GV-NX88S640H-RH

GeForce™ 8800 GTS Graphics Accelerator

User's Manual

Rev. 101 12MD-NX88S6R-101R



* The WEEE marking on the product indicates this product must not be disposed of with user's other household waste and must be handed over to a designated collection point for the recycling of waste electrical and electronic equipment!!

* The WEEE marking applies only in European Union's member states.

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Notice

Please do not remove any labels on VGA card, this may void the warranty of this VGA card

Due to rapid change in technology, some of the specifications might be out of date before publication of this booklet.

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1. Introduction

1.1. Features

- Powered by NVIDIA® GeForce™ 8800 GTS Graphics Processing Unit (GPU)
- Supports the newest PCI Express x16
- Integrated with 640 MB GDDR3 memory
- Supports DirectX 10
- Supports NVIDIA® SLI™ (Scalable Link Interface) technology (Note)
- Supports AV / S-Video and HDTV output
- Supports D-sub connector (by adapter)
- Supports 2 DVI-I connectors
- Supports HDCP (High-bandwidth Digital Content Protection) technology

1.2. Minimum System Requirements

Hardware

- Intel® Pentium® 4 or AMD Athlon™
- 128 MB of system memory; 2 GB or more for best performance
- Optical drive for software installation (CD-ROM or DVD-ROM drive)
- A power supply with 400-watt is recommended

Operating System

- Windows® XP with Service Pack 2 (SP2)
- Windows® XP Professional x64 Edition
- Windows® 2000

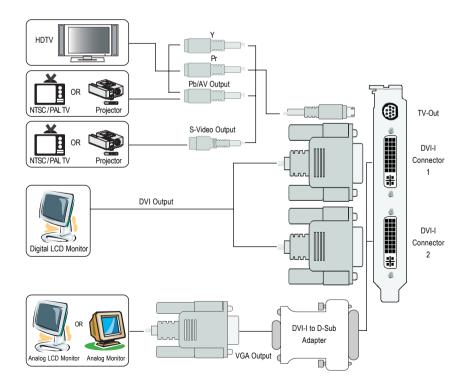
SLI™ Configuration

If you are planning on using this graphics card as part of an SLI™ system, the following is required:

- An SLI™ certified motherboard with two PCI Express x16 slots and correct PCIe chipset driver
- Two GV-NX88S640H-RH
- A power supply with 1000-watt or above is recommended
- An SLI™ bridge connector
- (Note) SLI technology requires a PCI Express motherboard with two x16 physical connectors. Graphics cards working in an SLI configuration must be with the same model name (i.e. GV-NX88S640H-RH) and from the same vendor (i.e. GIGABYTE TECHNOLOGY).

2. Hardware Installation







Expansion cards contain very delicate Integrated Circuit (IC) chips. To protect them against damage from static electricity, you should follow some precautions whenever you work on your computer.

- 1. Turn off your computer and unplug power supply.
- Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.
- 3. Place components on a grounded antistatic pad or on the bag that came with the components whenever the components are separated from the system.

The card contains sensitive electric components, which can be easily damaged by static electricity, so the card should be left in its original packing until it is installed.

Unpacking and installation should be done on a grounded anti-static mat. The operator should be wearing an anti-static wristband, grounded at the same point as the anti-static mat.

Inspect the card carton for obvious damage. Shipping and handling may cause damage to your card. Be sure there are no shipping and handling damages on the card before proceeding.

- ◆ DO NOT APPLY POWER TO YOUR SYSTEM IF IT HAS BEEN DAMAGED ON THE CARD.
- ♠** In order to ensure your graphics card working correctly, please use official Gigabyte BIOS only. Use none official Gigabyte BIOS might cause problem on the graphics card.

2.2. Hardware Installation

Installing Your graphics card.

Now that you have prepared your computer, you are ready to install your graphics accelerator card.

To remove the existing graphics card:

 Power off the computer and monitor, then disconnect the display cable from the back of your computer.



Remove the computer cover. If necessary, consult your computer's manual for help in removing the cover.



3. Remove any existing graphics card from your computer.

Or, if your computer has any on-board graphics capability, you may need to disable it on the motherboard. For more information, please see your computer documentation.



To install your new graphics card:

1. Locate the PCI Express x16 slot. If necessary, remove the metal cover from this slot: then align your graphics card with the PCI Express x16 slot, and press it in firmly until the card is fully seated.



- * Please make sure that the gold edge connectors of the graphics card is securely inserted.
- 2. Replace the screws to fasten the card in place, and replace the computer cover.







After installation, remember to connect the power cable to your graphics card, or the system will not boot. Do not touch the card when it's operating to prevent system instability.

3. Plug the display cable into your graphics card; then turn on the computer and monitor. To connect a flat panel directly to your graphics card, use the DVI-I connector. To connect a VGA monitor to the DVI-I connector, plug the DVI-I to D-sub adapter into the DVI-I connector, then plug the monitor cable into the adapter.



Connect a flat panel



To TV / VCR





Connect a VGA monitor via DVI-I to D-sub adapter

You are now ready to proceed with the installation of the graphics card driver. Please refer to next chapter for detailed instructions.

GIGABYTE Video Adapter for Nvidia Graphics Cards



Connect to the TV-Out port on the graphics card.

(1) Connecting HDTV

Connect your HDTV cables to the video adapter according to the corresponding color.

(Y= Green, Pr= Red, Pb= Blue)



(2) Connecting S-Video

If your TV has a S-Video connection, connect the S-Video cable from your TV to the S-Video Out port on the adapter.



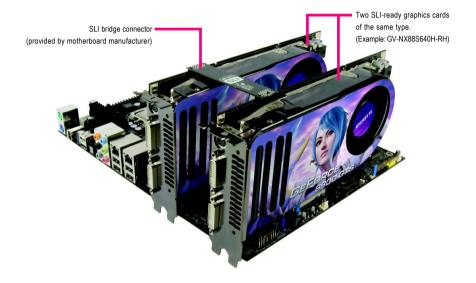
(3) Connecting AV Output

If your TV has a Composite video connection, you can connect the RCA cable from your TV to the AV Out port on the adapter.



How NVIDIA® SLI™ (Scalable Link Interface) technology works:

In an SLI configuration, two SLI-ready graphics cards of the same model and the same manufacturers are connected together via SLI bridge connector in a system that provides two x16 PCI Express slots to scale graphics performance. The picture below shows that two graphics cards are linked in parallel in an SLI configuration.



3. Software Installation

In this manual, we assume that your CD-ROM Drive letter to be Drive D:

The installation of Windows® 2000 / Windows® XP drivers is very simple. When you insert the driver CD into your CD-ROM drive, you can see the AUTORUN window (if it does not show up, run "D:\setup.exe"). Then you can follow the guides to setup your graphics card driver. (Please follow the subsection 3.1.3 "Driver installation" to install the driver for your graphics accelerator.)

3.1. Windows® XP Driver and Utilities Installation

3.1.1. Operating System Requirement

- When loading the graphics card drivers for the system, please make sure your system has installed DirectX 9.0c or later version.
- If you install the graphics card drivers for the motherboard, which consist of SIS or VIA
 chipsets, please install the appropriate driver program for that motherboard. Or please
 contact your motherboard nearest dealer for motherboard driver.

3.1.2. DirectX Installation

Install Microsoft DirectX to enable 3D hardware acceleration support for Windows® 2000 or Windows® XP to achieve better 3D performance.

● Note: For software MPEG support in Windows® 2000 or Windows® XP, you must install DirectX first. Users who run Windows® XP with Service Pack 2 or above do not need to install DirectX separately.



Step 1.

When autorun window show up, click the Install

DirectX 9 item



Step 2. Choose I accept the agreement and click the **Next** button.



Installing the components.



Step 3. Click the **Next** button.



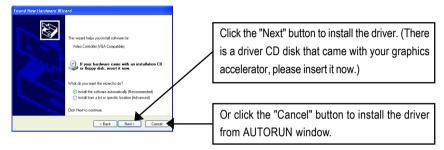
Step 4. Click **Finish** to restart computer. Then the DirectX 9 installation is completed.

3.1.3. Driver Installation

A. New hardware found

After the graphics card is inserted into your computer at the first time, the windows will automatically detect a new hardware in the system and pop out a "New Hardware Found" message. The following is the step-by-step installation guide.

Step 1: Found new hardware wizard: Video controller (VGA Compatible)



Step 2: Found new hardware wizard: Searching and installing

The wizard will search for the driver and install it automatically.





Step 3: Found new hardware wizard: Finish

Click the "Finish" button to finish the installation.



B. Driver installation (Autorun Window)

Insert the driver CD disk into your CD-ROM, and then you can see the AUTORUN window. If it does not show up, please run "D:\setup.exe".



Step 1. When autorun window show up, click **Install Display Driver** item.



Step 2. Click the Next button.



Windows installings the components.



Step 3. Click the **Finish** button to restart computer. Then the driver installation is completed.

3.1.4. Taskbar Icon

After installation of the display drivers, you will find a NVIDIA icon on the taskbar's status area. Click this icon to open the control panel.



Right click the icon.



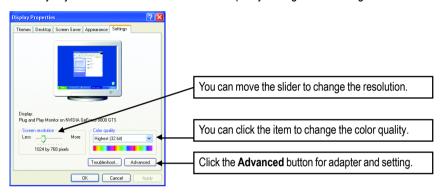
You can adjust the properties of the graphics accelerator from here.

3.1.5. Display Properties Pages

To access Display Properties pages, right-click on Desktop and then select **Properties**. The **Display Properties** dialog box shows the information of display adapter, color, the range of display area, and the refresh rate.

Settings (Resolutions and Color depth for Windows)

You may adjust the screen resolution and color quality settings in this dialog box.



To access more advanced options, click the **Advanced** button.

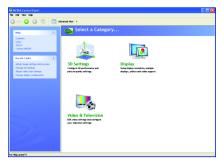
NVIDIA Control Panel

After pressing the **Advanced** button in **Settings**, you'll see the **Plug and Play Monitor and NVIDIA GeForce 8800 GTS Properties** dialog box. Click the **GeForce 8800 GTS** tab. (You can also click the NVIDIA icon on the taskbar and select **Nvidia Control Panel**.)



Access the **GeForce 8800 GTS** tab page to launch the NVIDIA Control Panel

Launch Page All of the NVIDIA control panels have been consolidated into a single application, the NVIDIA Control Panel. Click the Start the NVIDIA Control Panel button to open the NVIDIA Control Panel.



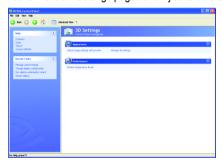
In the NVIDIA Control Panel, select a category to alter specific NVIDIA display settings.

The categories are:

- 3D Settings
- Display
- Video & Television

3D Settings

Tasks in the 3D Settings pages allow you to do the following:

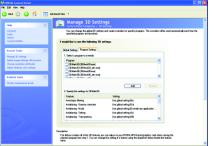


- Change the image and rendering settings of your 3D applications and games that utilize Direct3D and OpenGL technology.
- Override the shipped clocked frequencies of your GPU and GPU memory to increase your GPU performance.
- Assign specific 3D settings to a game so that these settings automatically load when a game is launched.
- Enable NVIDIA Scalable Link Interface (SLI) technology for SLI-capable systems and NVIDIA GPU-based graphics cards.

Appearance



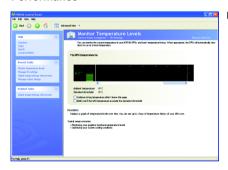
Adjust Image Settings with Preview If you are unfamiliar with 3D technology or not an advanced graphics user, use the Adjust Image Settings with Preview page to preview any changes you make for improved image quality and rendering.



■ Manage 3D Settings

The Manage 3D Settings page enables you to establish default 3D settings to use for all your Direct3D or OpenGL applications and to establish a unique set of 3D settings for a particular game or application.

Performance



■ Monitor Temperature Levels

Use this page if you overclock your GPU and want to see how your GPU heats up over time. You can monitor the current temperature of your NVIDIA GPU and track its temperature history. When appropriate, the GPU will automatically slow down to run at a lower temperature.

Display

A variety of display features enable you to further manipulate and configure your display settings to optimize the use of your displays. Tasks in the Display pages allow you to do the following:



Appearance

- · Run display optimization wizard
- Move CRT screen position
- Change resolution attributes
- Adjust desktop color settings
- Rotate display
- Manage custom timings

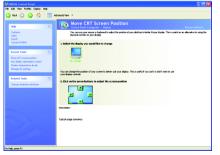
Multiple Displays

- Run multiple display wizard (Note)
- · Change display configuration

Appearance



Run Display Optimization Wizard
 This wizard helps you adjust your displays for optimal viewing and repersentation of colors.



Move CRT Screen Position

You can use your mouse (by clicking on the arrow keys on this page) or the arrow keys on your keyboard to adjust the position of your desktop to better fit your display. This is a useful alternative to using the controls (buttons) on your actual physical display.

(Note) This item will show up when you connect two monitors.



■ Change Resolution Attributes

Using the Change Resolution controls, you can change the color setting, reduce screen flickering, or adjust the amount of information appearing on your display.



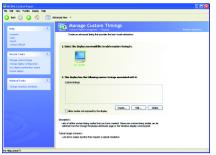
■ Adjust Desktop Color Settings

Use this page to set the contrast, sharpness, and color depth (Digital Vibrance) of the images on your desktop. These changes will not affect any video playback. To change video color settings, go to Adjust Video Color Settings under the Video and TV section from the Start page.



■ Rotate Display

The NVIDIA Rotate features enable you to change the orientation of your desktop to portrait, landscape, and inverted modes. This is useful if you have rotated your physical display and need to rotate the desktop to match the orientation of your display.



■ Manage Custom Timings

If you are an advanced user, you can create custom timing modes with the width, height, bit-color depth, and the refresh rate etc. The Advanced Timing page enables you to adjust timings for your graphics card in order to support a variety of different display timings for ultimate flexibility for analog CRT and DVI connections. You can use the advanced Change Resolution Attributes page to view custom display modes you have saved in the Create Custom Timings page.

Multiple Displays



Run Multiple Display Wizard (Note)
 This wizard will help you enable and customize

your multi-display setup.



■ Change Display Configuration

NVIDIA nView technology enables you to view your desktop in one of several multi-display modes to make the best use of the displays (monitors) that are connected to your computer.

(Note) This item will show up when you connect two monitors.

Dual-Monitor Setup (Note):

You can set the display to output from two monitors on the Change Display Configuration page.



Select your preferred nView display modes here.

- only use one display (Single)
- The same on both display (Clone)
- As one large horizontal desktop (Horizontal span)
- As one large vertical desktop (Vertical span)
- · Configured independently from each other (Dualview)

(1) The same on both display (Clone)

Clone mode indicates that both displays in the display pair show images of the same desktop.



Clone Mode

(2) As one large horizontal desktop (Horizontal span)

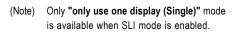
Horizontal Span mode indicates that both displays in the display pair function as one wide virtual desktop. The width of each display is half the width of the total virtual desktop width.



Horizontal Span Mode

(3) As one large vertical desktop (Vertical span)

Vertical Span mode indicates that both displays in the display pair function as one tall virtual desktop. The height of each display is half the height of the total virtual desktop height.





Vertical Span Mode

(4) Configured independently from each other (Dualview)

Dualview mode indicates that both displays in the display pair function as one virtual desktop. Unlike Horizontal Span or Vertical Span mode, Dualview treats each display as a separate device. This means that the taskbar will not be stretched across displays and 3D applications are not accelerated as efficiently as when the application spans displays.

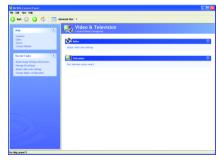
Display	Model	GV-NX88S640H-RH
Matrix	CRT+TV	Yes
	CRT+DVI	Yes
	DVI+TV	Yes
	DVI+TV+CRT	No
	DVI +DVI	Yes
	CRT+CRT	Yes



Dualview Mode

Video & Television

Video and television features are similar to those for analog and digital displays and include features specific to television and HDTV (high definition television) technology for optimal viewing. Tasks in the Video & Television pages allow you to do the following:



Video



- Adjust your television picture quality and video color settings for the best possible viewing in its environment.
- Change the position and size of the desktop/ video to best fit your television or HDTV (high definition television) screen.
- Change the signal format to use for your standard television or HDTV as well as change country-specific signal or the HDTV format.
- Enable full screen video mirroring.
- Adjust Video Color Settings

Use the controls on this page to fine tune the color settings for video content on your display. Select one of the test images to monitor your changes. For best results, play a video while you make adjustment to view the changes as they happen.

Television(Note)

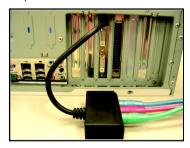


■ Run Television Setup Wizard^(Note)

The wizard will guide you through the steps to configure your television for use with your computer.

HDTV Setup

Follow the steps below to connect an HDTV to your system using the included component video adapter.



Step 1:

Connect the HDTV component cable to the adapter according to the corresponding color. (Y= Green, Pr= Red, Pb= Blue). Connect the TV Out cable from the adapter to the TV Out port on your graphics card.



Step 2:

Go to NVIDIA Control Panel. Select the Run television setup wizard (Note) item in the Video & Television page.



Step 3:

When the Television Setup Wizard appears, click **Next**.

(Note) This item will show up when you connect a television.



Step 4: Select Component in the Connector Type screen.



Click the **Preview** button to preview the selected settings. Then click **Next**.



Step 5: Select a definition type for your HDTV (depending on the specifications of your HDTV) and click **Next**.



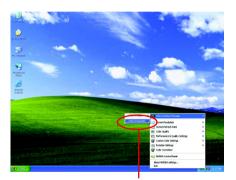
Step 7: Click **Finish** to apply the new television settings.

3.1.6. nView Properties Pages

nView is a set of desktop tools designed to help you be more productive when using your graphics card. With **nView** you can set up multiple desktops to work with your applications. Multiple desktops give you extra desktop areas on which to run your applications so you won't have to crowd several open application windows on one desktop.

Enable the nView Desktop Manager features:

Click the NVIDIA icon on the taskbar and select **nView Properties** under **nView Destop Manager**. Click the **Enable** button to turn on all the nView Desktop Manager features.



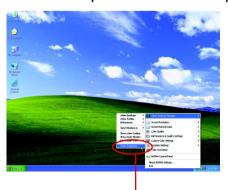
Step 1: Click nView Properties.



Step 2: Click Enable.

Access nView properties page:

To access the **nView** properties page, you can click the NVIDIA icon **□** on the taskbar and select **nView Properties** under **nView Destop Manager**.



Click the item to start configuringing nView features.

nView Desktop Management properties



■ This tab contains information about the nView Desktop Manager.

The setup wizard can also be accessed from this tab.

nView Profiles properties



This tab contains a record of all nView display settings for easy software setup.

nView Windows properties



This tab allows you to control window and dialog box placement when using multiple monitors.

nView Applications properties



■ This tab allows you to control nView settings depending different applications.

nView Desktops properties



■ This tab allows you to create up to 32 unique desktops.

nView User Interface properties



■ This tab allows for customization of the nView user interface.

nView Effects properties



This tab provides special windows effects that you can apply to your applications.

nView Zoom properties



This tab provides dynamic zoom functionality on the desktop. Also enables full screen video playback via the video mirroring control button.

nView Hot Keys properties



This tab lets you perform various actions with shortcut keys or key combinations.

nView Mouse properties



■ This tab can modify and extend mouse behavior with kinematic actions.

nView Tools properties



■ This tab can improve nView functionality for mobile and desktop users.

3.2. Windows® 2000 Driver Installation

With Windows running on your computer, you need to install the graphics card driver to take advantage of the higher performance, resolutions, and special graphics features of the graphics card. To ensure you install the latest driver, insert the Installation CD that shipped with your graphics card.

To install the graphics card driver for Windows® 2000, please insert the Installation CD. Then the AUTORUN window will show up. Click **Install Display Driver** item, and follow the wizard to install the driver.

If Windows® does not show the CD automatically, please run following steps:

- 1. Click the Start button on the control bar.
- 2. Select Run.
- 3. Type the following: D:\SETUP.exe
 (If D is not your CD-ROM drive, substitute D with the correct drive letter.)
- 4. Click "OK".
- 5. Click on "Install Display Drivers" to begin the Installation Wizard.
- 6. Click "Next".
- 7. Click "Yes" to the license agreement.
- 8. Follow the Wizard's on-screen instructions to complete the installation.



Please make sure the Windows® 2000 have installed Windows® 2000 Service Pack (or later) before installing the graphics accelerator driver.

4. Troubleshooting Tips

The following troubleshooting tips may help if you experience problems. Contact your dealer or GBT for more advanced troubleshooting information.

- Check that the card is seated properly in the PCI Express x16 slot.
- Ensure that the display cable is securely fastened to the card's display connector.
- Make sure that the monitor and computer are plugged in and receiving power.
- If necessary, disable any built-in graphics capabilities on your motherboard. For more information, consult your computer's manual or manufacturer.
 (NOTE: Some manufacturers do not allow the built-in graphics to be disabled or to become the secondary display.)
- Make sure you selected the appropriate display device and graphics card when you installed the graphics driver.
- Restart your computer.
 Press the F8 key on your keyboard after system starts up. When the Windows Advanced Options Menu appears, select Safe Mode and press Enter.
 After getting into Safe Mode, in Device Manager check whether the driver for the graphics card is correct.
- For more assistance, use the Troubleshooting Guide located in the Windows[®]
 Help or contact your computer manufacturer.

If necessary, adjust your monitor's setting by monitor's adjust panel to make the screen looks focused, crisp, and sharp. (Please refer to the monitor's manual.)

5. Appendix

5.1. How to Reflash the BIOS in MS-DOS Mode

- Extract the downloaded Zip file to your hard disk(s) or floppy disk. This procedure assumes drive
 A.
- 2. Restart the computer in MS-DOS mode. (For Windows 2000/XP, you need a startup disk to restart the computer in MS-DOS mode.)
- 3. Change the command prompt to A:\>.
- 4. To back up the current BIOS, at the A:\> prompt, type [BIOS flash utility name] -s [BIOS file name] (example: gvf11 -s X88S640H.F1) and press Enter.
- 5. To flash BIOS, at the A:\> prompt, type [BIOS flash utility name] -p [BIOS file name] (example: gvf11 -p X88S640H.F2) and press Enter.
- 6. Wait until it's done, then restart your computer.

5.2. Resolutions and Color Depth Table (In Windows® XP)

GeForce 8800 GTS Single Display Standard Modes

Display	Refresh	Color Depth (bpp)		
Screen	Rate	8bpp(256 color)	16bpp(65K color)	32bpp(16.7M)
Resolution	(Hz)	Standard mode	High mode	True mode
320 x 200	60~75	✓	✓	✓
320 x 240	60~75	✓	✓	✓
400 x 300	60~75	✓	✓	✓
480 x 360	60~75	✓	✓	✓
512 x 384	60~75	✓	✓	✓
640 x 400 (16:1		✓	✓	✓
640 x 480	60~240	✓	✓	✓
720 x 480	60	✓	✓	✓
720 x 576	50~60	✓	✓	✓
800 x 600	60~240	✓	✓	✓
848 x 480	60~240	✓	✓	✓
960 x 600 (16:1	•	✓	✓	✓
1024 x 768	60~200	✓	✓	✓
	240	✓	✓	Χ
1088 x 612 (16:	9) 60~200	✓	✓	✓
	240	✓	✓	Χ
1152 x 864	60~170	✓	✓	✓
	200	✓	✓	Χ
1280 x 720 (16:9) 60~150		✓	✓	✓
	170	✓	✓	Χ
1280 x 768	60~150	✓	✓	✓
	170	✓	✓	Χ
1280 x 960	60~150	✓	✓	√
	170	✓	✓	X
1280 x 1024	60~150	✓	√	√
	170	✓	✓	Х
1360 x 768	60~150	√	√	
	170	✓	✓	Χ
1600 x 900 (16:			<u> </u>	
1000 X 500 (10.	140~150	·	, ✓	X
1600 x 1024	60~100		<u> </u>	
1000 X 1024		∨ ✓	∨ ✓	•
	120	ν	ν	Х

To be continued...

Display	Refresh	Color Depth (bpp)		
Screen	Rate	8bpp(256 color)	16bpp (65K color)	32bpp (16.7M)
Resolution	(Hz)	Standard mode	High mode	True mode
1600 x 1200	60~100	✓	✓	✓
	120	\checkmark	✓	Χ
1920 x 1080 (16:9) 30~85	✓	✓	✓	
	100	✓	✓	Χ
1920 x 1200 (16:	10) 60~85	✓	✓	✓
	100	✓	✓	Χ
1920 x 1440	60~85	✓	✓	✓
2048 x 1536	60~85	✓	✓	✓
2560 x 1600 (Dual-Link)	60	✓	✓	✓

^{*} This table is for reference only. The actual resolutions supported depend on the monitor you use.