FAQ / Application Note

Subject : How to install rotation of Fedora Core5 with ECM-CX700	
FAQ Document No: S09004	**Date: 2009/01/20**
Model Name. ECM-CX700	**Rev. A1**
Category: ☐General ☐H/W ■S/W ☐Others, **Application**	
Purpose : the Rotation mode of Fedora Core5 with T315XW02-VC on ECM-CX700	

Please refer to the document below
1, CX700XOrg85_Rotate_FC5_Avalue exe pwd.txt
2, CX700XOrg85_Rotate_FC5_Avalue.zip
3, xorg.conf

Update Kernel & Xorg driver

1.1 Install Fedora Core5 by FC5 DVD installation DVD-ROM in advance and login system as root
1.2 Copy files below to /root
Linux-2.6.15.i686.tar.gz
CLE266CN400CN-CX700CN800XORG40072.tar.gz
1.3 Update kernel to enable DRM function for CX700
1.4 #tar –xzf linux-2.6.15.i686.tar.gz
1.5 #cd linux-2.6.15.i686
1.6 #make modules_install install
1.7 Reboot the system
1.8 Install DRI/XORG driver for CX700

How to Install Linux VIA/S3G Unichrome Graphic Driver and utility

1.1 Configure your hardware device when installing Linux

1.1.1 Video Configuration

Please choose another video card, for example "S3 Savgae4 (generic)" because CLE graphic chip is not on the support list. We will modify this configuration in step 3 for CLE graphic chip after the installation. If you choose to "Skip X Configuration", you could configure X after the installation following step 1.2.

1.1.2 Monitor Configuration

The installation program will attempt to detect your monitor to determine your machine's best display setting. You may also enter the horizontal and vertical synchronization ranges for your monitor. These values can be found in the documentation for your display.

1.1.3 Custom X Configuration

Please choose your login type as "text" because we need post configuration after the installation.

1.2 Configure your hardware device after installing Linux

If you choose to "Skip X Configuration" when install Linux.
Please do following step...

1.2.1 Login as root

1.2.2 Check is there a link point to /usr/X11R6/bin/XFree86 or /usr/X11R6/bin/Xorg

```
# cd /etc/X11
# ls -l X
```

If there is no link named "X", then do following..

```
# ln -s /usr/X11R6/bin/XFree86 X
```

or

```
# ln -s /usr/X11R6/bin/Xorg
```

Note:
If you skip the step of X setup when install Linux, there will be no link named "X" in /etc/X11.

1.2.3 Run "xf86config" or other tools your distribution offered to configure your keyboard, mouse and monitor

```
# xf86config
```

The configuration program will create the file "XF86Conifg" or "xorg.conf" in the /etc/X11 directory.
If there is the file named "XF86Config-4", please remove or rename it.

1.3 Install driver and utility

Please src/ReleaseNote.txt to install this source package.

Configuration:

2.How to Configure XFree86/Xorg

Install tool "vinstall" will automatically do some part of configuration, and below is the detailed manually configuration.

```
# login as root
# Edit /etc/X11/XF86Config, or /etc/X11/xorg.conf
```

2.1 Set driver

In the Section "Device", make sure the driver is "via".

```
Driver "via"
```

for example, if you choose "S3 Savge4 (generic)", please rename

```
Driver "savage" to Driver "via"
```

2.2 Add user define resolution

If necessary, you can add extra resolution which non-define by XFree86 default. In the Section "Monitor", add

following setting before "EndSection"
#Refresh Rate 60Hz
ModeLine "720x480" 26.7 720 736 808 896 480 481 484 497
ModeLine "720x576" 32.7 720 744 816 912 576 577 580 597
ModeLine "800x480" 29.6 800 816 896 992 480 481 484 497
ModeLine "848x480" 31.5 848 864 952 1056 480 481 484 497
ModeLine "856x480" 31.7 856 872 960 1064 480 481 484 497
ModeLine "1024x512" 41.3 1024 1056 1160 1296 512 513 516 531
ModeLine "1280x720" 74.6 1280 1341 1474 1688 720 721 724 746
ModeLine "1280x768" 87.04 1280 1376 1488 1800 768 771 777 806
ModeLine "1280x800" 68.9 1280 1344 1368 1408 800 803 806 816
ModeLine "1360x768" 85.50 1360 1392 1712 1744 768 783 791 807 +HSync +Vsync
ModeLine "1366x768" 85.86 1366 1440 1584 1800 768 769 772 795 -HSync +Vsync
Modeline "1400x1050" 122.61 1400 1488 1640 1880 1050 1051 1054 1087
ModeLine "1920x1080" 172.9 1920 2043 2249 2578 1080 1081 1084 1118
ModeLine "1920x1440" 234.0 1920 2060 2269 2618 1440 1441 1444 1490

2.3 Change the Resolution & BPP

2.3.1 Change BPP

In the Section "Screen",
DefaultDepth xx

Note: xx can be 8, 16, 24, 32

2.3.2. Change Resolution

In the Subsection "Display" Section "Screen",
For example, change to the resolution 800x600 of 32bpp
Subsection "Display"
    Depth 24
    Modes "800x600"
EndSubSection

The supported resolution:
"640x480" "720x480" "720x576" "800x480" "800x600"
"848x480" "856x480" "1024x512" "1024x576" "1024x768"
"1280x720" "1280x768" "1280x800" "1280x960" "1280x1024"
"1360x768" "1366x768" "1400x1050" "1600x1200" "1920x1080"
"1920x1440"

Note: CLE266 not support "1280x720", "1920x1080", and "1920x1440"

2.4 Device Selection

2.4.1 Support Device

UniChrome Family support 4 kinds of device: CRT, TV, LCD, DFP

2.4.2 Active Device

a. Active by default

If there is no manually setting, the driver will accord with console mode active status (nomorlly, it will be CMOS setting) to active device in XWindow.

b. Active manually

The driver will auto detect the device connected or not. If the devices are connected, you can active device through Option in Section "Device" Option "ActiveDevice" "device1[,device2]"

For example,
the CRT and TV are connected and you would like to turn on them in DuoView mode.
The option will be Option "ActiveDevice" "CRT,TV"

2.4.3 Device combination mode

The driver support 3 modes for the active devices, DuoView(Default), SAMM, and Simultaneous. Using S3Utility to set SAMM or DuoView. To set Simultaneous, please add Option "Simultaneous" in Section "Device", and restart the X server. In frame buffer mode, the viafb driver only support DuoView/SAMM.

2.5 LCD support

2.5.1 LCD "Center" mode

Please add following setting in the Section "Device"
Option "Center"

2.5.2 LCD "Expand" mode

Please add following setting in the Section "Device"
#Option "Center"

2.5.3 Supported Panel Size & Mode

a. Panel Size - 640x480

mode:
640x480 -
support
720x480, 720x576, 800x480, 800x600, 848x480, 856x480,
1024x512, 1024x576, 1024x768, 1280x720, 1280x768,
1280x800, 1280x960, 1280x1024, 1360x768, 1366x768,
1400x1050, 1600x1200, 1920x1080, 1920x1440 -
support virtual desktop mode

b. Panel Size - 800x600

mode:
640x480 -
support "Expand" and "Center" mode
800x600 -
support

1024x768, 1280x720, 1280x768, 1280x800, 1280x960,
1280x1024, 1360x768, 1366x768, 1400x1050, 1600x1200,
1920x1080, 1920x1440 -
support virtual desktop mode

c. Panel Size - 1024x768
mode:
640x480, 800x600 -
support "Expand" and "Center" mode

1024x768 -
support

1280x768, 1280x800, 1280x960, 1280x1024, 1360x768,
1366x768, 1400x1050, 1600x1200, 1920x1080, 1920x1440 -
support virtual desktop mode

d. Panel Size - 1280x1024
mode:
1280x768, 1280x960 -
not support

640x480, 800x600, 1024x768 -
support "Expand" and "Center" mode

1280x1024 -
support

1400x1050, 1600x1200, 1920x1080, 1920x1440 -
support virtual desktop mode

e. Panel Size - 1600x1200
mode:
640x480, 800x600, 1024x768, 1280x1024 -
support "Expand" and "Center" mode

1600x1200 -
support

Note: Because of HW limitation, CLE266 not support 1600x1200, 1920x1080, and 1920x1440 in DuoView, Simultaneous or SAMM mode.

1920x1440 -
support virtual desktop mode

2.6 TV support

2.6.1 Select TV Type

You can use following setting in the Section "Device" to select "NTSC" or "PAL"
Option "TVType" "NTSC" (or "PAL")

If you don't set this option in the Section "Device", the driver will use the BIOS setting of TV_type of "Advanced Chipset Features"

2.6.2 Select TV Output Signal

The driver will auto detect the TV output signal is "Composit" or "S-Video". You can also use following setting in the Section "Device" to select "Composite", or "S-Video"
Option "TVOutput" "Composite" (or "S-Video")

If you would like to use "RGB" or "YCbCr" as your TV output signal, Please use following setting in the Section "Device" to select "RGB", or "YCbCr". These output signals are only VT1622.
Option "TVOutput" "RGB" (or "YCbCr")

2.6.3 Vertical Scan

a. For TV Encoder - VT1621

The driver support two kinds of TV vertical scan - under & over. You can use following setting in the Section "Device" to select.
Option "TVVScan" "under" (or "over")

If you don't set this option, the default value is "under".

b. For TV Encoder - VT1622(A)/VT1623/VT1625

The driver support three kinds of TV vertical scan -under, fit, and over. You can use following setting in the Section "Device" to select.
Option "TVVScan" "under" (or "fit" or "over")

If you don't set this option, the default value is "under".

c. For Integrated TV Encoder - VT3324
The driver support adjustable vertical scan using S3Utility.

2.6.4 Enable DotCrawl
You can use following setting in the Section "Device" to enable "DotCrawl".
Option "TVDotCrawl"

2.6.5 Supported TV Encoder & Mode

a. TV Encoder - VT1621
mode:
640x480, 800x600 -
support
others -
support virtual desktop mode

b. TV Encoder - VT1622(A)/VT1623
mode:
640x480, 800x600, 848x480, 1024x768 ,720x480(NTSC Only),
720x576(PAL Only)-
support
others -
support virtual desktop mode

c. TV Encoder - VT1625
640x480, 800x600, 1024x768 ,720x480(NTSC Only),
720x576(PAL Only), 1280x720(720P), 1920x1080(1080I) -
support
others -
support virtual desktop mode

d. Integrated TV Encoder - VT3324
Please see Section: "6. HDTV setting"

2.7 Others device related options
2.7.1 Using non-DDC CRT
Normally CRT has support DDC protocol provides CRT's information to driver. If your CRT hasn't support DDC or drivers don't care CRT limitation. You can add following option.
Option "NoDDCValue"

2.7.2 Using 24-Bit Bus Width Digital Interface

If using 24-Bit LVDS or 24-Bit TMDS.
Option "BusWidth" "24Bit"

If you don't set the option, driver will set 12-Bit Digital Interface by default.

2.7.3 Using Dual Edge Panel.
If using Dual Edge Panel.
Option "LCDDualEdge"

If you don't set the option, driver will set single edge panel by default.

2.8 HQV related options

2.8.1 Select HQV assignment method
You can use the following setting to change HQV feature manual switch by application.
Option "HQVManualSwitch"

If you don't set the option, the HQV feature will be assigned dynamically. This is for CLE266 only.

2.8.2 HQV horizontal & vertical filter mode
You can use the following settings to select different HQV horizontal & vertical filter mode for video H/W overlay. PMN880/PMN800/CN400 only has HQV vertical filter.
Option "HQVFilterManualSelect" # use to indicate driver
to set the HQV filter
from config file.

If you don't set the option, the HQV filter is enabled default in driver. After set HQV filter manual select, there are 4 related options:

```
Option "MpegHQVVFilterMode" "1"
Option "MpegHQVHFilterMode" "1"      # For CLE266 only
Option "CapHQVVFilterMode" "1"
Option "CapHQVHFilterMode" "1"       # For CLE266 only
```

"MpegHQVVFilterMode" is setting HQV vertical filter mode for HW mpeg accelerated AP;

"MpegHQVHFilterMode" is setting HQV horizontal filter mode for HW mpeg accelerated AP;

"CapHQVVFilterMode" is setting HQV vertical filter mode for capture AP;

"CapHQVHFilterMode" is setting HQV horizontal filter mode for capture AP.

For CLE266, there are 5 filter modes for both horizontal & vertical:
0 : disable HQV filter,

1 : (1,1)/2
2 : (1,2,1)/4
3 : (-1,9,9,-1)/16
4 : (-1,4,10,4,-1)/16
5 : (-1,8,18,8,-1)/16
For PMN880/CN400, HQV only has vertical filter there are 2 filter modes :
0 : disable HQV filter,
1 : (4,8,4)/16
2 : (2,12,2)/16

Default is (4,8,4)/16 filter mode if "HQVFilterManualSelect" option not set.

Usage of Linux utility: How to run the Linux utility?

a. You must run X window first.
b. Open the terminal console.
c. Run utility binary file:
s3utility

Note:

4. The priority setting to login X-windows
S3Utility setting(.VIARC, .VIRTVRC ...) > XFree86Config or Xorg.conf setting

5. HDTV setting

5.1 The Support modes for HDTV.
1080I: 640x480, 800x600, 1024x768, 720x480, 720x576, 1920x1080
720P: 640x480, 800x600, 1024x768, 720x480, 720x576, 1280x720

5.2 If CRT+HDTV or CRT+TV, we don't guarantee that CRT would display normally. Because CRT doesn't guarantee to receive TV's timing.