

GAINWARD

Quick Start

- English -

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ABOUT THE QUICK START MANUAL

This manual is designed to assist a computer novice as well as an experienced computer user through an easy and uncomplicated installation of a Gainward graphics product.

Should you need a manual in a language other than English, we have made soft copies available for you in different languages in HTML file format on your Display Driver Installation CD-ROM in the back of this manual.

There are two ways to access these manuals:

- Use EXPERTool™ after you have installed the display driver software. From the EXPERTool™ menu, select Manual. Your Internet browser will open and display the manual, or
- Insert the Display Driver Installation CD, select the "MANUALS" folder, then the folder of your language, i.e. "ENGLISH", and click on the file called "GAINWARD". This will open your Internet browser and display the manual

About The Gainward Driver CD-ROM

All Gainward products ship with a CD-ROM, which contains the latest drivers for your particular product. For updated information about a specific product that may not be included in this manual, please see the README.TXT file in the root directory on your Gainward Display Driver Installation CD. This CD-ROM is located in the back of this manual. In addition, we have placed a variety of third-party utilities on a separate Utilities CD-ROM as another way of saying "thank you!" for being a valued Gainward customer.

An Important Installation Note

Your new Gainward display adapter is designed to work in an AGP or PCI bus slot, in a computer with any Intel Pentium or compatible processor (AMD, Cyrix, VIA, etc.). It will not operate in a PowerPC, Macintosh, in an ISA, or a VL-Bus slot.

If Your Product Needs Service

If your Gainward product is defective, please contact Gainward or your reseller. All product returns must be accompanied with a "Return Material Authorization number" (RMA) and a problem report. Please be sure to read the Limited Warranty chapter.

INSTALLING YOUR NEW GAINWARD DISPLAY ADAPTER

We went to great efforts in making the installation process for any Gainward graphics adapter as easy as possible. There are three major tasks you need to complete so that you can fully enjoy your new Gainward display adapter: prepare your system, install the new display adapter, and install the display drivers and utilities. These three steps will be discussed in full detail below:

Step 1: Prepare Your Computer!

If you are using Windows NT 4.0 Server or Workstation, it is necessary to have Service Pack 3 or later installed. If you have not already installed the Service Pack, it is time to do so now. You can obtain the Service Pack from one of Microsoft's many support web sites free of charge. Aside from this, no special preparation is necessary at this time, because all versions of Windows NT are capable of booting in Standard VGA mode by selecting this option from the boot menu.

If you are using Windows XP, no preparation is necessary. Proceed with Step 2!

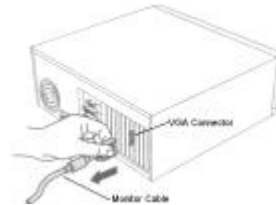
If you are using Windows 98, Windows 98SE, Windows ME or any of the Windows 2000 versions, you must start your computer and boot the operating system. Once Windows is loaded, open the Display Properties panel by right-clicking on the desktop.

1. Click on the "Properties" field.
2. Click on the "Settings" tab and then on the "Advanced..." button. A new window with even more tabs will open.
3. Click on the "Adapter" tab and then on the "Change..." button.
4. Choose "Specify the location of the driver" by clicking on the appropriate radio button, and then click on the "Next" button.
5. Choose "Display a list of all the drivers in a specific location..." by clicking on the appropriate radio button, and then click on the "Next" button.
6. Choose "Show all hardware" by clicking on the appropriate radio button, and then click on the "Next" button.
7. From the list "Standard Display Types", select "Standard PCI Display Adapter (VGA)" and click on the "Next" button. Please follow the on-screen instruction. Do not reboot your system at this time. Instead, end your Windows session by using the "Shut down" option from the "Start" menu.
8. Turn off your computer. The system preparation is finished.

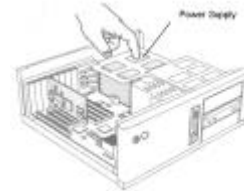
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Step 2: Install the New Graphics Hardware

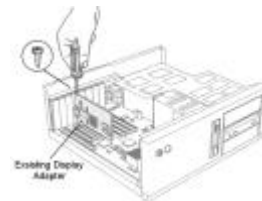
1. Turn off your monitor and disconnect the VGA cable from your old VGA display adapter.
Remove the necessary screws from the PC's case, and remove its cover. Consult your PC's manual to help you do this.



2. Touch the metal case of your PC's power supply to ground yourself. This will discharge all static electricity. It is very important to do this, because electronic components such as those inside your computer and those on peripherals interface cards are very sensitive, and can be destroyed by an electric discharge.

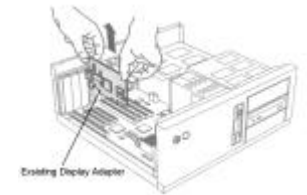


3. Remove the screw on the mounting bracket of your old VGA display adapter card.

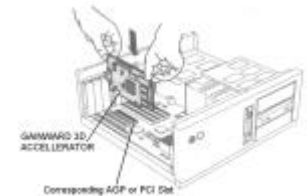


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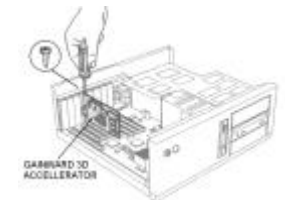
4. Remove your old VGA display adapter card by pulling it gently, in a straight, upward manner.



5. Remove your new Gainward display adapter from the anti static bag. If your Gainward card has a fan, please make sure not to touch it!
Touch the metal case of your PC's power supply again to ground yourself. This will discharge all static electricity.
Insert the new Gainward card in the appropriate AGP or PCI slot, making sure that it is firmly seated. Be gentle when pushing it straight into the slot. Do not use brute force!



6. Reattach the screw on the mounting bracket of your Gainward card. This is very important, because when the monitor cable is attached later, the display adapter card may come loose, and your computer will not operate properly any longer.



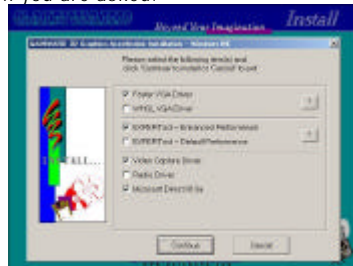
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7. Replace the cover on your PC, and tighten its screws. Connect the monitor cable to your new Gainward display adapter card. Now, the hardware installation is completed



Step 3: Software Installation

1. Turn your computer and monitor on and boot the operating system. If you are using Windows NT 4.0 Server or Workstation, please select "Boot using Standard VGA (640 x 480)" from the boot menu, and proceed to step 3 of the software installation.
2. If you are using a Plug&Play operating system, such as Windows 98, Windows 98SE, Windows ME, Windows XP or Windows 2000, the operating system will attempt to detect your new Gainward display adapter, and then try to install the best drivers that it can find for it. Since these drivers are usually much older, and very generic, you will not be able to benefit from many of the adapter's advanced features and enhanced performance. It is therefore recommended to manually select a driver. Please select "Standard PCI Display Adapter (VGA)" as your display adapter, and reboot the system when you are asked.
3. When your operating system is running in a "Standard PCI Display Adapter (VGA)" driver, you may insert the Gainward Driver Installation CD. This CD-ROM has an auto-start feature. The installation software will detect the version of your operating system, the installed Gainward product, and it will then install all necessary drivers and utility programs. Simply sit back and relax, because the software installation may take a few moments.



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4. During the process of installation, you will be asked if you would like to install utilities such as EXPERTool™ and DirectX. It is highly recommended to install both. This will allow you to take full advantage of all advanced features that come with your new Gainward display adapter
5. When the installation process is completed, you will be asked to reboot computer. Congratulations! You have just installed your Gainward display adapter!

Important Note: During our display driver installation process, a legacy AGP driver may be installed on newer systems with an AGP bus. As a legacy driver, it will be compatible with every mainboard and chip set known to date. However, because new chip sets and motherboards are constantly being developed, this AGP driver might not support all the latest features and benefits of your motherboard. If you have an AGP 4x based motherboard with a VIA chip set for instance, you may need to re-install the 4-in-1 drivers for your motherboard to take full advantage of AGP 4x and the high performance of your Gainward display adapter. Otherwise, your system may operate with AGP 2x, and graphics performance is reduced dramatically.

About DirectX

The Gainward CD-ROM includes Microsoft's DirectX. This is a set of APIs that make games and multimedia applications run faster on Windows based computers. DirectX is a thin software layer that provides direct access to hardware services. This technology takes full advantage of available hardware accelerators and emulates accelerator services when such accelerators are not present. DirectX components include: DirectDraw (provides 2-D graphics services), Direct3D (provides 3-D graphics services), DirectSound (provides sound-mixing and playback services), DirectPlay (provides multiplayer game connectivity over the Internet), and DirectInput (provides services for joysticks and other input devices).

Gainward has included the most recent version of DirectX on your Display Driver CD ROM. You may choose to install DirectX automatically during initial display driver installation (recommended), or at any later time.

To install DirectX manually, do the following: In Windows Explorer, change to your CD ROM drive. Change to the "DirectX" folder. If you are using Windows 2000, run "Setup2k.exe". If you are running Windows 98, Windows 98SE or Windows ME, run "Setup9x.exe". If you are running Windows XP, run "SetupXP.exe". Follow the on-screen instructions. Once the installation is complete, you must reboot your computer.

From time to time, Microsoft will update DirectX and other software components. Choose "Windows Update" from the "Start" menu. This will connect you directly with Microsoft's update web site on the Internet and make all necessary updates available to you, by analyzing which software is already installed on your system.

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USING EXPERTool™

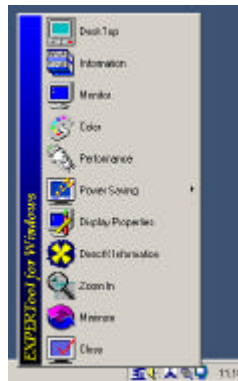
What is EXPERTool™?

EXPERTool™ is a display control and desktop enhancement utility program for Windows 98, Windows 98SE, Windows ME, Windows XP, Windows NT and Windows 2000, which only works correctly in conjunction with your new Gainward display adapter.

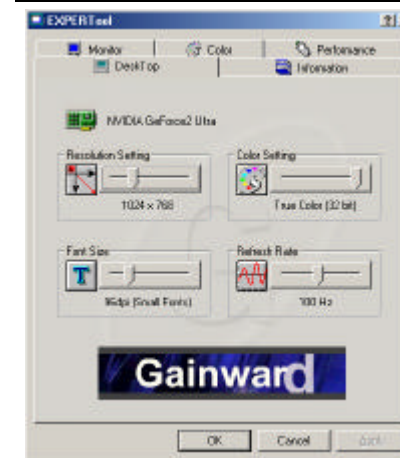
Most likely, you chose to install EXPERTool™ during our initial display driver installation process. In this case the EXPERTool™ icon is located in the “System Tray” of your Windows’ task bar (in the lower right corner of your Windows desktop).



If you have not yet installed EXPERTool™, you can do so now by running our Display Driver Installation CD. Unselect any of the items you already installed previously, and leave “EXPERTool Desktop Management Utility” checked. Follow the on -screen instructions. When the installation process is completed, please reboot your computer, so that all changes can take effect. To launch EXPERTool™, simply click on the small monitor – icon in the System Tray, and a pop-up menu will appear on your screen, similar to the one when you click on the “Start” – button.

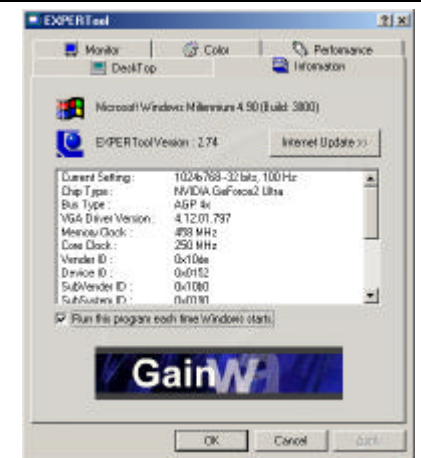


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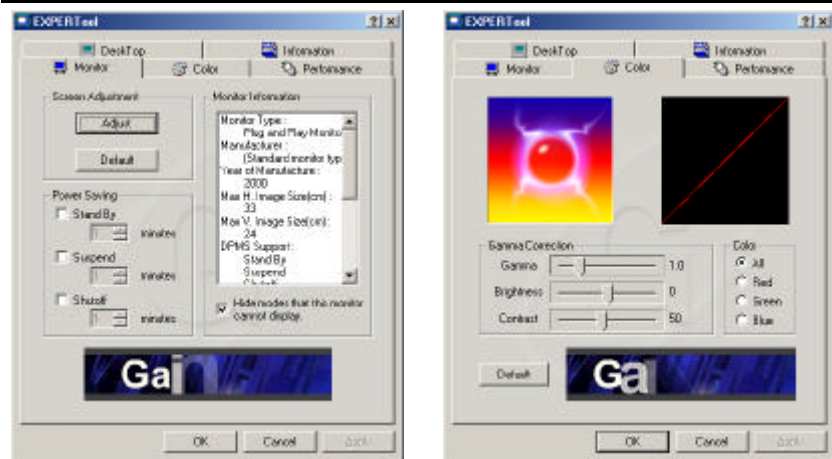
DeskTop works much like the “Settings” of Windows’ “Display Properties” , but much better. The difference is that our version is easier to understand and easier to use, because everything you need is on one single, well organized page!

Use Desktop to change your display’ s resolution, the color depth, the Windows’ system font size and the refresh rate to be used with your monitor.



Information gives you a very detailed status report on your Gainward card’ s current operating environment, such as the model, current display settings, current software and driver versions, etc. This could be helpful in the event you run into a problem and need to talk to technical support. You can update your display drivers by making use of our “Smart Update” feature via the Internet! You also have an option to enable or disable EXPERTool™ at Windows’ startup.

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With the **Monitor** settings page, you can adjust the position of your Windows desktop on your monitor. This is useful because some older monitors may not support saving the screen positioning correctly. You can set up power management properties for your monitor, and view all supported resolutions, refresh rates and other supported features of your monitor.

The **Color** adjustment settings page is an alternative method to adjust brightness, contrast and gamma. You can even change color settings based on color channel, sometimes most monitors do not support on their own. This is extremely useful to people, who deal with graphics design, and need to match their monitor's color output with that of a proofprint. You can always undo your personal color settings by clicking on the "Default" button.

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With the **Performance** settings page, you can change the speed with which your Gainward display adapter operates. You can change both, the core clock and / or the memory clock settings independently. The higher the clock settings, the faster your graphics card will work.

Click on "Default Performance Settings" to reset the adapter to NVIDIA's reference settings. This is like a "safe mode" and may be used to analyze if a graphics problem is related to the display adapter (hardware), or, if it is a mere software problem.

If you purchased a "Golden Sample" version of your Gainward display adapter, you will find a second button, which will allow you to set the board to "Enhanced Performance Settings". These settings are much higher, and they are **GUARANTEED TO WORK IN ANY SYSTEM WITH ANY "GOLDEN SAMPLE" DISPLAY ADAPTER FROM GAINWARD!**

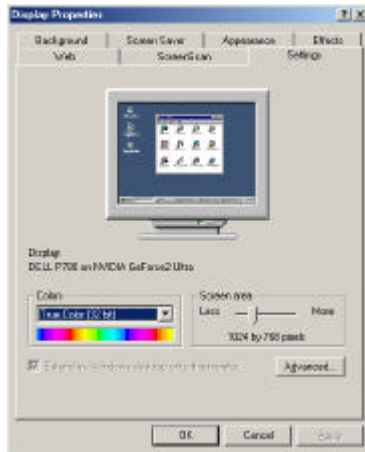
A "Golden Sample" board is very special: Such a board went through a set of special, very tough and extremely tedious tests. Only a board that passed these tests is allowed to become a "Golden Sample" and is enabled for "Enhanced Performance Settings". Click on "Enhanced Performance Settings" and see the improvement in your game play!

You can exceed the enhanced performance settings, by changing the clock settings manually using the slider bars. Do take care while doing this: Change the speed in small increments only, i.e. in increments of 5 MHz. Then check if your games are still running correctly. If you start seeing garbage on your screen, or your 3D graphics appear in a "broken" fashion, you exceeded the board's capabilities, and you must revert to your previous setting. If your computer crashes, the previous settings will be activated upon you next start of Windows.

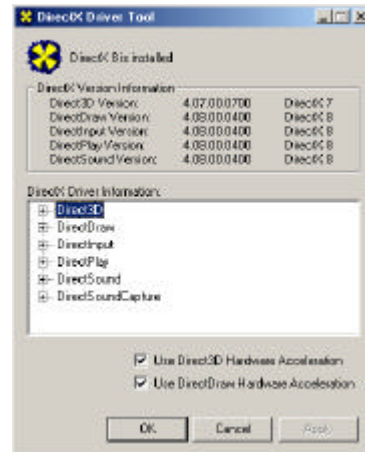
IMPORTANT: Please note that Gainward will not warrant the display adapter's correct function beyond "Enhanced Performance Settings"!

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Select **Power Saving** to put your monitor in Stand-by mode, Suspend mode, or even shut your monitor off. You can restart your monitor by moving your mouse, or by pressing a key on your keyboard.



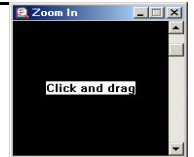
When you select **Display Properties**, EXPERTool™ will bring you to Windows' own display properties pages, where you can make additional settings such as changing the background picture, changing the screen saver and some power management features, change the appearance of Windows' desktop, etc. Read more about Display Properties in your Windows User Manual!



Use **DirectX Information** to determine the version of DirectX that is currently installed on your system. You can examine how DirectX interfaces with your multimedia and graphics hardware, and enable or disable DirectX hardware acceleration. (But this is not recommended, because it would decrease your system's performance while running graphics intensive software, such as games or video.)

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Zoom In is designed to magnify a portion of your Windows desktop dynamically, up to 32 times of its original size. This is useful for graphics designers who need to work with high level of detail. Simply click into your "Zoom In" window, hold down the left mouse button, and drag the transparent tile to the position on your desktop, that you need enlarged. You can set the magnification level by clicking and moving the scroll bar. Of course, you can resize and reposition the Zoom In window to you liking.



Click on **Minimize** to hide EXPERTool™

Click on **Close** to stop using EXPERTool™. EXPERTool™ will be removed from Windows' System Tray, and reappear the next time you start your Windows operating system.

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USING TWO MONITORS WITH YOUR GAINWARD TWINVIEW CARD

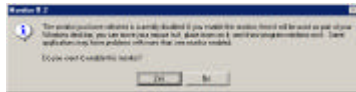
Your Gainward TwinView display adapter has the ability to run two VGA monitors simultaneously, provided that both connected VGA monitors are DDC2b compliant. All new monitors are DDC2 compliant. If you have an older monitor, please take care to check that monitor's technical documentation first.

The TwinView feature is implemented in two ways:

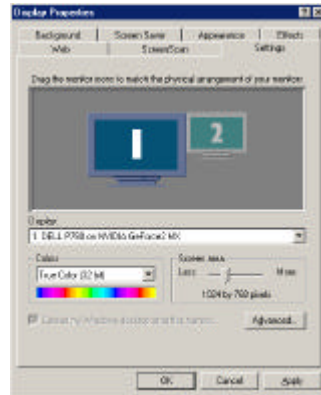
1. The **"Extended Desktop"** mode: In this mode, the Windows desktop is shared between a primary display and a secondary display, enlarging the usable desktop area. Both, resolution and color depth, can be set independently from one other.
2. The **"Cloned Desktop"** mode: In this mode, the original Windows desktop from your primary VGA display is replicated onto the secondary VGA display. The secondary display may have a resolution equal or less than that of the primary display. If the resolution on the secondary display is less than its original, a panning mode can be enabled to allow full access to the entire desktop on the secondary display.

Extended Desktop

To enable the Extended Desktop function, open your Display Properties Settings page, and double-click on the second monitor. A pop-up screen will appear on your desktop, advising you that you are about to activate the second monitor.

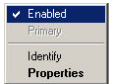


Confirm this by clicking on the "Yes" button. To have your changes take effect, click on "Apply". Your secondary monitor will now come "alive" and it will display your Windows background. If you click on Monitor 2 in your Display Properties Settings, you can change both resolution and color depth independently from your primary monitor.



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To deactivate your extended desktop, open your Display Properties Settings, right-click into the second monitor and select the checked "Enabled" option. Click on "Apply" to have your changes take effect. Your secondary monitor will go dark again, and Windows will be back in its normal, standard desktop mode.



If you have a TV connected to your Gainward TwinView display adapter, you can redirect your extended desktop to a television. Open your Display Properties Settings page, and click on "Advanced...". Click on the "Output Device" tab. Click on the "TV" radio button. Now select the broadcast format of your television by selecting the country. Finally, select the cable you use for connecting your VGA card with your television set, and then click on "Apply". Your TV will display your extended Windows desktop instead of your second VGA monitor.

Cloned Desktop

To enable the Cloned Desktop function, open your Display Properties Settings page, and click on "Advanced...". Click on the "TwinView" tab. Click on the "Clone" radio button and then on "Apply" to have your changes take effect. Your secondary VGA display will now come "alive" and display an exact replica of your primary VGA display. By default, the panning mode is enabled. This is a useful feature, if your secondary (clone) display has a lower resolution than the primary display. This way you can access every item on your Windows desktop by moving your mouse in the respective areas.

If you need your secondary monitor to be "stationary", you can click on "Disable auto-panning on clone device (viewport lock)". This is useful if you need a zoomed preview screen.

To disable TwinView, simply click on the "Standard (TwinView disabled)" radio button, and then on the "Apply" button. Your secondary monitor will go dark again, and Windows will be back in its normal, single desktop mode. If you have a TV connected to your Gainward TwinView display adapter, you can redirect your cloned desktop to a television set. Open your Display Properties Settings page, and click on "Advanced...". Click on the "Output Device" tab. Click on the "TV" radio button. Now select the broadcast format of your television by selecting the country. Finally, select the cable you are use for connecting your VGA card with your television set, and then click on "Apply". Your TV will display your cloned Windows desktop instead of your secondary VGA monitor.



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USING TV-OUT WITH YOUR GAINWARD DISPLAY ADAPTER

Most Gainward display adapters ship with a TV-Out connector, or a VIVO (Video In / Video Out) connector. This feature is useful for business presentations, or, if you integrate your computer as a part of your home entertainment system.

To use your television with a Gainward display adapter, connect your television either via an S-Video cable, or a composite (coaxial) video cable to your Gainward card. Your Gainward card ships with an appropriate S-Video to Composite (F-BAS) converter cable or a VIVO cable whip.

If your VGA card does not have the VIVO feature, and you are using a composite video cable, connect the composite video cable via the 'S-Video to Composite converter cable' to your Gainward card. If your VGA card does not have the VIVO feature and you are using an S-Video cable, you can connect your television directly to your Gainward card.

If you have a Gainward card with the VIVO feature, plug the VIVO cable whip into your display adapter. Notice the two yellow connectors on the other end of the cable whip: These are for TV-Out. Connect either S-Video or composite video cable to the matching yellow connector on the cable whip.



Composite to S-Video converter cable



VIVO cable whip

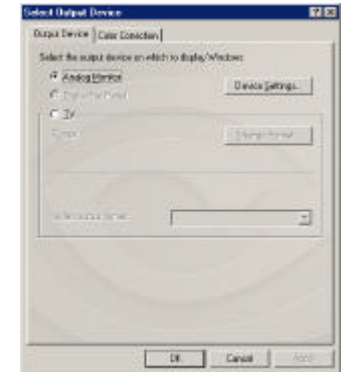
Turn on your computer. Plug&Play will now attempt to detect the presence of your television set, and pass the information on to Windows. When Windows is finished loading, right click on your desktop to open "Display Properties". Click on the "Settings" tab, and then on the "Advanced..." button. In the Advance Display Property settings, click on the "Output Device" tab. Click in the "TV" radio button. You should be seeing a picture of some sort on your TV set. Now click on the "Change Format" button. This will allow you to set the television standard of your country. By default, this is set to USA (NTSC). If your picture appears in black and white, go to the lower section of this screen, and click on the "Format" button. Here you can select the cable you are using that connects your computer with your television. When you are done making your settings, click on "Apply". Your television will now display Window's desktop instead of your VGA monitor, while your VGA monitor will turn off.

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If you have a TwinView adapter, you have more options to use the TV-Out feature. Here, your television will behave exactly like a secondary VGA Monitor.

To use the **Primary Desktop** for output to television, open your "Display Properties" page and click on the "Settings" tab. Click on the "Advanced" button, and then on the "TwinView" tab. Click on the "Output Device" button and then "Select Device". Select "TV" and make the necessary settings. Click on "Apply" to have your settings take effect. This is the only TV-mode that will support "Overlay" video.

To use Windows' **Extended Desktop** with your television set, open your Display Properties Settings page, and click on the second monitor. A pop-up screen will appear on your desktop, advising you that you are about to activate the second monitor.



Confirm this by clicking on the "Yes" button. To have your changes take effect, click on "Apply". Now click on the "Advanced" button and select the "Output Device" tab. Select "TV" and make the necessary settings. Click on "Apply" to have these settings take effect. Overlay Video will not be supported on your TV, but on your primary VGA monitor.

To use Windows' **TwinView** feature with your television set, open your "Display Properties" page and click on the "Settings" tab. Click on the "Advanced..." button, and then on the "TwinView" tab. Click on the "Clone" radio button and then on the "Output Device" button to select an output device. Select "TV" and make the necessary settings. Click on "Apply" to have your new settings take effect. "Overlay" video, will not be supported on either display in TwinView mode.

USING VIDEO IN WITH YOUR GAINWARD DISPLAY ADAPTER

Your Gainward VIVO Card features a Video-In interface, which can be used for capturing live video from any given analog video source. This can be used for video conferencing, or, if you would like to record a video clip to your hard disk. The latter can then be edited at a later time.

You may use either an S-Video or a composite video cable to connect your video source to your Gainward display adapter. The VIVO cable whip has provisions for both cable formats. The single end of the cable whip must be firmly seated in the matching connector of your Gainward card.

When you start your capture program, you must first of all select a capture device. In the "Device" menu, select "NVIDIA WDM Video Capture (Universal)". This will tell Windows to "turn on" the video-in interface on your Gainward card.

The next thing you need to determine is, what kind of video standard your video source produces. There are two popular video standards: PAL and NTSC. PAL can be found throughout Europe, Australia, Africa and most parts of Asia. The NTSC standard is more popular in the Americas, Japan and Taiwan.

If you are not quite sure what video standard your source device is set to, try to activate the preview mode in your capture software. This will help you make the right settings. Usually, the Video standard is set in a menu called "Video Capture Pin."

The "Video Capture Pin" also lets you adjust color, hue, contrast and brightness of your live picture. You will find these settings on a tab called "Video Proc. Amp".

In a menu called "Video Crossbar", you can set the capture frame rate, the method of compression, and the resolution in which you wish to capture your video. 30 fps (frames per second) is good for NTSC, while PAL needs not more than 25 fps. The capture method is set to "UYVY" and can't be changed. The capture resolution can be set anywhere from 160x120 up to 720x576 pixels. Please keep in mind that the higher the resolution, the more hard disk space you need for a clip, and the more frame drops are likely to occur, especially on slower computer systems.

With the "Second Crossbar" menu, you can choose what kind of input you are using on your VIVO board. You can select either S-Video or Composite Video.

On the Display Driver Installation CD ROM, we have included AMCAP.EXE. This is a very nifty video-capture software that will generate AVI files. You may want to copy that file onto your Windows desktop. Go ahead and play with AMCAP a while to become familiar!

TROUBLESHOOTING

This section contains a list of symptoms, which may indicate a problem with your software or hardware, and some troubleshooting steps you can take to solve the problem. If you still have problems after trying our suggestions, or if you're having a problem, which is not described below, please contact us. We'll be glad to assist you. See the "CONTACTING GAINWARD" section in this manual for more details.

The system doesn't boot when it's turned on, there is no display, and the PC beeps abnormally.

This probably means that your new display adapter isn't correctly seated in the PCI or AGP slot. Try the following:

1. Turn off your PC.
2. Remove your new Gainward display adapter from the PCI or AGP slot and reseat it. The card should fit into the bus slot perfectly, without extra "fingers" that do not match the slot.
3. Reattach the monitor cable to your Gainward card and turn on the PC's power. If the problem persists, repeat step 2.
4. If you have another PC available, you may wish to try installing the display adapter in another PC before calling Gainward. This will help narrow down the cause of the problem.

The system appears to boot normally when it's turned on but there is no display on the monitor.

This probably means that your monitor isn't operating, or isn't connected to the display adapter correctly. Try the following:

1. While the PC is still on, make sure that the monitor is plugged into an electrical outlet and is turned on.
2. Turn off your PC. Reattach the monitor's video cable to your display adapter. This helps rule out the possibility of a loose connection between the display adapter and the monitor. Verify that the display adapter is still tightly seated in its bus slot.
3. Turn on power to your PC. If the problem still occurs, take another look at the monitor. Many monitors have an indicator or display that tells you whether or not the monitor is receiving a video signal from the display adapter. This information will help if you have to contact Gainward.
4. If possible, remove the Gainward card and reinstall your old display adapter to verify that the monitor works correctly with the old display adapter.

GAINWARD Quick Start

An application doesn't display correctly or behaves erratically after Gainward display drivers were installed.

This might indicate a problem with our display driver, or a hardware compatibility issue. To narrow down the cause of the problem, try the following:

1. Temporarily switch to the standard VGA driver. Your PC will operate in a low-resolution environment and you won't have accelerated display performance, but this is a good way to see if the problem is related to the display driver.
2. Check our web site to see if an updated display driver has been made available for your product.
3. Enter your motherboard's CMOS setup, (Press [CTRL]-[Alt]-[Del] during Power-On-Self-Test) and load "Fail-safe settings". Consult the user manual of your motherboard to learn how to do this.
4. Most AGP based display adapters require their own hardware interrupt. On most motherboards however, this feature is not enabled by default. Consult the user manual of your motherboard to learn how to make these changes.
5. On most motherboards, the first PCI slot, the one to the left of the AGP slot, shares one hardware interrupt with the AGP slot. The hardware interrupt on this PCI slot is hard-wired and can't be changed. Make sure not to place any PCI card right beside the AGP slot.
6. If the problem still occurs, you may need to contact Gainward.

The Gainward display adapter does not run in AGP 4x mode, even though both display adapter and motherboard are AGP 4x enabled. It runs in AGP 2x mode instead.

This indicates that either the AGP driver (VGARDT.VXD) may need to be updated, or a setting in your motherboard's CMOS setup needs to be changed.

1. Enter your motherboard's CMOS setup, (Press [CTRL]-[Alt]-[Del] during Power-On-Self-Test). Select "Advanced Chip Set Settings". Locate the AGP section and select AGP 4x. Save your settings and reboot the system. Consult the user manual of your motherboard to learn how to do this.
2. Contact your motherboard manufacturer and inquire for an AGP driver for your particular motherboard. If you have an AGP 4x based motherboard with a VIA chip set for instance, you may need to re-install the 4-in-1 drivers that shipped with your motherboard to take full advantage of AGP 4x and the high performance of your Gainward display adapter.
3. Load Microsoft's web based update service to verify if there is perhaps an updated AGP driver for your motherboard.

GAINWARD Quick Start

The system appears to boot normally when it's turned on. The monitor comes on, shows the Power On Self Test. The moment Windows' desktop is starts, the monitor turns off or shows a message "Out of Range".

This indicates that you (or Windows) chose a resolution and/or refresh rate, that the monitor is not capable of handling. This is known to happen on a few occasions where Windows 98, Windows 98SE or Windows ME installs a "Default Monitor" after installing display drivers

- Turn off your computer and turn it back on again. Immediately press the [F5] key and keep it pressed until Windows has finished loading the desktop. Windows is now loaded in "Safe mode". Right-click on Windows' desktop and open the "Display Properties" - "Settings" applet. Click on "Apply" and reboot Windows. Windows will now start normal, but with 16 colors. Again, open your "Display Properties" - "Settings" applet, change the color depth and the resolution. Click on "Apply" and Windows will restart for a second time. Now Windows will come up normally. You can now proceed to select the correct monitor type on the advanced "Display Properties" - "Monitor" applet.

Windows will not allow the display of its desktop on a television.

This usually indicates that Plug&Play was unable to detect an attached S-Video or composite video cable due to excessive cable length, a broken cable or a poor connection..

1. Try re-booting your computer with video cables attached to both television and display adapter.
2. Try changing to a shorter video cable. A video cable should not exceed 6ft (2m)
3. Try using "Professional" -grade video cables. They are more expensive, but well worth the effort.
4. If you need to use a longer cable, you must use a video amplifier or repeater/box to compensate for signal loss over distance.

Windows will allow displaying its desktop on a television, but in poor quality or only in black and white.

This indicates that either you are using the wrong cable for your television, or the wrong "Television Standard" has been selected for output to your television.

1. In Window's "Display Properties", change to "Output Device" in the "Advanced Settings" Tabs. Click on the "Change Format" button to choose the TV Standard of your country. The default setting is "United States - NTSC"
2. In Window's "Display Properties", change to "Output Device" in the "Advanced Settings" Tabs. Click on the "Format" button to choose the cable that connects your computer with your TV.

GAINWARD Quick Start

3. If your picture comes in color, but is blurry, your video cable may be too long, or is of poor grade. Try using a shorter cable. For best possible quality, try using a high grade S-Video cable instead of a composite cable.
4. Perhaps you are using an S-Video cable connected to a SCART (EURO A/V) adapter on a television that does not support S-Video. Try using a Composite Video cable instead.
5. Perhaps you are using an S-Video cable connected to a SCART (EURO A/V) adapter on a professional-type television. Please consult the owner's manual of your television to setup the television's SCART interface correctly.

Windows will allow displaying its desktop on a television, but not on a VGA monitor simultaneously. This is not an error: Only a very few display adapters, such as NVIDIA's GeForce2 MX based display adapters will support simultaneous display on both Television and a VGA Monitor.

- If you have a GeForce2 MX based Gainward display adapter, open Window's "Display Properties" "Settings" – applet, choose a resolution of 800x600 or 640x480 and click on "Apply". Then click on the "Advanced..." button and select the "TwinView" tab. Choose the "Clone Desktop" feature and click on "Apply".

Windows will allow displaying its desktop on a television, but DVD playback is not possible. This is not an error: Today, most DVDs are "Macrovision" (MV7) protected. Any DVD software decoder will detect the MV7 protection key on your DVD, and it will then determine via Plug&Play, if a television set is connected to your display adapter. If both cases are true, the DVD decoder software must be stopped from operating. This is done to protect the film industry from piracy. Theoretically you could connect any VCR instead of your television to your display adapter – neither the DVD decoder, nor Plug&Play would know the difference!

- If you insist to display your DVD on a commercial television set, you should buy a regular DVD player. You can also obtain a VGA scan converter to connect your VGA card to a television via S-Video. Please be advised that Gainward does not sell scan converters, nor does Gainward condone the illegal reproduction of copyrighted material, and therefore will disclaim any responsibilities and liabilities in the event of misuse.

GAINWARD Quick Start

Two monitors are connected to a Gainward TwinView display adapter, but it is impossible to get the second monitor working.

This behavior indicates, that either the primary monitor or the secondary monitor, or both monitors together, do not comply with the DDC2a or DDC2b standard. The DDC2a/b standard is a Plug&Play definition, which amongst others, clearly defines power saving properties. Windows based operating systems can only use one power management standard. To prevent serious damage to any non-DDC2 compliant monitor, the TwinView feature is disabled in the display driver. (The DDC2 issue is a mandatory requirement from Microsoft to pass the "Windows Hardware Quality Labs" (WHQL) certification.

1. Try switching the primary and secondary monitors to determine if this is a workable solution.
2. Verify your user manuals of both monitors. Some newer monitors can be configured to become DDC2 compliant via the monitor's OSD – Setup (On Screen Display Setup). This software is built into some monitors.
3. If nothing helps, get a DDC2 compliant monitor.

Two monitors and a television set are connected to a Gainward TwinView display adapter. It is impossible to enable the television while both monitors are active.

This behavior is correct. It is not possible to share the second VGA output with TV-Out

- Open "Display Properties" and change to the "Settings" tab. Rightclick on Monitor 2 - icon and select "Disable" from the menu. Click on the "Apply" button to have the changes take effect. Now click on the "Advanced..." button, and then on the "Output Device" tab. Click on TV and then on the "Apply" button. Your TV will now display a picture.

Some more notes about using Televisions with VGA cards

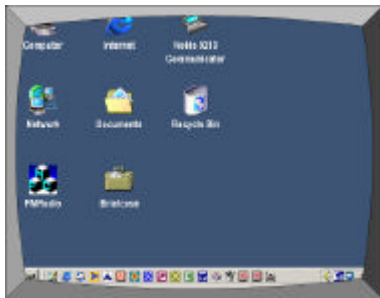
Most Gainward display adapters ship with a TV-Out connector, or a VIVO (Video In / VideoOut) connector. This feature is useful for business presentations, or, if you would like to integrate your computer as a part of your home entertainment system. Please keep in mind that your television is not at all designed to display a high-resolution image. Here are some facts about television technology that will help explain the situation:

- A typical television broadcast resolution is 720 x 540 pixels for NTSC, and 720 x 576 pixels for PAL.
- Televisions display their picture at a low refresh rate: 30Hz for NTSC and 25Hz for PAL.
- The method to display a broadcast picture on a television is by using "overscan". This means that the actual size of the broadcast picture is larger than the size of the television tube. By doing so, television

GAINWARD Quick Start

manufacturers and TV stations do not need to worry about precisely centering the picture they are transmitting / displaying.

- A video signal has a line frequency of only 15.675 KHz. (A standard VGA signal has at least 31.5 KHz!)
- Due to their low refresh rates, televisions are not designed for still pictures.



Overscan



Underscan

Taking all these facts into account, you may expect the video signal coming from your VGA card appear slightly out of center, leaving a border, flicker, and perhaps not be the sharpest, especially when you compare this directly with the image displayed on your VGA monitor. In other words, the picture will just be as good as the media it is being displayed on.

This is why it is not recommended to use a television to do word processing or other applications that may require high resolutions and a flicker-free picture.

Televisions are interesting when they are used for large screen gaming, or playing movies using a computer. Because TVs are designed to display moving pictures, the low refresh rate and the not-so-sharp picture become unnoticeable.

GAINWARD Quick Start

CONTACTING GAINWARD

| | | |
|---------------|-------------------|--|
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| | Internet | www.gainward.com www.gainward.com.tw |
| | Technical Support | support@gainward.com.tw +886-2-2696-6777 |
| | Mailing Address | 8:30am – 12:30am and 1:30pm – 5:30pm, Monday through Friday 12F, No. 96, Hsin Tai Wu Road Section 1 Hsi-Chih, Taipei Hsien TAIWAN |
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MODE TABLES

Graphics Modes and Refresh Rates

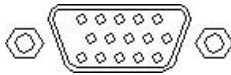
| Resolution | 256 Colors | 64K Colors | 16.7M Colors |
|--------------------|-------------|-------------|--------------|
| 640 x 480 | 60 – 240 Hz | 60 – 240 Hz | 60 – 240 Hz |
| 800 x 600 | 60 – 240 Hz | 60 – 240 Hz | 60 – 240 Hz |
| 1024 x 768 | 60 – 240 Hz | 60 – 240 Hz | 60 – 200 Hz |
| 1152 x 864 | 60 – 200 Hz | 60 – 200 Hz | 60 – 170 Hz |
| 1280 x 960 | 60 – 170 Hz | 60 – 170 Hz | 60 – 150 Hz |
| 1280 x 1024 | 60 – 170 Hz | 60 – 170 Hz | 60 – 150 Hz |
| 1600 x 900 | 60 – 150 Hz | 60 – 150 Hz | 60 – 120 Hz |
| 1600 x 1200 | 60 – 120 Hz | 60 – 120 Hz | 60 – 100 Hz |
| 1920 x 1200 | 60 – 100 Hz | 60 – 100 Hz | 60 – 85 Hz |
| 1920 x 1440 | 60 – 85 Hz | 60 – 85 Hz | 60 – 75 Hz |
| 2048 x 1536 | 60 – 75 Hz | 60 – 75 Hz | 60 Hz |

VESA Mode Table


| Resolution | Mode | 16 Colors | 256 Colors | 64K Colors | 16.7M Colors |
|--------------------|----------|-----------|------------|------------|--------------|
| 320 x 200 | Graphics | | 130 | 10E | 10F |
| 320 x 240 | Graphics | | 134 | 135 | 136 |
| 320 x 400 | Graphics | | 131 | 132 | 133 |
| 640 x 400 | Graphics | | 100 | 13d | 13e |
| 640 x 480 | Graphics | | 101 | 111 | 112 |
| 800 x 600 | Graphics | 102 | 103 | 114 | 115 |
| 1024 x 768 | Graphics | 104 | 105 | 117 | 118 |
| 1280 x 1024 | Graphics | 106 | 107 | 11a | |
| 1600 x 1200 | Graphics | | 145 | 146 | |
| 80 x 60 | Text | 108 | | | |
| 132 x 25 | Text | 109 | | | |
| 132 x 43 | Text | 10a | | | |
| 132 x 50 | Text | 10b | | | |
| 132 x 60 | Text | 10c | | | |

CONNECTOR DESCRIPTION

Analog VGA Connector

| | | | | |
|---|---|-----------------------|----|----------------------|
|  | 1 | Red Video | 9 | + 5V |
| | 2 | Green Video | 10 | Sync Return (Ground) |
| | 3 | Blue Video | 11 | NC |
| | 4 | NC | 12 | DDC DATA |
| | 5 | Ground | 13 | Horizontal Sync |
| | 6 | Red Return (Ground) | 14 | Vertical Sync |
| | 7 | Green Return (Ground) | 15 | DDC CLOCK |
| | 8 | Blue Return (Ground) | | |

DVI Connector

| | | | | |
|---|----|---------------|----|------------|
|  | 1 | TX2- | 13 | TX3+ |
| | 2 | TX2+ | 14 | +5V Power |
| | 3 | SHLD 2/4 | 15 | Ground |
| | 4 | TX4- | 16 | HPD |
| | 5 | TX4+ | 17 | TX0- |
| | 6 | DDC_CLK | 18 | TX0+ |
| | 7 | DDC_DAT | 19 | SHLD 0/5 |
| | 8 | Vertical Sync | 20 | TX5- |
| | 9 | TX1- | 21 | TX5+ |
| | 10 | TX1+ | 22 | SHLD Clock |
| | 11 | SHLD 1/3 | 23 | TXC+ |
| | 12 | TX3- | 24 | TXC- |

VGA Feature Connector

| | | | | |
|---|-------|------------------|-------|--------------------|
|  | 1-8 | Pixel data | 18 | VIPHAD0 (ZVVSYNCR) |
| | 9 | Pixel clock | 19 | VIP Host Control |
| | 10 | Host Clock | 20 | I2C Clock |
| | 11 | Unused | 21-24 | Ground |
| | 12 | Unused | 25 | Unused (reserved) |
| | 13-16 | Ground | 26 | I2C Data |
| | 17 | VIPHAD1 (ZVHREF) | | |

S-Video In and S-Video Out Connectors, Composite Video In and Composite Video Out Connectors

| | | |
|---|-------|------------------------------------|
|  | 1 | Luminance 1V incl. Sync, 75 Ohm |
| | 2 | Chrominance 0.3 V burst, 75 Ohm |
| | 3,4,B | Ground |
| | A | Color Composite 0 to 0.7 V, 75 Ohm |

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FCC AND CSA COMPLIANCY STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Notice:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Plug the computer into a different outlet so that the two devices are on different branch circuits.
- If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions.

Warning: Shielded interface cables must be used in order to comply with emission limits.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CSA Notice:

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.