Z800 3DVisor

eMagin

Quick Start Guide

Congratulations! You have entered the world of true 3D stereovision and virtual imaging. Your eMagin Z800 3DVisor provides an audiovisual experience unmatched by any other personal viewing system available to consumers today. The Z800 3DVisor opens a new category of computer imaging based on new Organic Light Emitting Diode (OLED) display technology, state-of-the-art optics and a highly adjustable ergonomic design. It's a whole new level of technology you have never experienced before. We encourage you to read the User Manual thoroughly to ensure that you get the best possible performance from your Z800 3DVisor in complete comfort and safety.

READ ALL SAFETY WARNINGS AND CAUTIONS IN USER MANUAL BEFORE USING THIS PRODUCT

Follow all manufacturer's instructions for proper adjustment of the product. Improper adjustment of the eyepiece optics may cause serious injury.

- Improper setup and adjustment of the eyepiece optics may cause headache, nausea, dizziness, motion sickness, eye fatigue or balancing difficulty. These symptoms may temporarily disturb your vision and balance. Walking or operating a vehicle should be avoided if you are experiencing these symptoms.
- Do not use this product where situational awareness is critical, such as operating vehicles, in areas where there are moving vehicles or stairs, or while operating machinery or in potentially life threatening situations.
- If you experience any discomfort, stop using the product immediately until the symptoms subside.
- Always protect product from liquids; never immerse the product in water.
- Power off product when not in use. Do not leave product on for extended periods of time.
- To avoid damage to the optic lenses do not drop, or submit product to rough use not intended by the manufacturer.
- Do not use product in temperatures below 0°C or above 40°C (below 32°F or above 104°F).

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What's in the Box?

Z800 3DVisor

Controller 3DVisor

System Requirements

- PC-compatible computer or laptop with one available USB port
- Windows XP®
- CD-ROM or DVD drive
- 10 MB of available hard-disk space
- Monitor resolution setting of 800x600
- Monitor refresh rate setting of 60 Hz

PART NUMBER	ITEM
210-03241-01	Z800 3DVisor and Controller
591-02111-01	VGA Video Connection Cable (1)
591-03014-01	USB Connection Cable (2 feet)
900-03048-00	(2) Audio Cables (2 feet)
299-03243-00	(2) Personal Earbud Headphones
900-03374-00	Carrying Case
900-03376-00	Lens Cleaning Cloth
014-03373-00	Software and Documentation CD
001-03372-00	Quick Start Guide
000-03327-00	Warranty Registration Card

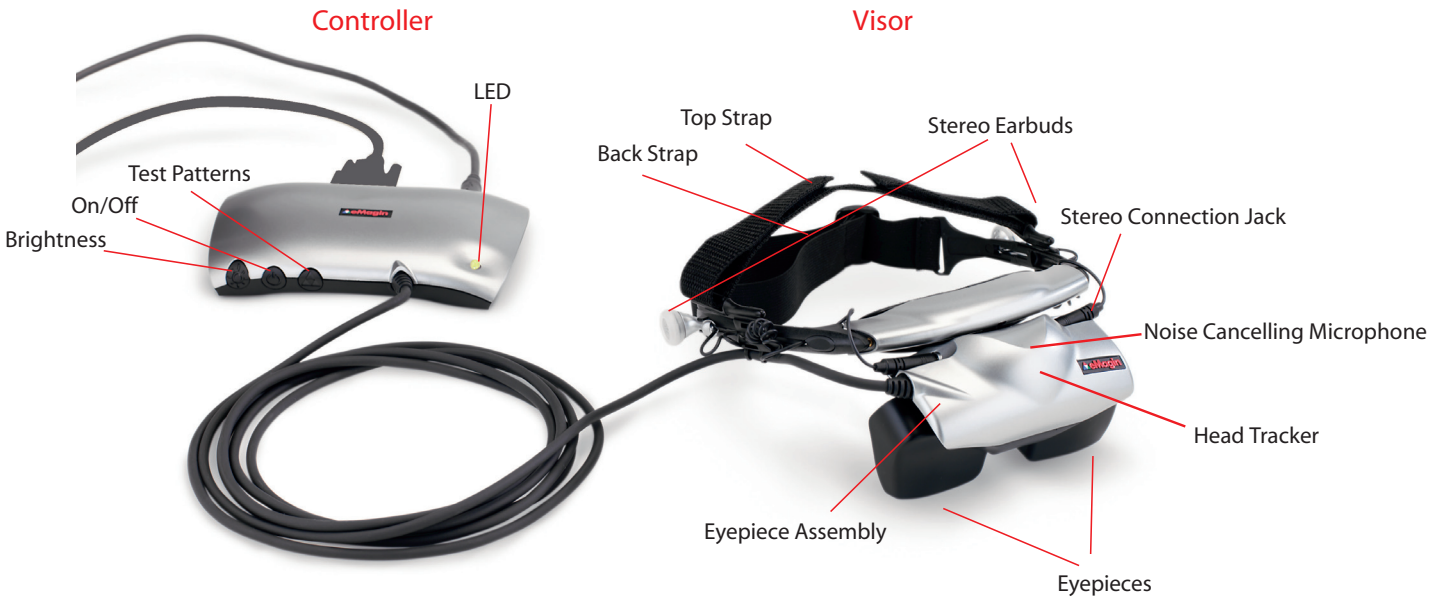
3D Stereovision Requirements

NVIDIA 3D Accelerator Card using ForceWare® Graphics Drivers

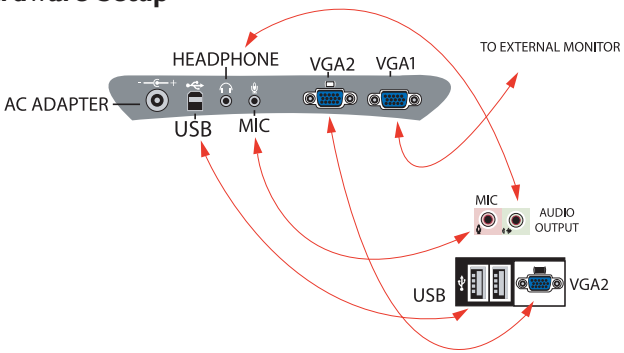
- TNT (TNT2 and Vanta products)
- GeForce (including GeForce 256, GeForce2&3 products)
- Quadro (including Quadro2 products)

NOTE: The Z800 3DVisor works with standard graphic cards from Intel, ATI and other manufacturers in 2D mode, but requires frame sequential 3D stereovision input for 3D.

Features and Components



Hardware Setup



Place the Z800 3DVisor and Controller on a flat, stable area next to your computer.

1. Plug USB cable into USB ports on your computer and on the Z800 3DVisor Controller.
2. Plug the two audio cables into the microphone and earphone ports on your computer and on the Z800 3DVisor Controller.
3. Plug the VGA cable from your existing monitor into VGA Port 1 on the Z800 3DVisor Controller.*
4. Plug the 1-foot VGA cable into the monitor port** on your computer and VGA Port 2 on the Z800 3DVisor Controller.

* **Skip this step if you are using the Z800 3DVisor as your only monitor or as an external monitor for your laptop.**

** **Your computer monitor port may require a DVI to VGA adapter. If you don't have the adapter that came with the computer go to www.3dvisor.com**

NOTE: This Quick Start Guide is provided for your convenience. We encourage you to read the Z800 3DVisor user manual in its entirety.

Z800 3DVisor Drivers and Software Installation

For proper functionality of your Z800 3DVisor the Motion Sensor Driver and Z800 3DVisor Software Utility must be installed and active (even if you don't intend to use the head tracking feature). All drivers and software will be installed automatically and will be fully functional by following the steps below.

1. Disable any anti-virus software currently running on your computer.
2. Insert the Z800 3DVisor Software & Documentation CD into the CD ROM drive.
3. When prompted, accept the Software Licensing Agreement by clicking Agree.
4. Click on Drivers and Software and follow the prompts of the Install Wizard.
5. The Z800 3DVisor Software Utility will be active following completion of the installation and a restart of your computer.

   You will see the 

   icon in the extensions tray in the lower right corner of your screen. The Software Utility will be activated each time you start your computer (See the Z800 3DVsior User Guide for instructions on how to deactivate the Software Utility.
6. When you plug the Z800 3DVisor into the USB port on your computer, you will see the Z800 3DVisor Software Utility window open on your screen.

NOTE: The Z800 3DVisor Software Utility must be active for proper functionality of your Z800 3DVisor and to prevent the automatic timeout feature from putting your Visor in standby mode during use

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Initialization of Motion Sensor (head tracker)

When you plug the Z800 3DVisor into the USB port on your computer you will see the Z800 3DVisor Software Utility window appear on your screen. This is your opportunity to calibrate the Motion Sensor (head tracking device), adjust the speed and sensitivity of horizontal and vertical motion, or disable the Motion sensor for applications that do not require head tracking.

To Calibrate the Motion Sensor, use the following steps. Remember, the Z800 3DVisor must be plugged into a USB port on your computer for the Visor and Software Utility to function.

1. Place the Z800 3DVisor on a flat surface right side up in with the front facing your computer or primary monitor.
2. With the Software Utility open to the **Motion Sensor** tab, move the cursor to **Reset to Center** and click.
3. The head tracking feature is now fully functional. You can use the three sliders for **Sensitivity, X Speed and Y Speed** to adjust movement to your preferences.

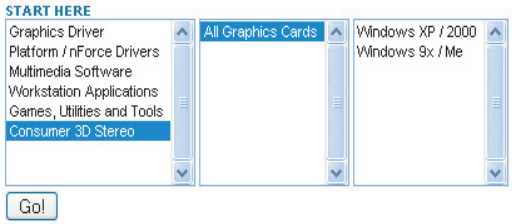
NOTE: It may be necessary to check the Invert Y-Axis direction box to be compatible with the up and down signals of some games or applications.

For complete instructions on functionality of the Z800 3DVisor Software **SEE Section 3.4 Using the Z800 3DVsior Software Utility** in the User Manual. The are also several Tool Tips that will appear as you drag the mouse over various action boxes in the Software Utility for quick instructions.

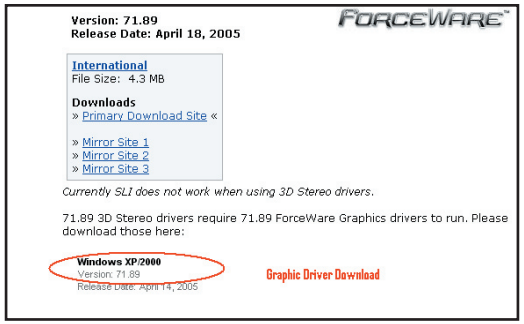
3D Stereovision Drivers

3D stereovision requires specific drivers, which currently can be downloaded at no cost from www.nvidia.com Other graphic cards may not provide 3D features. See User Manual for more information.

1. Determine the model of your NVIDIA Graphics Card.
2. Download the Graphics Card driver for your NVIDIA graphics card.
   - Go to www.NVIDIA.com
   - Select **Download Drivers** from the pull down menu
   - Select **Consumer 3D Stereo** and **All Graphics Cards**
   - Select **Windows XP/2000**



- Click **Go** to navigate to the Force Ware screen



- Click **Windows 2000/XP**
- Cliick **Accept** for the License Agreement
- Choose **Save** to download the driver

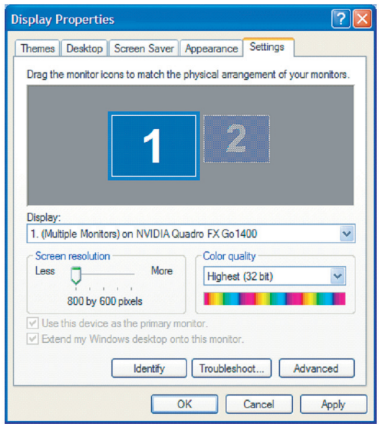
3. Download the Stereo 3D driver for your NVIDIA graphics card.
   - Return to the NVIDIA website
   - Click the **Back** button on the ForceWare screen
   - Click on a download site link
   - Click **Accept** for the License Agreement
   - Choose **Save** to download the driver

NOTE: The version numbers on the graphics and stereo drivers downloaded must be the same.

4. Disable antivirus software
   - Right click on **My Computer**
   - Select **Manage**
   - Select **Services** under Service and Applications heading in the left panel
   - Right Click on your **AntiVirus Software**
   - Select **Stop**
5. Run the graphics driver [.exe] file and follow the prompts in the install wizard.
   - In the Display Properties dialog box, select the **Settings** tab and set the resolution to **800x600**.
   - Select the Advanced button, click the **Monitor** tab and set Screen refresh rate to **60 Hertz**.
6. Run the stereo driver [.exe] file and follow the prompts in the Install Wizard.
   - Click on the **NVIDIA Driver** tab.
   - Select the **Enabled** button under Stereo Enable mode.
   - Select **Stereo Properties** and **Stereo Setup and Test** from the pull down menu.
   - Move the **Resolution** slide bar to **800x600**.
   - Set the **Stereo Refresh** Rate to **60 Hz.**
   - Click the **Set Rate For All Resolutions** button.
   - Click on **Launch Test Application** to view sample stereo 3D image.

Desktop Computer Setup

NOTE: Be sure all connections between your Computer and the Z800 Controller are tight and secure (SEE Hardware Setup in this Guide or the Z800 User's Manual on the Software & Documentation CD).



Dual Monitors (Same image on Z800 as your existing monitor)

1. Select the **Settings** tab in the Display Properties Window
2. Set **Screen Resolution** to **800 x 600**
3. Click **Apply**
4. Click **OK** to close window
5. LED on the Z800 Controller should change from red to amber to indicate 2D video input at 800 x 600 resolution

3D Viewing and Gaming

1. Select the **Settings** tab in the Display Properties Window
2. Set Screen Resolution to **800 x 600**
3. Click **Apply**
4. LED on the Z800 Controller should change from red to green to indicate 3D video input at 800 x 600 resolution is received
5. Click on **Advanced**
6. Click on the tab for your NIVIDIA graphics card
7. Click on **Stereo Setup and Test**
8. Confirm that the resolution is set to **800 x 600** and refresh rate to **60 Hz**. Adjust to these settings if necessary.
9. Click **Launch Test Application**
10. If 3D is present press **Esc** to close Test Application

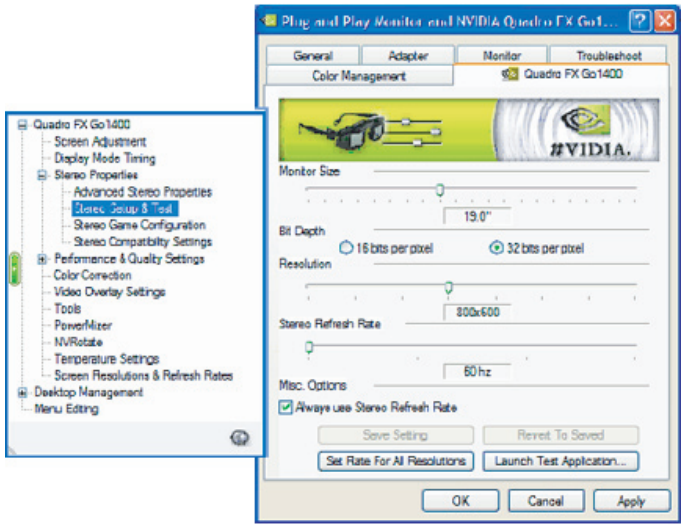
3D Viewing and Gaming (cont.)

11. If 3D is not present press **Esc** to close Test Application Recheck all settings in the NVIDIA driver and make sure that the Stereo Mode is enabled in the Z800 3DVisor Display Utility (See Section 3.4 Using the Display Utility Software in the User's Manual) then re-launch the Test Application
12. Click OK to close window

Laptop or Notebook Computer Setup

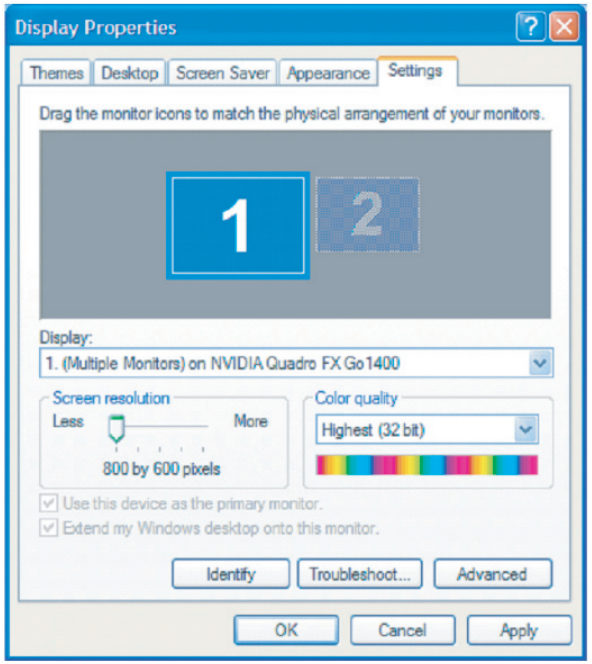
The Z800 3DVisor offers several advantages when used with a laptop or notebook computer due to the unique combination of lightweight, compact size and fold-up form factor; battery-saving, low-power draw on USB connection; and of course big screen 2D viewing and 3D Stereovision gaming capabilities.

NOTE: For more information on other configurations such as Extended Desktops or Private Viewing on the Z800 3DVisor please read the Z800 3DVisor User's Manual.



Dual Monitors (Same image on Z800 as your built-in monitor)

1. Select the **Settings** tab in the Display Properties Window
2. Set Screen Resolution to **800 x 600**
3. Click **Apply**
4. Click **OK** to close window
5. Press the **Function** Key Combination for your laptop that toggles the external display to the Dual Monitor (Internal and External display setting) (For example the combination is Function F8 on a Dell Precision M70)
6. Open the **Display Properties Window**
7. Select the **Settings** tab
8. Set Screen Resolution to **800 x 600**
9. Click Apply
10. LED on the Z800 Controller should change from red to amber to indicate 2D video input at 800 x 600 resolution
11. Click **OK** to close window



3D Viewing and Gaming

Your Z800 3DVisor will automatically sense 3D Stereovision video input when you plug in the video and USB cables an turn on your computer. You will need to make sure that your NVIDIA graphics card is properly setup and enabled for 800 x 600 resolution and 60 Hz. refresh rate (See Section 2.5 Downloading and Installing NVIDIA 3D Driver Software in the User's Manual). You may also need to activate 3D output in the game you wish to play (See the documentation that came with your game software.

Note: On most laptop computers using NVIDIA graphics cards, you must set the Z800 3DVisor as a standalone external monitor and turn off the internal laptop display with the steps below, to view 3D Stereovision.

1. Select the Settings tab in the Display Properties Window
2. Set Screen Resolution to 800 x 600
3. Click Apply
4. Click Okay to close window
5. Press the Function Key Combination for your laptop that toggles the external display to the Dual Monitor (Internal and External display setting) (For example the combination is Function F8 on a Dell Precision M70)
6. Open the Display Properties Window
7. Select the Settings tab

8. Set Screen Resolution to 800 x 600
9. Press Apply
10. LED on the Z800 Controller should change from red to green to indicate 3D video input at 800 x 600 resolution
11. Click OK to close window
12. Press the Function Key Combination again to toggle to External Display only. The Z800 should now be your only display
13. Open the Display Properties Window
14. Select the Settings tab
15. Click on Advanced
16. Click on the tab for your NVIDIA graphics card
17. Click on Stereo Setup and Test
18. Confirm that the resolution is set to 800 x 600 and refresh rate to 60 Hz.
19. Click Launch Test Application
20. If 3D is present press Esc to close Test Application
21. If 3D is not present press Esc to close Test Application. Recheck all settings in the NVIDIA driver and make sure that the Stereo Mode is enabled in the Z800 3DVisor Display Utility (See Section 3.4 Using the Display Utility Software) then re-launch the Test Application
22. Click OK to close window

Wearing & Using the Z800 3DVisor
Adjusting the Visor Headset

For optimal viewing follow these simple steps:

1. Fit headset snugly against your forehead.
2. Adjust and tighten top and back straps – headset should ***not*** rest on your nose.
3. Bring the eyepiece as close to your eyes as possible for the best viewing experience. Note that the eyepiece is on a tilt and in-out motion hinge.
4. Adjust the individual eyepieces to match the distance between your eyes for proper merging of the stereo images and for comfort.
5. Adjust focus by tilting the display in or out from your face keeping the display screens parallel to your eyes.

NOTE: If you normally wear eyeglasses for distance viewing, you should wear the Z800 3DVisor over your eyeglasses.

Adjusting the Eyepiece Assembly

The Eyepiece Assembly swings in and out on a double hinge to allow you to adjust the focal distance to your vision. Always start with the Eyepiece Assembly as close to your face as possible to enhance the immersive experience of the Z800 3D Visor.

Figure 1 Figure 2 Figure 3

For best results, fold the Eyepiece Assembly into its most compressed position as in Figure 3, before you put on the 3DVisor. **If you need to tilt out the Eyepiece Assembly to fit over glasses or during use, be sure to fold the assembly all the way back to its innermost position and grab the assembly as in Figure 1&2 above. Don't be hesitant to push until hinge folds in all the way.**

Interpupillary Distance (IPD) Adjustment

The optics in each eyepiece can be moved left and right to adjust for the distance between your eyes.

For optimal viewing of 3D images, it is important to adjust each eyepiece separately.

Adjust the IPD by grabbing each eyepiece between your thumb and forefinger, move each module to the right or left. **Note: The Eyepiece Modules slides on a toothed ratchet and will "snap" into each adjustment location.** Push or pull equally with both fingers and thumbs, keeping the modules straight. If you twist the eyepiece modules they will not snap to the next in or out position.

Best results are typically obtained when each eyepiece is an equal distance from the center. If the modules are adjusted correctly, you should not see a double image and the entire screen should be in focus. If not properly aligned, readjust as needed.

Simple Troubleshooting Tips

- Make sure all cables are plugged in securely.
- Make sure that the power light is on and shows as either **Green – 3D** or **Amber – 2D**.
- Make sure that **screen resolution** is set to **800x600** and your **refresh rate** to **60 Hz.** in Display Properties Settings.
- Make sure that **3D is enabled** in the NVIDIA Stereo 3D Driver.
- Make sure that you have an NVIDIA card that is compatible with 3D games.
- Adjust the Z800 3DVisor to rest on your forehead, not on your nose.
- Make sure the eyepiece is folded up and in as far as it will go before adjusting focus.
- Make certain you adjust IPD for both eyes to avoid fuzzy images or eye strain.
- If head tracker does not function correctly make sure the USB cable is plugged in and follow Motion Sensor instructions in **Section 3.4** of the Z800 3DVisor User Manual.

For Further Assistance:

1. **Refer to Troubleshooting** in the **Z800 3DVisor** User manual **Section 5.1 Troubleshooting**
2. Visit www.3dvisor.com/support
3. Email techsupport@emagin.com
4. Call Tech Support at: 877-362-4465
   (8:00 AM to 4:30 PM Pacific Time Zone)

   For more contact information go to:
   www.3dvisor.com