, you can use:  
# Option "XkbModel" "microsoft"  
#  
# Then to change the language, change the Layout setting.  
# For example, a german layout can be obtained with:  
# Option "XkbLayout" "de"  
# or:  
# Option "XkbLayout" "de"  
# Option "XkbVariant" "nodeadkeys"  
#  
# If you'd like to switch the positions of your capslock and  
# control keys, use:  
# Option "XkbOptions" "ctrl:swapcaps"  
  
# These are the default XKB settings for XFree86  
# Option "XkbRules" "xfree86"  
# Option "XkbModel" "pc101"  
# Option "XkbLayout" "us"  
# Option "XkbVariant" ""  
# Option "XkbOptions" ""
```

```
# Option "XkbDisable"
```

```
Option "XkbRules" "xfree86"  
Option "XkbModel" "dell101"  
Option "XkbLayout" "us"
```

```
EndSection
```

```
# *****  
# Core Pointer's InputDevice section  
# *****
```

```
Section "InputDevice"
```

```
# Identifier and driver
```

```
Identifier "Mouse1"  
Driver "mouse"  
Option "Protocol" "ImPS/2"  
Option "ZAxisMapping" "4 5"  
Option "Device" "/dev/mouse"
```

```
# When using XQUEUE, comment out the above two lines, and uncomment  
# the following line.
```

```
# Option "Protocol" "Xqueue"
```

```
# Baudrate and SampleRate are only for some Logitech mice. In  
# almost every case these lines should be omitted.
```

```
# Option "BaudRate" "9600"  
# Option "SampleRate" "150"
```

```
# Emulate3Buttons is an option for 2-button Microsoft mice  
# Emulate3Timeout is the timeout in milliseconds (default is 50ms)
```

```
# Option "Emulate3Buttons"  
# Option "Emulate3Timeout" "50"
```

```
# ChordMiddle is an option for some 3-button Logitech mice
```

```
# Option "ChordMiddle"
```

```
EndSection
```

```
# *****  
# Other input device sections  
# this is optional and is required only if you  
# are using extended input devices. This is for example only. Refer  
# to the XF86Config man page for a description of the options.  
# *****
```

```
#
# Section "InputDevice"
# Identifier "Mouse2"
# Driver "mouse"
# Option "Protocol" "MouseMan"
# Option "Device" "/dev/mouse2"
# EndSection
#
# Section "InputDevice"
# Identifier "spaceball"
# Driver "magellan"
# Option "Device" "/dev/cua0"
# EndSection
#
# Section "InputDevice"
# Identifier "spaceball2"
# Driver "spaceorb"
# Option "Device" "/dev/cua0"
# EndSection
#
# Section "InputDevice"
# Identifier "touchscreen0"
# Driver "microtouch"
# Option "Device" "/dev/ttyS0"
# Option "MinX" "1412"
# Option "MaxX" "15184"
# Option "MinY" "15372"
# Option "MaxY" "1230"
# Option "ScreenNumber" "0"
# Option "ReportingMode" "Scaled"
# Option "ButtonNumber" "1"
# Option "SendCoreEvents"
# EndSection
#
# Section "InputDevice"
# Identifier "touchscreen1"
# Driver "elo2300"
# Option "Device" "/dev/ttyS0"
# Option "MinX" "231"
# Option "MaxX" "3868"
# Option "MinY" "3858"
# Option "MaxY" "272"
# Option "ScreenNumber" "0"
# Option "ReportingMode" "Scaled"
# Option "ButtonThreshold" "17"
# Option "ButtonNumber" "1"
# Option "SendCoreEvents"
# EndSection

# *****
# Monitor section
```

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```
# *****  
  
# Any number of monitor sections may be present  
  
Section "Monitor"  
    Identifier "Monitor0"  
    HorizSync 31 – 61  
    VertRefresh 56 – 76  
    Option "DPMS"  
  
# == modelines from knoppix ==  
ModeLine "1024x768" 75.00 1024 1048 1184 1328 768 771 777 806 –hsync  
–vsync  
ModeLine "800x600" 49.50 800 816 896 1056 600 601 604 625 +hsync  
+vsync  
ModeLine "640x480" 31.50 640 656 720 840 480 481 484 500 –hsync  
–vsync  
  
# === mode lines based on GTF ===  
# VGA @ 100Hz  
# Modeline "640x480@100" 43.163 640 680 744 848 480 481 484 509 +hsync  
+vsync  
# SVGA @ 100Hz  
# Modeline "800x600@100" 68.179 800 848 936 1072 600 601 604 636 +hsync  
+vsync  
# XVGA @ 100Hz  
# Modeline "1024x768@100" 113.309 1024 1096 1208 1392 768 769 772 814  
+hsync +vsync  
# 1152x864 @ 60Hz  
# Modeline "1152x864@60" 81.642 1152 1216 1336 1520 864 865 868 895  
+hsync +vsync  
# 1152x864 @ 85Hz  
# Modeline "1152x864@85" 119.651 1152 1224 1352 1552 864 865 868 907  
+hsync +vsync  
# 1152x864 @ 100Hz  
# Modeline "1152x864@100" 143.472 1152 1232 1360 1568 864 865 868 915  
+hsync +vsync  
# 1280x960 @ 75Hz  
# Modeline "1280x960@75" 129.859 1280 1368 1504 1728 960 961 964 1002  
+hsync +vsync  
# 1280x960 @ 100Hz  
# Modeline "1280x960@100" 178.992 1280 1376 1520 1760 960 961 964 1017  
+hsync +vsync  
# SXGA @ 100Hz  
# Modeline "1280x1024@100" 190.960 1280 1376 1520 1760 1024 1025 1028  
1085 +hsync +vsync  
# SPEA GDM–1950 (60Hz,64kHz,110MHz,-,-): 1280x1024 @ V–freq: 60.00 Hz,  
H–freq: 63.73 KHz  
# Modeline "GDM–1950" 109.62 1280 1336 1472 1720 1024 1024 1026 1062  
–hsync –vsync  
# 1600x1000 @ 60Hz
```

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```
# Modeline "1600x1000" 133.142 1600 1704 1872 2144 1000 1001 1004 1035
+hsync +vsync
# 1600x1000 @ 75Hz
# Modeline "1600x1000" 169.128 1600 1704 1880 2160 1000 1001 1004 1044
+hsync +vsync
# 1600x1000 @ 85Hz
# Modeline "1600x1000" 194.202 1600 1712 1888 2176 1000 1001 1004 1050
+hsync +vsync
# 1600x1000 @ 100Hz
# Modeline "1600x1000" 232.133 1600 1720 1896 2192 1000 1001 1004 1059
+hsync +vsync
# 1600x1024 @ 60Hz
# Modeline "1600x1024" 136.385 1600 1704 1872 2144 1024 1027 1030 1060
+hsync +vsync
# 1600x1024 @ 75Hz
# Modeline "1600x1024" 174.416 1600 1712 1888 2176 1024 1025 1028 1069
+hsync +vsync
# 1600x1024 @ 76Hz
# Modeline "1600x1024" 170.450 1600 1632 1792 2096 1024 1027 1030 1070
+hsync +vsync
# 1600x1024 @ 85Hz
# Modeline "1600x1024" 198.832 1600 1712 1888 2176 1024 1027 1030 1075
+hsync +vsync
# 1920x1080 @ 60Hz
# Modeline "1920x1080" 172.798 1920 2040 2248 2576 1080 1081 1084 1118
-hsync -vsync
# 1920x1080 @ 75Hz
# Modeline "1920x1080" 211.436 1920 2056 2264 2608 1080 1081 1084 1126
+hsync +vsync
# 1920x1200 @ 60Hz
# Modeline "1920x1200" 193.156 1920 2048 2256 2592 1200 1201 1203 1242
+hsync +vsync
# 1920x1200 @ 75Hz
# Modeline "1920x1200" 246.590 1920 2064 2272 2624 1200 1201 1203 1253
+hsync +vsync
# 2048x1536 @ 60
# Modeline "2048x1536" 266.952 2048 2200 2424 2800 1536 1537 1540 1589
+hsync +vsync
# 2048x1536 @ 60
# Modeline "2048x1536" 266.952 2048 2200 2424 2800 1536 1537 1540 1589
+hsync +vsync
# 1400x1050 @ 60Hz M9 Laptop mode
# Modeline "1400x1050" 122.000 1400 1488 1640 1880 1050 1052 1064 1082
+hsync +vsync
# 1920x2400 @ 25Hz for IBM T221, VS VP2290 and compatible display devices
# Modeline "1920x2400@25" 124.620 1920 1928 1980 2048 2400 2401 2403
2434 +hsync +vsync
# 1920x2400 @ 30Hz for IBM T221, VS VP2290 and compatible display devices
# Modeline "1920x2400@30" 149.250 1920 1928 1982 2044 2400 2402 2404
2434 +hsync +vsync
```

EndSection

```
# *****  
# Graphics device section  
# *****
```

Any number of graphics device sections may be present

Standard VGA Device:

```
Section "Device"  
    Identifier "Standard VGA"  
    VendorName "Unknown"  
    BoardName "Unknown"
```

The chipset line is optional in most cases. It can be used to override
the driver's chipset detection, and should not normally be specified.

Chipset "generic"

The Driver line must be present. When using run-time loadable driver
modules, this line instructs the server to load the specified driver
module. Even when not using loadable driver modules, this line
indicates which driver should interpret the information in this section.

```
    Driver "vga"
```

The BusID line is used to specify which of possibly multiple devices
this section is intended for. When this line isn't present, a device
section can only match up with the primary video device. For PCI
devices a line like the following could be used. This line should not
normally be included unless there is more than one video device
installed.

```
# BusID "PCI:0:10:0"
```

```
# VideoRam 256
```

```
# Clocks 25.2 28.3
```

EndSection

=== ATI device section ===

```
Section "Device"  
    Identifier "ATI Graphics Adapter"  
    Driver "fglrx"  
    ### generic DRI settings ###  
    === disable PnP Monitor ===  
    #Option "NoDDC"  
    === disable/enable XAA/DRI ===  
    Option "no_accel" "no"
```

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```
Option "no_dri" "no"
# === misc DRI settings ===
Option "mtrr" "off" # disable DRI mtrr mapper,
driver has its own code for mtrr
# ### FireGL DDX driver module specific settings ###
# === Screen Management ===
Option "DesktopSetup" "0x00000000"
Option "MonitorLayout" "AUTO, AUTO"
Option "IgnoreEDID" "off"
Option "HSync2" "unspecified"
Option "VRefresh2" "unspecified"
Option "ScreenOverlap" "0"
# === TV-out Management ===
Option "NoTV" "yes"
Option "TVStandard" "NTSC-M"
Option "TVHSizeAdj" "0"
Option "TVVSizeAdj" "0"
Option "TVHPosAdj" "0"
Option "TVVPosAdj" "0"
Option "TVHStartAdj" "0"
Option "TVColorAdj" "0"
Option "GammaCorrectionI" "0x00000000"
Option "GammaCorrectionII" "0x00000000"
# === OpenGL specific profiles/settings ===
Option "Capabilities" "0x00000000"
# === Video Overlay for the Xv extension ===
Option "VideoOverlay" "on"
# === OpenGL Overlay ===
# Note: When OpenGL Overlay is enabled, Video Overlay
# will be disabled automatically
Option "OpenGLOverlay" "off"
# === Center Mode (Laptops only) ===
Option "CenterMode" "off"
# === Pseudo Color Visuals (8-bit visuals) ===
Option "PseudoColorVisuals" "off"
# === QBS Management ===
Option "Stereo" "off"
Option "StereoSyncEnable" "1"
# === FSAAs Management ===
Option "FSAAsEnable" "no"
Option "FSAAsScale" "1"
Option "FSAAsDisableGamma" "no"
Option "FSAAsCustomizeMSPos" "no"
Option "FSAAsMSPosX0" "0.000000"
Option "FSAAsMSPosY0" "0.000000"
Option "FSAAsMSPosX1" "0.000000"
Option "FSAAsMSPosY1" "0.000000"
Option "FSAAsMSPosX2" "0.000000"
Option "FSAAsMSPosY2" "0.000000"
Option "FSAAsMSPosX3" "0.000000"
Option "FSAAsMSPosY3" "0.000000"
```

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```
Option "FSAAMSPosX4" "0.000000"
Option "FSAAMSPosY4" "0.000000"
Option "FSAAMSPosX5" "0.000000"
Option "FSAAMSPosY5" "0.000000"
# === Misc Options ===
Option "UseFastTLS" "0"
Option "BlockSignalsOnLock" "on"
Option "UseInternalAGPGART" "yes"
Option "ForceGenericCPU" "no"
BusID "PCI:1:0:0" # vendor=1002, device=4150
Screen 0
EndSection

# *****
# Screen sections
# *****

# Any number of screen sections may be present. Each describes
# the configuration of a single screen. A single specific screen section
# may be specified from the X server command line with the "--screen"
# option.
Section "Screen"
    Identifier "Screen0"
    Device "ATI Graphics Adapter"
    Monitor "Monitor0"
    DefaultDepth 24
    #Option "backingstore"

    Subsection "Display"
        Depth 24
        Modes "1024x768" "800x600" "640x480"
        ViewPort 0 0 # initial origin if mode is smaller than desktop
# Virtual 1280 1024
    EndSubsection
EndSection

# *****
# ServerLayout sections.
# *****

# Any number of ServerLayout sections may be present. Each describes
# the way multiple screens are organised. A specific ServerLayout
# section may be specified from the X server command line with the
# "--layout" option. In the absence of this, the first section is used.
# When now ServerLayout section is present, the first Screen section
# is used alone.

Section "ServerLayout"

# The Identifier line must be present
    Identifier "Server Layout"
```

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```
# Each Screen line specifies a Screen section name, and optionally
# the relative position of other screens. The four names after
# primary screen name are the screens to the top, bottom, left and right
# of the primary screen.
```

```
Screen "Screen0"
```

```
# Each InputDevice line specifies an InputDevice section name and
# optionally some options to specify the way the device is to be
# used. Those options include "CorePointer", "CoreKeyboard" and
# "SendCoreEvents".
```

```
InputDevice "Mouse1" "CorePointer"
InputDevice "Keyboard1" "CoreKeyboard"
```

```
EndSection
```

```
### EOF ###
```

```
//===== XF86Config-4 from Knoppix
```

```
=====
```

```
Section "ServerLayout"
```

```
Identifier "XFree86 Configured"
```

```
Screen 0 "Screen0" 0 0
```

```
InputDevice "Keyboard0" "CoreKeyboard"
```

```
# PS/2 Mouse not detected
```

```
# Serial Mouse not detected
```

```
InputDevice "USB Mouse" "CorePointer"
```

```
EndSection
```

```
Section "ServerFlags"
```

```
Option "AllowMouseOpenFail" "true"
```

```
EndSection
```

```
Section "Files"
```

```
RgbPath "/usr/X11R6/lib/X11/rgb"
```

```
ModulePath "/usr/X11R6/lib/modules"
```

```
FontPath "/usr/X11R6/lib/X11/fonts/misc:unscaled"
```

```
FontPath "/usr/X11R6/lib/X11/fonts/misc"
```

```
FontPath "/usr/X11R6/lib/X11/fonts/75dpi:unscaled"
```

```
FontPath "/usr/X11R6/lib/X11/fonts/75dpi"
```

```
FontPath "/usr/X11R6/lib/X11/fonts/100dpi:unscaled"
```

```
FontPath "/usr/X11R6/lib/X11/fonts/100dpi"
```

```
FontPath "/usr/X11R6/lib/X11/fonts/Speedo"
```

```
FontPath "/usr/X11R6/lib/X11/fonts/PEX"
```

```
# Additional fonts: Locale, Gimp, TTF...
```

```
FontPath "/usr/X11R6/lib/X11/fonts/cyrillic"
```

```
# FontPath "/usr/X11R6/lib/X11/fonts/latin2/75dpi"
```

```
# FontPath "/usr/X11R6/lib/X11/fonts/latin2/100dpi"
```

```
# True type and type1 fonts are also handled via xftlib, see
```

```
/etc/X11/XftConfig!  
FontPath "/usr/X11R6/lib/X11/fonts/Type1"  
FontPath "/usr/share/fonts/ttf/western"  
FontPath "/usr/share/fonts/ttf/decoratives"  
FontPath "/usr/share/fonts/truetype"  
FontPath "/usr/share/fonts/truetype/openoffice"  
FontPath "/usr/share/fonts/truetype/ttf-bitstream-vera"  
FontPath "/usr/share/fonts/latex-ttf-fonts"  
FontPath "/usr/X11R6/lib/X11/fonts/defoma/CID"  
FontPath "/usr/X11R6/lib/X11/fonts/defoma/TrueType"  
EndSection
```

```
Section "Module"  
    Load "ddc" # ddc probing of monitor  
    Load "GLcore"  
    Load "dbe"  
    Load "dri"  
    Load "extmod"  
    Load "glx"  
        Load "bitmap" # bitmap-fonts  
    Load "speedo"  
    Load "type1"  
    Load "freetype"  
    Load "record"  
EndSection
```

```
Section "InputDevice"  
    Identifier "Keyboard0"  
    Driver "keyboard"  
        Option "CoreKeyboard"  
    Option "XkbRules" "xfree86"  
    Option "XkbModel" "pc105"  
    Option "XkbLayout" "us"  
EndSection
```

```
EndSection
```

```
Section "InputDevice"  
    Identifier "Serial Mouse"  
    Driver "mouse"  
    Option "Protocol" "Microsoft"  
    Option "Device" "/dev/ttyS0"  
    Option "Emulate3Buttons" "true"  
    Option "Emulate3Timeout" "70"  
    Option "SendCoreEvents" "true"  
EndSection
```

```
Section "InputDevice"  
    Identifier "PS/2 Mouse"  
    Driver "mouse"  
    Option "Protocol" "auto"  
    Option "ZAxisMapping" "4 5"
```

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```
Option "Device" "/dev/psaux"
Option "Emulate3Buttons" "true"
Option "Emulate3Timeout" "70"
Option "SendCoreEvents" "true"
EndSection

Section "InputDevice"
    Identifier "USB Mouse"
    Driver "mouse"
    Option "Device" "/dev/input/mice"
    Option "SendCoreEvents" "true"
    Option "Protocol" "IMPS/2"
    Option "ZAxisMapping" "4 5"
    Option "Buttons" "5"
EndSection

# Auto-generated by KNOPPIX mkxf86config

Section "Monitor"
    Identifier "Monitor0"
    Option "DPMS" "true"
    VendorName "APP"
    ModelName "APP01f4"
    HorizSync 31 - 61 # DDC-probed
    VertRefresh 56 - 76 # DDC-probed
    # These are the DDC-probed settings reported by your monitor.
    # 1280x1024, 75.0Hz; hfreq=79.98, vfreq=75.03
    ModeLine "1280x1024" 135.00 1280 1296 1440 1688 1024 1025 1028
1066 +hsync +vsync
    # 1024x768, 75.0Hz; hfreq=60.02, vfreq=75.03
    ModeLine "1024x768" 78.75 1024 1040 1136 1312 768 769 772
800 +hsync +vsync
    # 1024x768, 70.0Hz; hfreq=56.48, vfreq=70.07
    ModeLine "1024x768" 75.00 1024 1048 1184 1328 768 771 777
806 -hsync -vsync
    # 800x600, 75.0Hz; hfreq=46.88, vfreq=75.00
    ModeLine "800x600" 49.50 800 816 896 1056 600 601 604 625
+hsync +vsync
    # 800x600, 60.0Hz; hfreq=37.88, vfreq=60.32
    ModeLine "800x600" 40.00 800 840 968 1056 600 601 605 628
+hsync +vsync
    # 640x480, 75.0Hz; hfreq=37.50, vfreq=75.00
    ModeLine "640x480" 31.50 640 656 720 840 480 481 484 500
-hsync -vsync
    # 640x480, 72.0Hz; hfreq=37.86, vfreq=72.81
    ModeLine "640x480" 31.50 640 656 696 816 480 481 484 504
-hsync -vsync
    # 640x480, 60.0Hz; hfreq=31.47, vfreq=59.94
    ModeLine "640x480" 25.17 640 648 744 784 480 482 484 509
-hsync -vsync
    # Extended modelines with GTF timings
```

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```
# 640x480 @ 100.00 Hz (GTF) hsync: 50.90 kHz; pclk: 43.16 MHz
ModeLine "640x480" 43.16 640 680 744 848 480 481 484 509 -HSync
+Vsync
# 768x576 @ 60.00 Hz (GTF) hsync: 35.82 kHz; pclk: 34.96 MHz
ModeLine "768x576" 34.96 768 792 872 976 576 577 580 597 -HSync
+Vsync
# 768x576 @ 72.00 Hz (GTF) hsync: 43.27 kHz; pclk: 42.93 MHz
ModeLine "768x576" 42.93 768 800 880 992 576 577 580 601 -HSync
+Vsync
# 768x576 @ 75.00 Hz (GTF) hsync: 45.15 kHz; pclk: 45.51 MHz
ModeLine "768x576" 45.51 768 808 888 1008 576 577 580 602 -HSync
+Vsync
# 768x576 @ 85.00 Hz (GTF) hsync: 51.42 kHz; pclk: 51.84 MHz
ModeLine "768x576" 51.84 768 808 888 1008 576 577 580 605 -HSync
+Vsync
# 768x576 @ 100.00 Hz (GTF) hsync: 61.10 kHz; pclk: 62.57 MHz
ModeLine "768x576" 62.57 768 816 896 1024 576 577 580 611 -HSync
+Vsync
# 800x600 @ 100.00 Hz (GTF) hsync: 63.60 kHz; pclk: 68.18 MHz
ModeLine "800x600" 68.18 800 848 936 1072 600 601 604 636 -HSync
+Vsync
# 1024x768 @ 100.00 Hz (GTF) hsync: 81.40 kHz; pclk: 113.31 MHz
ModeLine "1024x768" 113.31 1024 1096 1208 1392 768 769 772 814
-HSync +Vsync
# 1152x864 @ 60.00 Hz (GTF) hsync: 53.70 kHz; pclk: 81.62 MHz
ModeLine "1152x864" 81.62 1152 1216 1336 1520 864 865 868 895
-HSync +Vsync
# 1152x864 @ 85.00 Hz (GTF) hsync: 77.10 kHz; pclk: 119.65 MHz
ModeLine "1152x864" 119.65 1152 1224 1352 1552 864 865 868 907
-HSync +Vsync
# 1152x864 @ 100.00 Hz (GTF) hsync: 91.50 kHz; pclk: 143.47 MHz
ModeLine "1152x864" 143.47 1152 1232 1360 1568 864 865 868 915
-HSync +Vsync
# 1280x960 @ 72.00 Hz (GTF) hsync: 72.07 kHz; pclk: 124.54 MHz
ModeLine "1280x960" 124.54 1280 1368 1504 1728 960 961 964 1001
-HSync +Vsync
# 1280x960 @ 75.00 Hz (GTF) hsync: 75.15 kHz; pclk: 129.86 MHz
ModeLine "1280x960" 129.86 1280 1368 1504 1728 960 961 964 1002
-HSync +Vsync
# 1280x960 @ 100.00 Hz (GTF) hsync: 101.70 kHz; pclk: 178.99 MHz
ModeLine "1280x960" 178.99 1280 1376 1520 1760 960 961 964 1017
-HSync +Vsync
# 1280x1024 @ 100.00 Hz (GTF) hsync: 108.50 kHz; pclk: 190.96 MHz
ModeLine "1280x1024" 190.96 1280 1376 1520 1760 1024 1025 1028
1085 -HSync +Vsync
# 1400x1050 @ 60.00 Hz (GTF) hsync: 65.22 kHz; pclk: 122.61 MHz
ModeLine "1400x1050" 122.61 1400 1488 1640 1880 1050 1051 1054
1087 -HSync +Vsync
# 1400x1050 @ 72.00 Hz (GTF) hsync: 78.77 kHz; pclk: 149.34 MHz
ModeLine "1400x1050" 149.34 1400 1496 1648 1896 1050 1051 1054
1094 -HSync +Vsync
```

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```
# 1400x1050 @ 75.00 Hz (GTF) hsync: 82.20 kHz; pclk: 155.85 MHz
ModeLine "1400x1050" 155.85 1400 1496 1648 1896 1050 1051 1054
1096 -HSync +Vsync
# 1400x1050 @ 85.00 Hz (GTF) hsync: 93.76 kHz; pclk: 179.26 MHz
ModeLine "1400x1050" 179.26 1400 1504 1656 1912 1050 1051 1054
1103 -HSync +Vsync
# 1400x1050 @ 100.00 Hz (GTF) hsync: 111.20 kHz; pclk: 214.39 MHz
ModeLine "1400x1050" 214.39 1400 1512 1664 1928 1050 1051 1054
1112 -HSync +Vsync
# 1600x1200 @ 100.00 Hz (GTF) hsync: 127.10 kHz; pclk: 280.64 MHz
ModeLine "1600x1200" 280.64 1600 1728 1904 2208 1200 1201 1204
1271 -HSync +Vsync
EndSection
```

Section "Device"

```
### Available Driver options are:-
# sw_cursor is needed for some ati and radeon cards
#Option "sw_cursor"
#Option "hw_cursor"
#Option "NoAccel"
#Option "ShowCache"
#Option "ShadowFB"
#Option "UseFBDev"
#Option "Rotate"
Identifier "Card0"
# The following line is auto-generated by KNOPPIX mkxf86config
Driver "vesa"
VendorName "All"
BoardName "All"
# BusID "PCI:1:0:0"
EndSection
```

Section "Screen"

```
Identifier "Screen0"
Device "Card0"
Monitor "Monitor0"
DefaultColorDepth 16
SubSection "Display"
    Depth 1
    Modes "1024x768" "800x600" "640x480"
EndSubSection
SubSection "Display"
    Depth 4
    Modes "1024x768" "800x600" "640x480"
EndSubSection
SubSection "Display"
    Depth 8
    Modes "1024x768" "800x600" "640x480"
EndSubSection
SubSection "Display"
    Depth 15
```

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```
Modes "1024x768" "800x600" "640x480"  
EndSubSection  
SubSection "Display"  
  Depth 16  
  Modes "1024x768" "800x600" "640x480"  
EndSubSection  
SubSection "Display"  
  Depth 24  
  Modes "1024x768" "800x600" "640x480"  
EndSubSection  
SubSection "Display"  
  Depth 32  
  Modes "1024x768" "800x600" "640x480"  
EndSubSection  
EndSection  
  
Section "DRI"  
  Mode 0666  
EndSection  
//===== end =====
```