



Matrox[®] Extio[™] Series

Extio F2208 • Extio F2408 • Extio F2408E Expander

User Guide

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About this user guide

Your Matrox user guide provides information on installing and using your Matrox hardware. For information on Matrox PowerDesk software features and options, see the help file included with your PowerDesk software.



Note: This guide has references specific to version 2.09.04 or later of the Matrox display driver.

Using this guide

This guide assumes you're familiar with basic functions like click, right-click and double-click, and that you're familiar with the basics of the operating system you're using. Also, we use the following conventions:

- **Bold** for headings and for references to text that appears on-screen.
- *Italics* for file names, paths, publication titles, and new terms.
- ***Bold Italics*** for emphasis.
- Keyboard keys in square brackets, with a plus sign separating keys that you press simultaneously. For example: press [Ctrl]+[Alt]+[Del] to start Windows Task Manager.
- Arrows (“→”) to separate ordered directions. For example, “click **OK** → **Close** → **OK**” is the same as “click **OK**, then click **Close**, then click **OK**”.
- [Green](#) for cross-references. If you're viewing online, click green text to jump to what's being referenced.

More information

We provide additional information in help and *Readme* files. Be sure to check for any last-minute release notes included with your product. Also, check the Matrox Web site (www.matrox.com/graphics) for the latest Matrox software, technical support, and product information.

Overview

Thank you for purchasing a Matrox Extio product. This product is designed for environments requiring data security, low heat emissions, and noise reduction. Leveraging PCI Express® bus extension technology, Extio separates input and output devices from the computer to provide a working environment similar to when the computer is at the user's desk.

Hardware supplied*

- Extio F2208 – Matrox Extio unit, 2 DisplayPort™ to DVI-D adapters, 1 power supply.
- Extio F2408 – Matrox Extio unit, 4 DisplayPort to DVI-D adapters, 1 power supply.
- Extio F2408E Expander – Matrox Expander unit, 4 DisplayPort to DVI-D adapters, 1 power supply, 5 meters of LC-LC optical cable.

Hardware required (sold separately)

- Matrox PCIe interface card ([see shopmatrox.com](http://shopmatrox.com))
- LC-LC optical cable - multimode (62.5/125 µm (OM1), 50/125 µm (OM2, OM3, or OM4)) or LC-LC optical cable - single-mode (9/125 µm (OS1 or OS2))

Optional hardware (sold separately)

- Single-mode transceiver



Note: To purchase any cables or adapters not included with your Matrox product, see the Matrox online store (shopmatrox.com).

Software available

- **Matrox PowerDesk** – to use your Matrox graphics hardware. Matrox provides 32-bit and 64-bit versions of the display driver.

* The hardware supplied with your Matrox product may vary depending on the SKU or part number of your product. For more information, contact your Matrox representative.

Installation overview

To install your Matrox product:

- 1** Install your interface card – [see page 8](#).
- 2** Connect your Extio unit, monitors, and other peripherals – [see page 11](#).
- 3** Extio F2408 – Connect your Expander unit and additional monitors (optional) – [see page 18](#).
- 4** Install the software – [see page 20](#).

Installing your interface card

This section describes how to install your Matrox interface card. For information specific to your computer, like how to remove its cover, see your system manual.

Before you begin

To avoid personal injury and to prevent damage to your computer or Matrox hardware, read the following guidelines before installing your Matrox graphics hardware.



Note: When changing your hardware configuration by adding or removing an Extio unit or by adding, removing, or moving an interface card from one slot to another, you need to uninstall and reinstall your Matrox software.

Preventing damage to your interface card

- Always turn off your computer, unplug it, then wait for it to cool before touching any of the internal parts of your computer or installing your Matrox product.
- While your computer is turned off but still plugged in, some electrical current is supplied to the motherboard. This current may prevent newly installed hardware from working properly.
- Static electricity can severely damage electronic parts. Before touching any electronic parts, drain static electricity from your body (for example, by touching the metal frame of your computer).
- When handling a card, carefully hold it by its edges and avoid touching its circuitry.
- Always try to insert or remove your card as straight as possible.

Using multiple interface cards

You can use up to two (2) interface cards in your system to add more monitors to your setup. While using multiple interface cards, the following guidelines apply:

- An Extio F2408E Expander unit can be connected only to an Extio F2408 unit.
- An Extio F2208 unit can be connected only to the second interface card.

Step-by-step installation

1 Open your computer and remove your existing graphics card

If a graphics card *isn't* already installed in your computer, skip to [step 2](#).

If a graphics card *is* already installed in your computer:

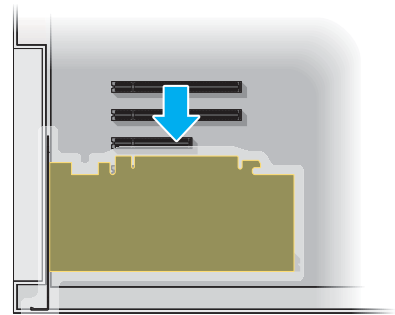
- a Using **Programs and Features** (Windows® 7/Vista®) or **Add/Remove Programs** (Windows® XP) in the Windows **Control Panel**, remove any currently installed display drivers. Restart your computer for the changes to take effect.

After your computer restarts, you're prompted to install drivers for the new graphics hardware detected. Click **Cancel**.

- b Turn off your computer and all peripherals such as your monitor or printer.
- c Open the computer and remove your existing graphics card (if any).

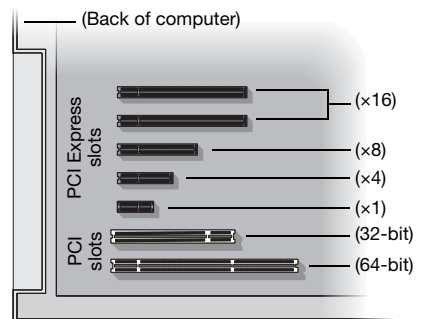


Note: If graphics hardware is built into the motherboard of your computer, make sure it's disabled. For more information, see your system manual.



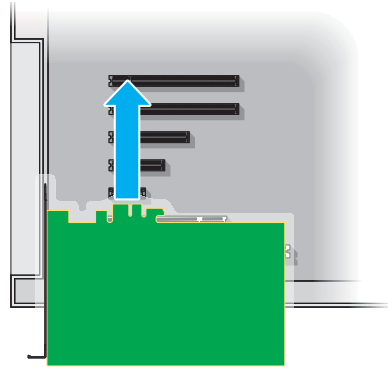
2 Choose an expansion slot

Most computers have different types of expansion slots. Your interface card is a PCIe® ×1 card. It's compatible with all PCIe slots. To ensure maximum system compatibility, we recommend you use a PCIe ×16 slot. Your system manual should identify the location of each type of expansion slot in your computer.



3 Insert your Matrox card

- a Position your Matrox card over the expansion slot you've chosen.
- b Push the card in firmly and evenly until it's fully seated in the slot.
- c Secure the bracket of your Matrox card to the computer frame.



Your Matrox card is now installed. *Before restarting your computer*, connect your interface card and your monitors to your Extio unit (see “Connecting your Extio unit”, page 11). Connect your Expander unit (if present) to your Extio unit (see “Connecting your Expander unit”, page 18). *After connecting*, you can restart your computer and install your Matrox software (see “Installing your Matrox software”, page 20).

Connecting your Extio unit

This section describes how to connect your Matrox Extio unit, monitors, and other peripherals.



Note: To purchase any cables or adapters not included with your Matrox product, see the Matrox online store (shopmatrox.com).

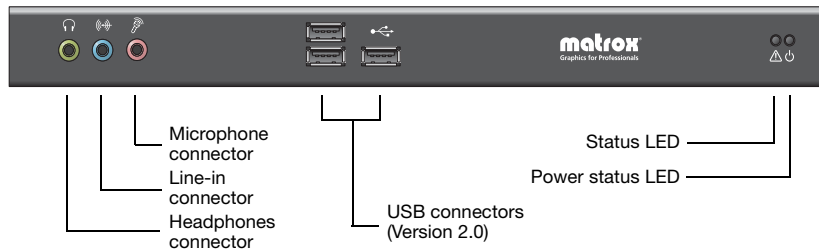
Before you begin

To avoid possible problems that could damage your monitors or prevent you from using your Matrox product, read the following guidelines before connecting your Matrox graphics hardware.

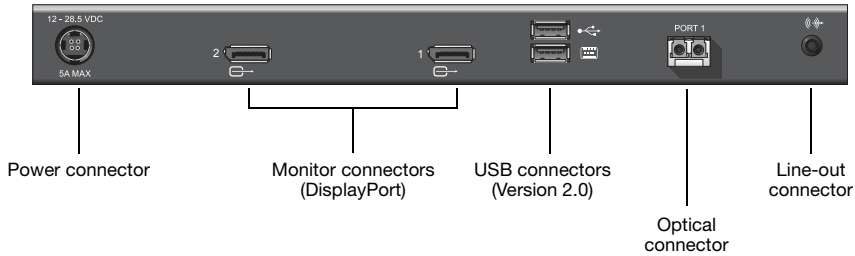
- Whenever you change your connection setup, make sure you're using the correct connectors and that all connectors are properly fastened.
- Don't change monitor connections while your computer is turned on. While your computer is turned on, it may be using monitor settings that are specific to the current monitor connections. *Some* devices may be permanently damaged if incorrect settings are used.
- Whenever you restart your computer, make sure your monitors are already turned on. Otherwise, the software may not be able to properly detect your monitors.
- To prevent your unit from overheating, make sure your unit is located in a well ventilated area and nothing is blocking its ventilation holes. For more information, see "Appendix A – Providing adequate airflow", page 54.

Connection overview

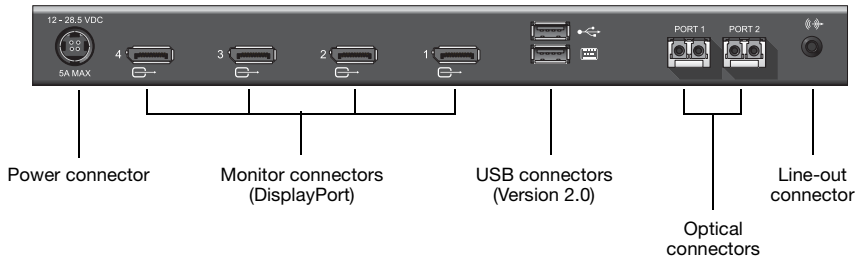
Front – Extio F2208 and F2408



Back – Extio F2208



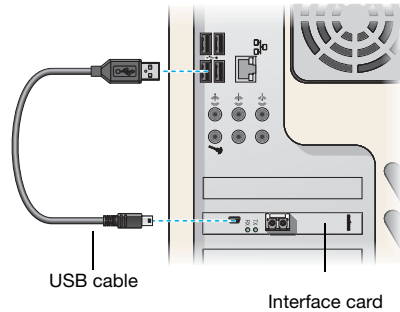
Back – Extio F2408



Step-by-step connection setup

1 Connect your USB cable

Connect one end of your USB cable included with your product to the USB connector on your interface card. Connect the other end of your cable to a USB connector on the motherboard of your system. Make sure your connectors are properly connected.



Note: To use a keyboard with your unit before your operating system starts, the USB cable must be connected from your interface card to your computer. Also, to use the audio hardware of your unit after your operating system has started, this cable must be connected.

2 Connect your unit to your interface card

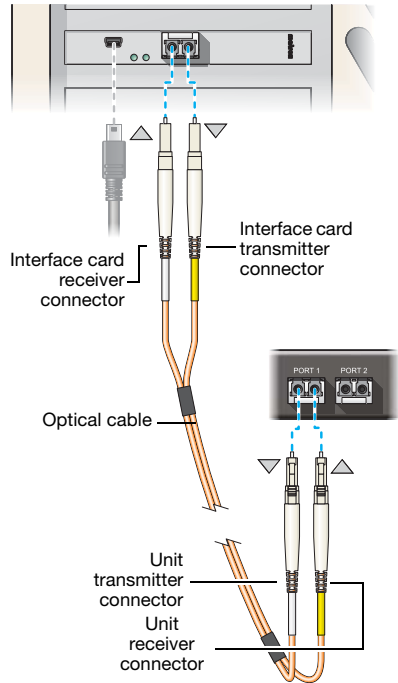
To connect your Extio unit to your interface card, you need an LC-LC optical cable (sold separately).

Connect one end of your optical cable to the optical connector of your interface card. Connect the other end of your optical cable to the optical connector labeled **Port 1** on your unit. Make sure your connectors are properly connected.

When connecting your fiber optic cable, make sure the connector on one end of your fiber optic cable attached to the transmitter side of a transceiver is connected on the other end of the cable to the receiver side of the other transceiver.



WARNING: Disconnecting your optical cables while your computer is turned on will cause your operating system, your program, and your unit to stop responding.



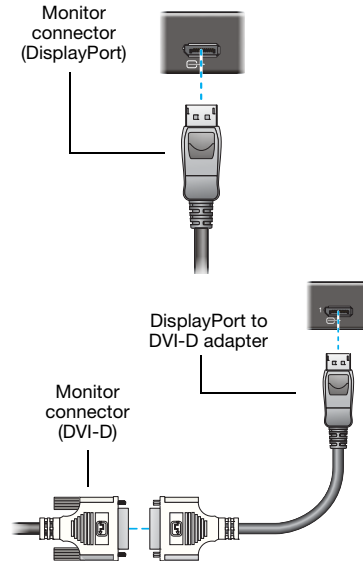
Note: Color coding and labeling on the fiber optic cable and on the transceivers are for clarity. Labeling on your cable and transceivers may differ.

3 Connect your monitors

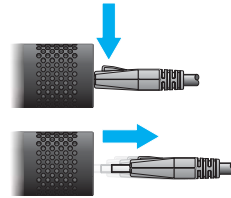
Connect your monitors to the monitor connectors (starting with connector **1**) at the back of your Extio unit.

If your monitor has a DisplayPort connector, connect your monitor directly to a DisplayPort connector at the back of your unit.

If your monitor has a DVI-D connector, use a DisplayPort to DVI-D adapter to connect your monitor cable to the DisplayPort connector at the back of your unit.



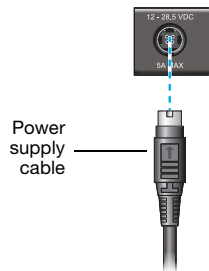
WARNING: To avoid damaging the DisplayPort connector on your DisplayPort monitor cable or on your Matrox product, carefully remove the DisplayPort cable by pressing the latch on the top of the DisplayPort connector while removing the connector.



4 Connect your power supply

Attach one end of the power supply cable provided with your Matrox product to the power connector on your Matrox product.


Plug the power supply cord into an electrical outlet.

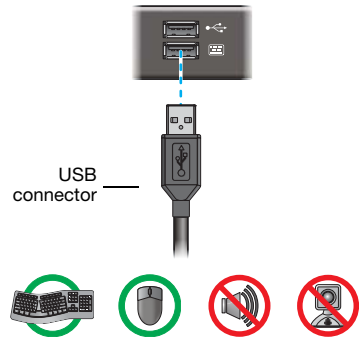


5 Connect your input devices (optional)





To use a USB device (such as a keyboard or mouse), connect it to a USB connector on your unit. There are two USB connectors at the back of the unit and three at the front.

i **Note:** Isochronous USB devices (for example, USB audio and video devices such as a microphone or Webcam) aren't supported with an Extio unit.

i **Note:** To use a keyboard with your unit before your operating system starts, connect the USB connector of your interface card to your computer (see “Connect your USB cable”, page 12), and connect your keyboard to the USB connector labeled with a keyboard icon () at the back of your unit.



6 Connect your audio devices (optional)



Your unit has two input connectors (**Line in** () and **Microphone** ()) and two output audio connectors (**Headphones** () and **Line out** ()). All audio connectors support stereo jack connectors.

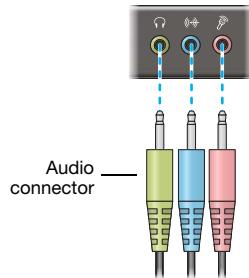
To connect an audio device to your unit:

- Plug one end of your audio cable into the audio connector on your unit.
- Plug the other end of the cable in your audio device. For information on the type of connector supported by your audio device, see its documentation.

i **Note:** To use the audio hardware on your unit, your interface card needs to be connected to your computer with a USB cable (see “Connect your USB cable”, page 12).

If you're using multiple interface cards in your system, make sure you enable the audio driver for the unit to which your audio hardware is connected.

i **Note:** Audio output is enabled on the **Line out** () connector even while a device is connected to the **Headphones** () connector.



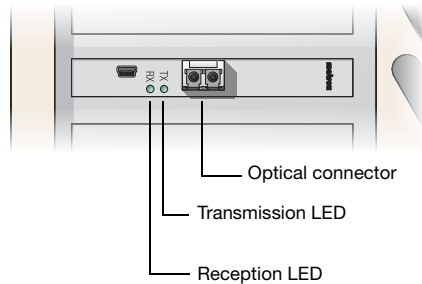
Validating your connection setup

After connecting your unit, we recommend you validate your connection setup before you continue.

1 Check the optical connection on your interface card(s)

After starting your computer and your Extio unit, make sure both the transmission (**TX**) and reception (**RX**) LEDs on the bracket of your interface card are green. If the reception LEDs is red, switch the cables in the optical connector of your Matrox product.

If the light doesn't change to green, make sure your Extio unit is powered and that your optical cable is properly connected.



2 Check your monitor connections

When your computer starts, the system BIOS prompt should appear on your primary display (on the monitor attached to connector 1 of your Extio unit).

If the system BIOS prompt doesn't appear, your computer may have built-in graphics hardware. Check your system manual for instructions on how to disable your computer's built-in graphics hardware.

3 Check your keyboard connection

When the Extio BIOS prompt appears on your display, press [F7] to enter the Extio Setup Utility. This ensures that the keyboard is properly detected and functional before Windows starts. In the setup utility, select **Options** → **Cancel and exit**.



Note: On certain systems, instead of the Extio BIOS prompt, an umbrella menu may appear asking you to press [Space] or another key to access additional ROM menus. If you're able to enter the additional ROM menu by following the instructions provided in the umbrella menu, your keyboard connection is valid.

If your keyboard isn't available before Windows starts, your keyboard may be connected to the wrong USB connector. For more information, see [“Connect your input devices \(optional\)”](#), page 15.

If your keyboard is properly connected, it may not be supported by your Extio unit. Only basic USB keyboards are supported by your Extio unit before Windows starts (for example, USB keyboards that have no USB hubs or media controls).

4 Check your input devices in Windows

Make sure any USB Human Interface Devices (HID), such as your mouse and keyboard, are working properly in Windows.

If any of your HID devices aren't working properly, Windows may not have detected your HID device. For more information, see [“USB keyboard or mouse doesn't work”](#), page 36.

Your Matrox product is now installed. If you want to connect an Expander unit, see [“Connecting your Expander unit”](#), page 18. Otherwise, restart your computer and install your Matrox software (see [“Installing your Matrox software”](#), page 20).

Connecting your Expander unit

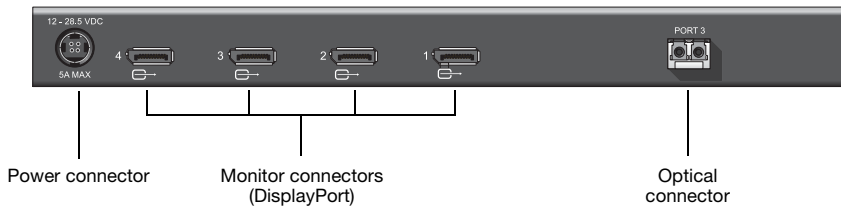
Note: You can connect an Extio F2408E Expander unit only to an Extio F2408 unit.

This section describes how to connect an Expander unit (sold separately) to your Extio unit. Connecting an Expander unit to your Extio unit enables you to support four additional monitors.

Note: When changing your hardware configuration by adding or removing an Expander unit, you need to uninstall and reinstall your Matrox software.

Connection overview

Back – Extio F2408E Expander

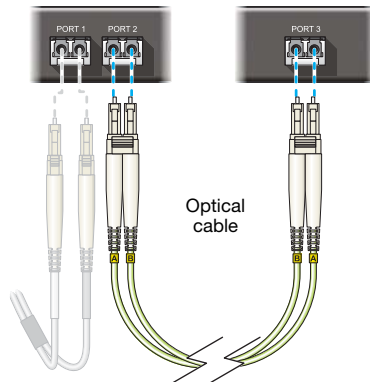


Step-by-step connection setup

1 Connect your Expander unit to your Extio unit

Connect one end of the optical cable provided with your Expander unit to the optical connector labeled **Port 2** on your Extio unit.

Connect the other end of your cable to the optical connector labeled **Port 3** on your Expander unit. Make sure your connectors are properly connected.



Note: Labeling on the fiber optic cable is for clarity. Actual labeling may differ.



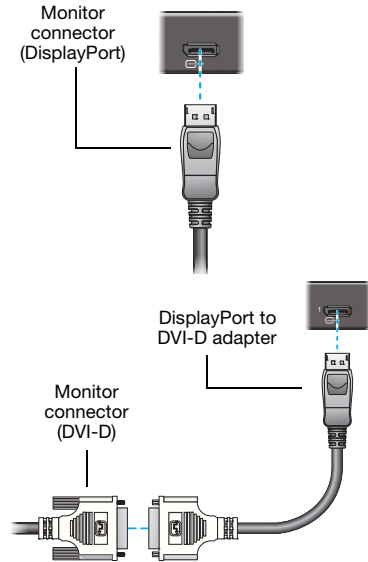
WARNING: Disconnecting your optical cables while your computer is turned on will cause your operating system, your program, and your unit to stop responding.

2 Connect your monitors

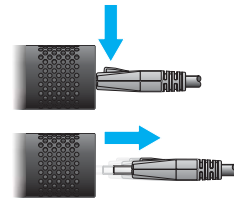
Connect your monitors to the monitor connectors (starting with connector **1**) at the back of your Expander unit.

If your monitor has a DisplayPort connector, connect your monitor directly to a DisplayPort connector at the back of your unit.

If your monitor has a DVI-D connector, use a DisplayPort to DVI-D adapter to connect your monitor cable to the DisplayPort connector at the back of your unit.



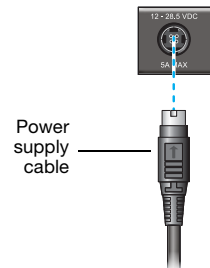
WARNING: To avoid damaging the DisplayPort connector on your DisplayPort monitor cable or on your Matrox product, carefully remove the DisplayPort cable by pressing the latch on the top of the DisplayPort connector while removing the connector.



3 Connect the power supply for your Expander unit

Attach one end of the power supply cable provided with your Matrox product to the power connector on your Matrox product.

Plug the power supply cord into an electrical outlet.



Your Matrox Expander unit is now connected. Restart your computer and install your Matrox software (see “Installing your Matrox software”, page 20).

Installing your Matrox software

This section describes how to install Matrox software for *Windows® 7*, *Windows® Server® 2008 R2*, *Windows® Server® 2008*, *Windows® Vista®*, *Windows® XP*, and *Windows® Server® 2003*. The installation of the display driver is the same for the 32-bit and 64-bit versions.

Before you begin

- You may need administrator rights to install or uninstall certain software. For more information, see Windows documentation or contact your system administrator.
- When updating your display driver, we recommend you first uninstall your previous display driver.
- When changing your hardware configuration by adding or removing an Extio or Expander unit or by adding, removing, or moving an interface card from one slot to another, you need to uninstall and reinstall your Matrox software.

Obtaining a display driver

- If your Matrox product was provided by an OEM, a distributor, or a system integrator, contact them for the latest display driver. Such a display driver is more likely to be tested with your computer model.
- Matrox makes the latest display drivers available on the Matrox Technical Support Web site (www.matrox.com/graphics/en/support/drivers).

Selecting the proper display driver

Matrox makes available two types of display drivers (XDDM and WDDM). The display driver you install depends on the operating system you're using and the graphics hardware installed in your system.

Hardware detection

- **Windows 7/Vista** – Windows detects new hardware when you restart and installs a standard VGA driver.
- **Windows XP** – Windows detects new hardware when you restart. If Matrox display drivers haven't been previously installed, Windows prompts you to install a display driver. When prompted by the **Found New Hardware** wizard to install a display driver for your graphics hardware, click **Cancel**.

Installing your display driver

To install the display driver for your Extio product, run the executable file for your display driver package. The display driver package decompresses itself into an installation folder (typically, *C:\MGAFOLD*). Follow the on-screen instructions.



Note: After the installation, keep the installation folder in your system to ensure that all files (including the additional driver files for your product) are still available for installation.

Validating your driver installation

After your display driver is installed, the status LED () on your unit should turn from orange to green.

If audio doesn't work on your Extio unit, see [“Sound”](#), page 43 for more information.

Matrox PowerDesk software



Your Matrox display driver includes Matrox PowerDesk software. This software helps you get the most out of your Matrox product. Use Matrox PowerDesk software to change certain display settings or access Matrox features.

Accessing PowerDesk

To access Matrox PowerDesk:

Windows 7/Vista/XP –

- Click **Start** → **All programs** (or **Programs**) → **Matrox Graphics** → **Matrox PowerDesk**.
- Right-click your Windows desktop and select **Launch Matrox PowerDesk**.

Accessing Matrox PowerDesk help

For information on Matrox PowerDesk software features and options, see the help file included with your PowerDesk software.

While using Matrox PowerDesk software, you can access the help file in several ways:

- From the main PowerDesk interface, click **Help and Troubleshooting** → **PowerDesk help**.
- For information on a specific feature or control on a page, click the **Help** button (?) on that page.
- To find all topics that contain specific words, use the **Search** tab in the navigation window of the help file.

Description of LEDs

The LEDs on your Matrox interface card, Extio unit, and Expander unit (if present) provide status information on your connection setup. The following describes the different LEDs:

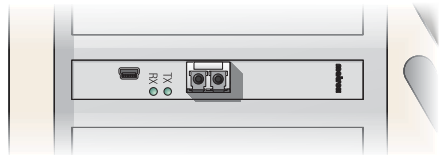
		Red LED	Orange LED	Green LED	No LED (black)
Interface card	RX (receiver) / TX (transmitter)	No receiver or transceiver detected.	Optical cable detected. Invalid transmission.	Optical cable detected. Valid transmission.	Error occurred or no power.
	Optical connectors	No optical cable detected or invalid transmission.	—	Optical cable detected. Valid transmission.	Error occurred or no power.
Extio or Expander unit	Power (⏻)	—	—*	Unit is operational.	No power.
	Status (⚠)	No optical cable detected or invalid transmission.	Optical cable detected. Matrox display driver not detected.*	Optical cable detected. Matrox display driver detected.	—

* The orange LED is enabled for both the Power and Status LEDs while using the Extio Setup Utility.

Locating the LEDs

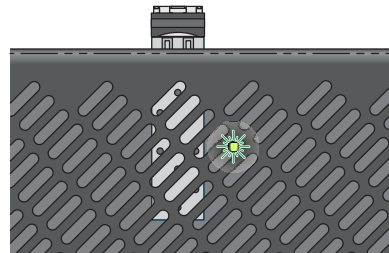
Interface card

On your interface card, the TX (transmitter) and RX (receiver) LEDs are located next to the optical connector on the card bracket.



Extio unit

On your Extio unit, each optical connector has one LED. This LED is located on the side of the optical connector and is visible through the ventilation holes at the top of your unit. The power and status LEDs are visible at the front of the unit.



Configuring your Extio unit

This section describes the options available through the Extio Setup Utility. You can use the setup utility to view information on your Extio setup, to check its operating status, and to enable or disable connectors.



Note: When exiting the Extio setup utility, your system automatically restarts.

Accessing the Extio setup utility

To access the Extio setup utility, press [F7] before your operating system starts.



Note: On certain systems, an umbrella menu may appear instead asking you to press [Space] or another key to access additional ROM menus when your system starts. To access the setup utility, follow the on-screen instructions.

If more than one Extio unit is connected to your system, select the unit you want to configure (you can only configure one unit at a time). Units are listed by serial number. While a unit is selected, its status and power LEDs are blinking orange.

A screenshot of a terminal window with a blue background. The text 'Select a Unit:' is displayed at the top. Below it, two serial numbers are listed: 'BL56174' and 'BL56735'. The first serial number, 'BL56174', is highlighted with a white rectangular background.

Select a Unit:

BL56174
BL56735

Extio setup utility options

System

This screen shows version information for the software used with your Extio devices.

```

Matrox Extio - Setup utility
System  Info  Links  Components  Diagnostics  Options
-----
System information
Setup utility v1.2.63 [Launched from BL56735]
Found 1 card(s) and 1 unit(s) in system.

System view:
Card ==> Unit(s)
| BL56735 |==| BL56174 |

Versions for current Unit:
Card [BL56735] Package [1.16.6]
Virt. Bus [1.2.8] F/W [1.2.84] Config. [1.2.22]

Unit [BL56174] <Extio F2208> Package [1.16.6]
Virt. Bus [0.1.135] F/W [2.0.50] Config. [1.2.22]

--> Select screen
+- Change field
↑↓ Select item
Tab Select field
ESC Save and exit

|| Current unit: BL56174 [Card: BL56735] ||

```

Setup utility	Shows the version of the Extio setup utility. It also lists the number of interface cards and Extio units in your system.
System view	Shows the various Extio devices in your system and their connection to each other. Each line represents a connection link to an interface card installed in your system. Devices are listed in this order: Interface card == Extio unit == Expander unit .
Versions for current unit	Shows the version of the software package (containing the virtual bus, firmware, and configuration software) of the current unit and the interface card in the same connection link.

Info

This screen shows the current hardware status for the selected device.

Matrox Extio - Setup utility				
System	Info	Links	Components	Diagnostics Options
Device information				
Select device: [Unit]		BL56174		
Voltages :				
+12.0 V	: 12.181	[Min	12.181 V	[Max
+18.0 V	: 10.140	10.128 V	10.140 V]
+ 5.0 V (USB)	: 4.956	4.950 V	4.956 V]
+ 5.0 V (USB)	: 4.950	4.950 V	4.956 V]
+ 3.3 V	: 3.284	3.284 V	3.284 V]
Temperatures :				
CPU	: 48.70 °C	[Min	47.72 °C	[Max
GPU	: 65.53 °C	64.91 °C	66.09 °C]
Show current information for the selected device. ←→ Select screen ← Change field ↑↓ Select item Tab Select field ESC Save and exit				
Current unit: BL56174 [Card: BL56735]				

Select device	Select a device (interface card, Extio unit, or Expander unit) to view the voltages for that device. You can select any device in the same connection link. For Extio units, you can also view the temperatures of the various components of your device.
Voltages	Shows the current voltage values for the various power pins of your Extio device. The current voltages and the minimum and maximum voltages recorded while the utility was opened are listed for each component of your device.
Temperatures	Shows the temperatures for the selected Extio unit. The current temperatures and the minimum and maximum temperatures recorded while the utility was opened are listed for each component of your device.

Links

This screen provides information on the fiber optic connectors in the same connection link as the selected Extio unit.

```
Matrox Extio - Setup utility
System  Info  Links  Components  Diagnostics  Options
-----
Optical port status
Select optical port: [Port 0 <Card)]  (BL56735)
Part #: Intel Corp.  [TXN3115D000004 Rev : N/A]
Serial #: 6Z6P6073H10J  Date: 2006/02/16
Laser wavelength: 850 nm
Calibration: Internal  Mon. type: 0x68 <0xB0>
Link status: Link up

Temperature = + 58.500 °C
Supply voltage = 3.349 U
TX bias current = 7.967 mA
TX power = 351.399 µW
RX power = 405.200 µW (Average)

Status: 0x0 Alarm: 0x0, Warning: 0x0

Show the status of the optical ports.

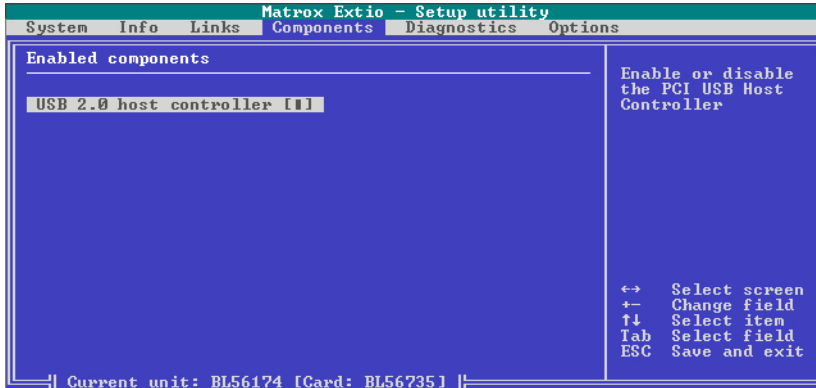
←→ Select screen
+- Change field
↑↓ Select item
Tab Select field
ESC Save and exit

|| Current unit: BL56174 [Card: BL56735] ||
```

If you have multiple interface cards installed in your system, you need to change the Extio unit to view a different connection link.

Select optical port	Select an optical connector to view its information. Optical connectors are listed in this order: <ul style="list-style-type: none">▪ Port 0 - Interface card▪ Port 1 - Extio unit▪ Port 2 - Extio unit▪ Port 3 - Expander unit Optical connectors are identified by the device they're installed in (Card or Unit), by the ID number of that device, and by the connector number.
----------------------------	---

Components

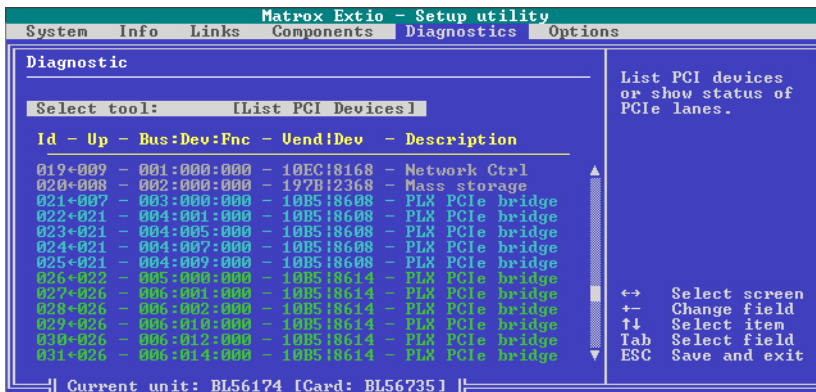


Use this screen to enable or disable hardware components on your system.

USB 2.0 host controller	Enable or disable the USB controller on your Extio unit. While this option is disabled, you can't use a USB device connected to your unit.
--------------------------------	--

Diagnostics

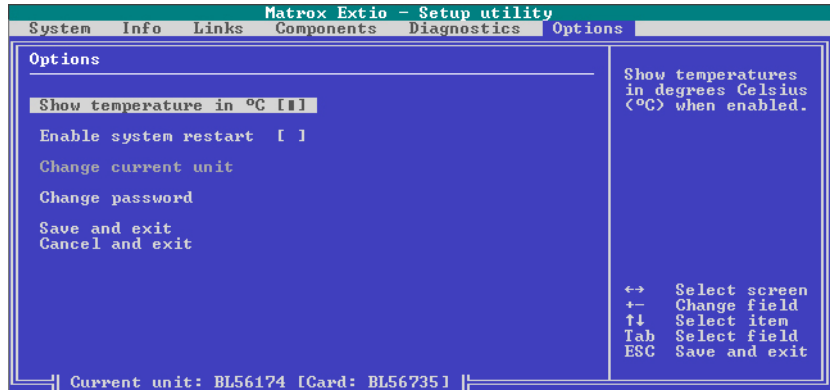
This screen lists information on the PCI devices and lanes used by your system and Extio product.



Select tool	Select the device for which you want information.
--------------------	---

Options

This screen allows you to change the options of your setup utility.



Show temperature in °C	Enable or disable the listing of temperatures in the Info screen in Celsius instead of Fahrenheit.
Enable system restart	Enable or disable the use of the keyboard to restart your system remotely after shutting it down. This feature requires that power be supplied to the +3.3V (Aux) connector of your interface card (see the Info screen for your interface card). Certain systems may not support this feature.
Change current unit	Change the Extio unit you want to configure. This option is unavailable if only one unit is connected.
Change password	Change your current password. The default password is admin . You have three attempts to enter the correct password. If you exceed your three attempts, you need to restart your Extio unit to try again or to save your changes.
Save and exit	Save your current settings and exit the setup utility. This is the same as pressing [Esc]. You need to enter the password to save your changes. The default password is admin .
Cancel and exit	Cancel and discard all changes made to your Extio unit and its associated interface card, and exit the setup utility.



Note: If you lose your password, contact your vendor for information on resetting your password.

Error codes

This section describes the error codes associated with the setup utility.

Error code	Description / Possible solution
501 & 502	The setup utility couldn't identify all the PCI devices in your system. <ul style="list-style-type: none">■ Try removing or disabling any unused PCI devices in your system.■ Try moving your interface card to another PCIe slot.
503	An error occurred while initializing your Extio interface card. Your interface card may be installed in an unsupported PCIe slot. Try moving your interface card to another PCIe slot (such as one that supports graphics hardware).
505	The setup utility has detected too many Extio interface cards in your system. The maximum number of interface cards supported is two (2).

Error messages

This section describes the error messages associated with the firmware of your Extio products.

Error message	Description
Bad EEPROM Header	An error occurred with the setup utility of your Extio product.
Bad EEPROM Chksum	The firmware of your Extio product may have been corrupted.
Bad EEPROM Version	Your Extio products have incompatible versions of their firmware.

If any of these errors occur, contact your vendor to know which firmware version to use with your Extio products.

Troubleshooting

What to do if you have a problem

If you experience problems with your Matrox product:

- Make sure your Matrox card is properly installed, you're using the correct connectors, and that all connectors are properly fastened. For more information, see [“Installing your interface card”](#), page 8 and [“Connecting your Extio unit”](#), page 11.
- Review the documentation provided with your Matrox product, including the information in this section, to see if your problem is already addressed.

If your problem persists, contact Matrox. For more information, see [“Customer support”](#), page 56.

Troubleshooting checklist

Here are some steps to take to troubleshoot the more common issues encountered with your Matrox product.

Before installing and connecting your Extio product

- Make sure your system meets the requirements to support your Extio product. For more information, see [“Specifications”](#), page 49.
- Make sure your optical cables are supported for the distance between your unit and your system. For more information, see [“Maximum distances”](#), page 50.



Note: Extio is validated for point-to-point connections. For applications requiring non-point-to-point connections, including optical couplers and switches, contact your Matrox representative.

- Make sure all previously installed display and audio drivers are removed.
- Make sure your built-in audio device is disabled. For more information, see [page 48](#).
- Make sure any built-in audio or graphics hardware is disabled in your system BIOS. For more information on how to access your system BIOS, see your system manual.

After installing and connecting your Extio product

If your computer doesn't display information or boot after your interface card is installed:

- ❑ Make sure the LED on your interface card is green. This LED is on the front of the interface card next to the optical connector. If the LED is red, try re-inserting the card or try using a different PCIe slot.
- ❑ Make sure your optical cables are properly connected on both the interface card and Extio unit. For more information, see “Description of LEDs”, page 23.
- ❑ Make sure a monitor is connected directly to the monitor connector labeled **1** at the back of your Extio unit. If a monitor is properly connected, try a different connector type on your monitor (DVI-D).
- ❑ If your computer only displays information after the Windows startup screen, check your system BIOS settings to make sure your Extio unit is set as the primary graphics hardware.

Configuring your Extio product

- ❑ Make sure the latest Matrox display driver package is installed. Matrox makes display drivers available on the Matrox Technical Support Web site (www.matrox.com/graphics/support/drivers.)



Note: You may need administrator rights to install certain software. For more information, see Windows documentation or contact your system administrator.

- ❑ Make sure your multi-display setup has been properly configured in Matrox PowerDesk software. For more information, see Matrox PowerDesk help.

Common problems and solutions

This section addresses common problems that could prevent you from using your computer or graphics hardware.

Problem No picture at all, wrong color balance, or screen image off-center

Cause Your monitor video controls may be improperly set.

Solution Adjust your monitor controls (brightness, contrast, and so on). For more information, see your monitor manual.

Cause If your monitor supports multiple input sources (analog/digital), it may be configured to use the wrong source.

Solution Make sure your monitor is using the correct input source. For more information on selecting the input source for your monitor, see your monitor documentation.

Solution Change your connection setup to use a different input source. For more information, see “Connecting your Extio unit”, page 11.

Cause Your computer may have re-enabled your built-in graphics hardware.

Solution To disable your built-in graphics hardware and re-enable your interface card:

- 1** Connect a monitor to the graphics connector on your computer.
- 2** Disable your built-in graphics hardware.

Windows 7/Vista –

a Click **Start** → **Settings*** → **Control Panel** → **Hardware and Sound*** → **Device Manager** → **Continue***.

(* Depending on your version and configuration of Windows, this part of the step may not be necessary.)

- b** Double-click the **Display adapters** list item to expand it, then double-click the name of your built-in graphics hardware.
- c** Click **Driver** → **Disable** → **Yes**.
- d** Click **OK**, then close the Device Manager dialog box.

Windows XP –

a Click **Start** → **Settings*** → **Control Panel** → **Performance and Maintenance*** → **System** (double-click*) → **Hardware** → **Device Manager**.

(* Depending on your version and configuration of Windows, this part of the step may not be necessary.)

- b** Double-click the **Graphics Adapter** list item to expand it, then double-click the name of your built-in graphics hardware.
 - c** Under **Device usage**, select **Do not use this device (disable)**.
 - d** Click **OK** to accept the changes, then close the Device Manager dialog box.
- 3** Shut down and unplug your computer. Disconnect all other peripherals from your computer for at least 1 minute, then restart your computer.

Problem After the startup screen, or after display settings are changed, the screen image is garbled or unusable
(blank screen, rolling or overlapping screen images)

Cause Analog monitors only – The Matrox display driver may be trying to use settings your monitor doesn't support. This can happen if the display resolution was changed to one your monitor doesn't support or if the monitor connected to your computer was changed without changing the display or monitor settings in the software.



WARNING: If incorrect software monitor settings are applied, *some* monitors can be permanently damaged. For more information, see your monitor manual.

Solution Make sure your monitor supports the display mode currently in use. After installing your Matrox product, your system uses either the preferred display mode for your monitor or a display mode of 800 × 600 at 60 Hz.

Solution If none of your displays are available, reinstall your Matrox display drivers. For more information on reinstalling your display driver, see the following solution.

Cause Files on your system may have been deleted or corrupted.

Solution Uninstall, then reinstall Matrox software:




Note: Before removing software, make sure you have all the necessary files to reinstall software that may still be needed. Also, make sure the display driver you reinstall supports *all* Matrox products in your computer. For more information, see “[Selecting the proper display driver](#)”, page 20.



Note: You may need administrator rights to uninstall certain software. For more information, see Windows documentation.

Windows 7/Vista/XP –

1 If your primary display is unusable, restart your computer in VGA mode:

- a** Windows 7/Vista – Click **Start**, point to the arrow (), then select **Restart** to restart your computer.

Windows XP – Click **Start** → **Shut Down*** → **Restart** → **OK*** to restart your computer.

(* Depending on your version and configuration of Windows, this part of the step may not be necessary.)

If your primary monitor is unusable, see your system manual for information on how to restart your computer using a hardware control.

- b** *Before* Windows starts, press [F8] for the Windows startup menu to appear. (If [F8] doesn't work, instead try pressing and holding [Ctrl] before Windows starts.)
- c** Select "VGA mode" (or "Low resolution video"), then press [Enter].



Note: If your system stops responding while it's in VGA mode, select "Safe mode" instead.

- 2** To uninstall Matrox software:

Windows 7/Vista –

- a** Click **Start** → **Settings*** → **Control Panel** → **Programs*** → **Programs and Features** → **Matrox PowerDesk** → **Uninstall** → **Yes**.

(* Depending on your version and configuration of Windows, this part of the step may not be necessary.)

- b** Click **Matrox M-Series WDDM Driver** (or **Matrox M-Series XDDM Driver**) → **Uninstall** → **Yes**.

Windows XP –

- a** Click **Start** → **Settings*** → **Control Panel** → **Add/Remove Programs** (double-click*) → **Matrox PowerDesk** → **Change/Remove** → **Yes**.

(* Depending on your version and configuration of Windows, this part of the step may not be necessary.)

- b** Click **Matrox M-Series XDDM Driver** → **Change/Remove** → **Yes**.

- 3** Restart your computer for the changes to take effect.
- 4** After your computer has restarted, install the latest display driver for your Matrox card. You may also need to reinstall other Matrox software.

Problem Built-in network hardware doesn't work after card is installed

Cause The installation of a card may have caused your computer to reallocate system resources.

Solution Try reinstalling your network drivers.

Solution Try moving your Matrox card to another PCIe slot in your computer. For instructions on how to safely install your Matrox card, see "Installing your interface card", page 8.

Cause You may be using Windows XP Service Pack 2.

Solution Install Service Pack 3 for Windows XP. To obtain a Microsoft Service Pack, contact your system vendor or see the Microsoft Web site (www.microsoft.com).

Problem USB keyboard or mouse doesn't work

Cause Windows 7/Vista/XP – Your keyboard, mouse, or USB Human Interface Device (HID) may not be detected by Windows.

Solution Make sure the USB connectors on your Extio unit are enabled in Windows Device Manager.

Windows 7/Vista –

1 Click **Start** → **Settings*** → **Control Panel** → **Hardware and Sound*** → **Device Manager** → **Continue***.

(* Depending on your version and configuration of Windows, this part of the step may not be necessary.)

2 Double-click **Universal Serial Bus controllers** to expand it. Locate the two controllers named **NEC PCI to USB Host Controller**.

3 For both controllers, double-click **NEC PCI to USB Host Controller**, then click **Driver** → **Enable** → **Yes**.

4 Double-click **Standard Enhanced PCI to USB Host Controller**.

5 Click **Driver** → **Enable** → **Yes**.

6 Click **OK**, then close the Device Manager dialog box.

Windows XP –

1 Click **Start** → **Settings*** → **Control Panel** → **Performance and Maintenance*** → **System** (double-click*) → **Hardware** → **Device Manager**.

(* Depending on your version and configuration of Windows, this part of the step may not be necessary.)

2 Double-click **Universal Serial Bus controllers** to expand it. Locate the two controllers named **NEC PCI to USB Host Controller**.

3 For both controllers, double-click **NEC PCI to USB Host Controller**, then under **Device usage**, select **Use this device (enable)**.

4 Double-click **Standard Enhanced PCI to USB Host Controller**.

5 Under **Device usage**, select **Use this device (enable)**.

6 Click **OK** to accept the changes, then close the Device Manager dialog box.

Solution Make sure your device is enabled in Windows Device Manager.

Windows 7/Vista –

1 Click **Start** → **Settings*** → **Control Panel** → **Hardware and Sound*** → **Device Manager** → **Continue***.

(* Depending on your version and configuration of Windows, this part of the step may not be necessary.)

- 2 Depending on your device, double-click **Human Interface Device, Keyboard, or Mice and other pointing devices** to expand it, then double-click the name of your device.
- 3 Click **Driver** → **Enable** → **Yes**.
- 4 Click **OK**, then close the Device Manager dialog box.

Windows XP –

- 1 Click **Start** → **Settings*** → **Control Panel** → **Performance and Maintenance*** → **System** (double-click*) → **Hardware** → **Device Manager**.

(* Depending on your version and configuration of Windows, this part of the step may not be necessary.)

- 2 Depending on your device, double-click **Human Interface Device, Keyboard, or Mice and other pointing devices** to expand it, then double-click the name of your device.
- 3 Under **Device usage**, select **Use this device (enable)**.
- 4 Click **OK** to accept the changes, then close the Device Manager dialog box.

Problem System doesn't wake from sleep/standby mode

Cause You may be using a sleep mode that doesn't support wake-from-sleep from a remote USB keyboard.

Solution Make sure your system BIOS is set to use *Save to RAM* (or S3) stand-by mode. For more information on setting up your BIOS, see your system manual.

Problem Matrox PowerDesk won't start

Cause Your built-in graphics hardware may still be enabled.

Solution Make sure any graphics hardware is disabled in your system BIOS. For more information on how to access your system BIOS, see your system manual.

Cause The installation of a program using a mirror driver may have modified your Matrox software files.

Solution Reinstall the programs in the proper sequence.

- 1 Uninstall the program using the mirror driver.
- 2 Reinstall your Matrox software.
- 3 Reinstall the program using the mirror driver.

Problem Using multiple displays under Windows 7/Vista/XP, program doesn't work with your Matrox product

Cause Your Matrox card may not be controlling your primary display. The graphics hardware that controls your primary display is the one that first displays information when you restart your computer.

A program that doesn't recognize multiple displays may not work with graphics hardware unless it's controlling your primary display.

Your computer BIOS (Basic Input/Output System) and the slot type (PCI™ or PCIe – see “Choose an expansion slot”, page 9) of each graphics hardware help determine which graphics hardware controls your primary display.

Solution If you're having problems with a program that can be moved on your Windows desktop, run this program on your primary display. Make sure the program window doesn't overlap any other display. If the program doesn't work with the graphics hardware controlling your primary display, or you want your main graphics hardware to control your primary display, see the other solutions.

Solution Windows XP and Windows Server 2003 – If you're having problems with a program that can't be moved on your Windows desktop, try changing your primary display.

- 1 Right-click your Windows desktop background, then click **Properties** → **Settings**.
- 2 Select the display you want as the primary display and enable **Use this device as the primary monitor**.
- 3 Click **OK** or **Apply** for your changes to take effect.

Solution Change the configuration of your computer BIOS so that the slot type of your main graphics hardware has priority for becoming the primary display. For information on how to change your computer BIOS settings, see your system manual.

If your computer BIOS doesn't let you select which slot type has priority for becoming the primary display, a BIOS update may be available to let you do this. (The BIOS of most computers can be updated with software.) For a possible BIOS update for your computer, contact your system vendor.

Solution If there's a graphics controller built into the motherboard of your computer, by changing your computer BIOS settings, you may be able to change which device controls your primary display. For more information, see your system manual.

Solution If you don't need to use the graphics hardware that's controlling your primary display, remove it from your computer. If your primary display is controlled by the motherboard of your computer, see your system manual for information on how to disable this graphics controller.

Cause The program you're using may not work properly with systems using more than one display at a time.

Solution An update may be available for the program you're using. This update may fix problems this program has with multi-display systems. For more information, contact the software distributor for the program you're using.

Solution If you're using multiple displays in *independent* mode, try using *stretched* mode instead. Programs that don't work in independent mode may work in stretched mode. For more information, see Matrox PowerDesk help.

Problem **Not all graphics hardware in the computer are fully supported**
(Software doesn't work with a certain graphics hardware, or another graphics hardware doesn't work at all)

Cause If you have different models of graphics hardware in your computer, your Matrox display driver may not support all the graphics hardware in your computer.

Solution Under Windows 7/XP, you can use different XDDM display drivers for different products. Software that depends on a specific display driver feature may not work if your graphics hardware is using different display drivers. For more information, see [“Selecting the proper display driver”](#), page 20.

Solution Disable or remove any graphics hardware not supported by the display driver you want to use. If there's graphics hardware built into the motherboard of your computer that's not supported by your software, see your system manual for information on how to disable this graphics hardware.

Cause **Windows 7/Vista/XP** – If the Windows method for display driver installation was used (instead of running the setup program included with your Matrox display driver), the driver may not be installed for all the graphics hardware it supports.

Solution Run the setup program included with the Matrox display driver. The setup program automatically installs the display driver for each Matrox graphics hardware it supports.

Problem **Screen image defects appear, program doesn't run properly, or Windows doesn't work properly**
(example: mouse pointer not drawn properly)

Cause Some programs may not work properly with some Matrox acceleration.

Solution **Windows 7/Vista/XP** – Disable Windows effects:

Windows 7/Vista –

- 1 Click **Start** → **Control Panel** → **System and Security*** → **System** → **Advanced system settings**.

(* Depending on your version and configuration of Windows, this part of the step may not be necessary.)

- 2 Under **Performance**, click **Settings**.
- 3 Disable one or more features.
- 4 Click **OK** → **OK**.

Windows XP –

- 1 Right-click your Windows desktop background, then click **Properties** → **Appearance** → **Effects**.
- 2 Disable one or more features.
- 3 Click **OK** → **OK**.

Solution If possible, update your Matrox display driver. Matrox makes new display drivers available on the Matrox Technical Support Web site (www.matrox.com/graphics/en/support/drivers).



Note: If you identify a program that doesn't work well with Matrox acceleration, please contact Matrox technical support (see page 56) and describe the problem. This information may help us come up with a fix or work-around in a future driver release.

Problem Program window or dialog box doesn't appear on screen

Cause Another window or dialog box may be covering the window or dialog box you want to see.

Solution Move, close, or minimize any window or dialog box that may be covering the window or dialog box you want to see.

Cause If you're using multi-display mode, the program window or dialog box may be in a display or on a monitor that's unusable. (For example, your monitor may not be properly connected or configured.)

Solution Make sure all the displays and monitors you want to use are usable. For more information, see other troubleshooting items in this guide.

Cause The software may be using a display you didn't intend to use or the software may be configured to use more displays than the actual number of monitors you have.

Solution Disable the display:

Windows 7/Vista/XP –

- 1 From the main interface of PowerDesk (see “[Accessing PowerDesk](#)”, page 22), click **Multi-Display Setup**.
- 2 In the work area, select the display you want to disable, and then drag it to the **Unused outputs** section. (You can also disable the display by right-clicking it and selecting **Remove**.)
- 3 Click **OK** to apply your changes.

Cause The program window or dialog box may be somewhere off-screen.

Solution If the program window you want to see is named on the Windows taskbar, right-click on it and select **Maximize**. (If you click **Restore** the program window goes back to its previous position. To fix this problem, see the other solutions.)

Solution Manually move the program window or dialog box:

- 1 Make sure the window you want to move is selected, then press [Alt]+[Space].
- 2 If you see a pop-up menu, click **Move**. If you don't see a pop-up menu, press [M] (for **Move**).
- 3 Press on one of the arrow keys once and move your mouse pointer to where you want the window or dialog box to appear, then click. The program window or dialog box should appear where you clicked.

Problem Display on digital monitor appears blurry or uses only a portion of the screen

Cause You may be using a lower display resolution than what your digital monitor supports. If your monitor supports display scaling, the image on your screen may appear blurry. If display scaling isn't supported, the display may use only a portion of your screen.

Solution Select the highest display resolution available. This generally results in better image quality.

Problem Can't apply Windows Aero color scheme

Cause You may be using a display driver designed for Windows XP (XDDM).

Solution Windows Aero® is supported only with a display driver designed for Windows 7/Vista (WDDM). For more information, see “[Selecting the proper display driver](#)”, page 20.

Cause You may be using a 16-bit color palette.

Solution Try using a 32-bit color palette instead.

Problem Under Windows Server 2008/2003, PowerDesk feature isn't available

Cause By default, Windows Server disables hardware acceleration. Some PowerDesk features require hardware acceleration to be enabled.

Solution Set the hardware acceleration for each display to **Full**.

Windows Server 2008/2008 R2 –

- 1 Right-click your Windows desktop background, then click **Screen resolution** → **Advanced settings** → **Troubleshoot** → **Change settings**.
- 2 Set the **Hardware acceleration** slider to **Full**.

Windows Server 2003 –

- 1 Right-click your Windows desktop background, then click **Properties** → **Settings** → **Advanced** → **Troubleshoot**.
- 2 Set the **Hardware acceleration** slider to **Full**.

If you have multiple displays, choose a display before clicking **Advanced** or **Advanced settings**.

Problem Mouse pointer flickers or disappears when it's over a video window

Cause You may be using a customized mouse pointer. Windows draws customized mouse pointers in a way that may cause them to flicker or disappear while they're over a video window.

Solution Windows 7/Vista/XP – Use default Windows mouse pointers:

- 1 Windows 7/Vista – Click **Start** → **Settings*** → **Control Panel** → **Hardware and Sound*** → **Mouse** (double-click*).

(* Depending on your version and configuration of Windows, this part of the step may not be necessary.)

Windows XP – Click **Start** → **Settings*** → **Control Panel** → **Printers and Other Hardware*** → **Mouse** (double-click*).

(* Depending on your version and configuration of Windows, this part of the step may not be necessary.)

- 2 Click the **Pointers** tab.
- 3 In the **Scheme** box, select (or reselect) “**(None)**”, then click **OK**.

Sound

The following troubleshooting items address problems related to sound cards.

Problem No sound, sound doesn't record, or sound output is distorted or too loud

Cause The audio driver for your product may not be installed. For example, the driver installs only if your interface card is directly connected to your computer with a USB cable.

Solution Reinstall your Matrox software.

Windows 7 –

- 1** Uninstall your Matrox software:
 - a** Click **Start** → **Settings*** → **Control Panel** → **Programs*** → **Programs and Features** → **Matrox PowerDesk** → **Uninstall** → **Yes**.

(* Depending on your version and configuration of Windows, this part of the step may not be necessary.)
 - b** Click **Matrox M-Series WDDM Driver** (or **Matrox M-Series XDDM Driver**) → **Uninstall** → **Continue*** → **Yes**.

(* Depending on your configuration of Windows, this part of the step may not be necessary.)
 - c** When prompted to restart, select **Continue working**.



Note: If you restart your computer at this step, you need to reinstall your Matrox software and restart the procedure from Step 1.

- 2** From the control panel, click **System and Security*** → **System** → **Device Manager** → **Sound, video and game controller** (double-click*).

(* Depending on your configuration of Windows, this part of the step may not be necessary.)
- 3** Under **Sound, video and game controllers**, right-click your **Extio Sound AAXXXX** (where AAXXXX is the serial number of your Extio unit) and click **Uninstall** → **OK**.
- 4** Restart your computer for the changes to take effect.
- 5** After your computer has restarted, install the latest display driver for your Matrox card. You may also need to reinstall other Matrox software.

Windows Vista –

- 1** Uninstall your Matrox software:
 - a** Click **Start** → **Settings*** → **Control Panel** → **Programs*** → **Programs and Features** → **Matrox PowerDesk** → **Uninstall** → **Yes**.

(* Depending on your version and configuration of Windows, this part of the step may not be necessary.)
 - b** Click **Matrox M-Series WDDM Driver** (or **Matrox M-Series XDDM Driver**) → **Uninstall** → **Continue*** → **Yes**.

(* Depending on your configuration of Windows, this part of the step may not be necessary.)
 - c** When prompted to restart, select **Continue working**.



Note: If you restart your computer at this step, you need to reinstall your Matrox software and restart the procedure from Step 1.

- 2** From the control panel, click **System and Maintenance*** → **System** → **Device Manager** → **Sound, video and game controller** (double-click*).

(* Depending on your configuration of Windows, this part of the step may not be necessary.)
- 3** Right-click your **Extio Sound AAXXXX** (where AAXXXX is the serial number of your Extio unit) and click **Uninstall** → **OK**.
- 4** Restart your computer for the changes to take effect.
- 5** After your computer has restarted, install the latest display driver for your Matrox card. You may also need to reinstall other Matrox software.

Windows XP –

- 1** Uninstall your Matrox software:
 - a** Click **Start** → **Settings*** → **Control Panel** → **Add/Remove Programs** (double-click*) → **Matrox PowerDesk** → **Remove** → **Yes**.

(* Depending on your version and configuration of Windows, this part of the step may not be necessary.)
 - b** Click **Matrox M-Series XDDM Driver** → **Remove** → **Yes**.

- c When prompted to restart your system, click **No**.



Note: Don't restart your computer now. If you restart your computer at this step, you need to reinstall your Matrox software and restart the procedure from Step 1.

- 2 From the control panel, click **Performance and Maintenance*** → **System** → **Hardware** → **Device Manager** → **Sound, video and game controllers** (double-click*).

(* Depending on your configuration of Windows, this part of the step may not be necessary.)

- 3 Right-click your **Extio Sound AAXXXX** (where *AAXXXX* is the serial number of your Extio unit) and click **Uninstall** → **OK**.
- 4 Restart your computer for the changes to take effect.
- 5 After your computer has restarted, install the latest display driver for your Matrox card. You may also need to reinstall other Matrox software.



Cause If the sound problem is with a particular device (for example, TV or speaker), the volume control on the device itself may need adjusting.

Solution Adjust the volume control on the device itself.

Cause Windows 7/Vista/XP – Your sound card's Windows software settings may be incorrect. Specifically, input or output may be disabled, or volume levels may be too low or too high.

Solution Make sure your sound card's Windows software settings are correct.

Windows 7 –

- 1 Right-click the speaker icon ( or ) on the Windows taskbar.
If you *don't* see the speaker icon:
 - a Right-click your windows taskbar, and select **Properties**.
 - b Under Notification area, click **Customize**.
 - c Next to Volume, select **Show icon and notifications**.
 - d Click **OK**.
 - e Right-click the speaker icon on the taskbar.
- 2 Select **Playback Devices** and make sure all the devices you want to use are listed as working. If a device is listed as not working, right-click the device icon and select **Enable**.



Note: To see all your devices, right-click anywhere on the property sheet and make sure **Show Disabled Devices** and **Show Disconnected Devices** are enabled.

- 3 For each device you want to use, double-click the device icon and select **Levels**. Make sure the volume slider value is okay and the volume button is enabled (🔊). Click **OK**. (To test the volume of a playback device, right-click the device icon in the **Playback** property sheet and select **Test**.)



- 4 Select **Recording** and make sure all the devices you want to use are listed as working. If a device is listed as not working, right-click the device icon and select **Enable**.



Note: To see all your devices, right-click anywhere on the property sheet and make sure **Show Disabled Devices** and **Show Disconnected Devices** are enabled.

- 5 For each device you want to use, double-click the device icon and select **Levels**. Make sure the volume slider value is okay (if you're not sure, try a value of 50) and the volume button is enabled (🔊). Click **OK**. (To test the volume of a recording device, make sure an audio source plugged into it and playing, then watch the volume meter next to the audio device icon. The volume meter should be between 60 and 100%.)
- 6 To hear an input device, select **Listen** and make sure **Listen to this device** is enabled. Also make sure no other input device has this option enabled. You can only hear one input device at a time. A delay may occur through playback.

Windows Vista –

- 1 Right-click the speaker icon (🔊) on the Windows taskbar.
If you *don't* see the speaker icon:
 - a Right-click the taskbar and select **Properties** → **Notification area**.
 - b Under **System icons**, enable the **Volume** check box.
 - c Click **OK**.
 - d Right-click the speaker icon on the Windows taskbar.
- 2 Select **Playback Devices** and make sure all the devices you want to use are listed as working. If a device is listed as not working, right-click the device icon and select **Enable**.



Note: To see all your devices, right-click anywhere on the property sheet and make sure **Show disabled devices** and **Show Disconnected Devices** are enabled.

- 3 For each device you want to use, double-click the device icon and select **Levels**. Make sure the



volume slider value is okay and the volume button is enabled (🔊). Click **OK**. (To test the volume of a playback device, right-click the device icon in the **Playback** property sheet and select **Test**.)

- 4 Select **Recording** and make sure all the devices you want to use are listed as working. If a device is listed as **Disabled**, right-click the device icon and select **Enable**.



Note: To see all your devices, right-click anywhere on the property sheet and make sure **Show disabled devices** and **Show Disconnected Devices** are enabled.

- 5 For each device you want to use, double-click the device icon and select **Levels**. Make sure the volume slider value is okay (if you're not sure, try a value of 50) and the volume button is enabled (🔊). Click **OK**. (To test the volume of a recording device, make sure an audio source is plugged into it and playing, then watch the volume meter next to the audio device icon. The volume meter should be between 60 and 100%.)

Windows XP –

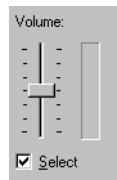
- 1 Double-click the speaker icon (🔊 or 🎧) on the Windows taskbar.

If you *don't* see the speaker icon:

- a Click **Start** → **Settings*** → **Control Panel** → **Sound, Speech, and Audio Devices*** → **Sounds and Audio Devices** (double-click*).

(* Depending on your configuration of Windows, this part of the step may not be necessary.)

- b Enable “**Place volume icon in the taskbar**”.
 - c Click **OK**.
 - d Double-click the speaker icon on the taskbar.
- 2 Click **Options** → **Properties**.
 - 3 Click the **Recording** button, enable all check boxes in the list box, then click **OK**.
 - 4 For the **Line In** and/or **Microphone** controls, make sure the **Volume** slider levels are okay (if you're not sure, try half level), and the appropriate **Select** check box is enabled.
 - 5 Click **Options** → **Properties**.
 - 6 Click the **Playback** button, enable all check boxes in the list box, then click **OK**.
 - 7 For the **Master**, **Line**, **Aux**, and/or **Wave** controls, make sure the **Volume** sliders are at one-quarter to one-half levels (if you're not sure, try half level), and the **Mute** check boxes are cleared.



- 8 Close the dialog box.



Note: Depending on your sound driver, certain labels may be different. For example, **Line In** may be labeled **Line**.

Cause Your system may have built-in audio hardware that conflicts with the audio hardware of your Matrox unit.

Solution Disable the built-in audio hardware in your system.

Windows 7/Vista –

- 1 Click **Start** → **Control Panel** → **Hardware and Sound** * → **Device Manager** → **Continue***.

(* Depending on your configuration of Windows, this part of the step may not be necessary.)

- 2 Under **Sound, video and game controllers**, right-click your built-in audio hardware and select **Disable**. For more information on the audio hardware in your system, see your system manual.

- 3 Click **Yes**.

Windows XP –

- 1 Click **Start** → **Settings*** → **Control Panel** → **Performance and Maintenance*** → **System** → **Hardware** → **Device Manager**.

(* Depending on your configuration of Windows, this part of the step may not be necessary.)

- 2 Under **Sound, video and game controllers**, right-click your built-in audio hardware and select **Disable**. For more information on the audio hardware in your system, see your system manual.

- 3 Click **Yes** → **Yes**. For changes to take effect, your computer must be restarted.

Product information

Specifications

Extio unit

	F2208	F2408	F2408E Expander*
Monitors supported	2	4	4
Digital monitor support		DVI, DisplayPort	
Memory		1 GB	
Maximum analog resolution		1920 × 1200†	
Maximum digital (DVI) resolution		Up to 2048 × 1152	
Maximum DisplayPort resolution		Up to 2048 × 1152 plus 2560 × 1600 and 2048 × 2048	
Operating systems supported		Windows 7, Windows Server 2008 R2, Windows Server 2008, Windows Vista, Windows XP, and Windows Server 2003	
Dimensions		29.97 cm × 2.92 cm × 14.73 cm / 11.80" × 1.15" × 5.80"	
Laser emissions		850 µm laser compliant to 21CFR, Subpart J, Class 1	
EMC Certifications		Class A: ACMA, CE, FCC, VCCI, Korean notice	
Safety Certifications (I.T.E.)		CSA	

* Provided with an OM2 multi-mode 50/125 µm optical cable – 5 meters / 16 feet.

† DisplayPort to HD-15 adapter sold separately.

Interface card

Interface card	Optical
Card type	PCIe x1
Form factor	Low-profile
Cable type supported	LC-LC optical, Duplex
Maximum distances	OM1 multimode 62.5/125 µm (max. 70 meters / 230 feet) OM2 multi-mode 50/125 µm cable (max. 150 meters / 492 feet) OM3 multi-mode 50/125 µm cable (max. 380 meters / 1247 feet) OM4 multi-mode 50/125 µm cable (max. 400 meters / 1312 feet) Single-mode 9/125 µm cable (max. 1000 meters / 3280 feet)*
Dimensions	16.76 cm × 6.8 cm × 1.91 cm / 6.60" × 2.677" × 0.75"
EMC Certifications	Class A: ACMA, CE, FCC, VCCI, Korean notice
Safety Certifications (I.T.E.)	CSA

* Requires a single-mode transceiver upgrade. For more information, contact your sales representative.

Environmental

Temperature, operational	Operating: 0 to 55 °C (32 to 131 °F)
Temperature, non-operational storage and transportation	-40 to 70 °C (-40 to 158 °F)
Humidity, operational (indoor)	20 to 80% (non-condensing)
Humidity, non-operational storage and transportation	5% to 95% (non-condensing)
Atmospheric pressure, operational	650hPa (3,580 meters / 11,745 feet) to 1013hPa (0 meters / 0 feet)
Atmospheric pressure, non-operational and transportation	192hPa (12,000 meters / 39,370 feet) to 1020hPa (-50 meters / -164 feet)
Estimated MTBF (Mean Time Before Failure)	Interface card: 70.81 years @ 40 °C Extio F2208 unit: 26.87 years @ 40 °C (excluding power supply) Extio F2408 unit: 23.20 years @ 40 °C (excluding power supply) Extio F2408E Expander unit: 22.68 years @ 40 °C (excluding power supply)

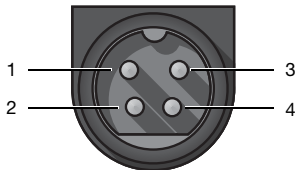
Power consumption and supply voltage

	Interface card
Maximum power consumption	6.5 W
	Extio unit
Power requirements	12 to 28.5 V DC ($\pm 5\%$, ripple $< 1\%$ (peak-to-peak)), maximum 5 A (5 A fuse for overcurrent protection)
Power connector	DIN 4 female (4-pin)
Maximum power consumption*	25 W

* Calculated for the following configuration: a USB keyboard and mouse, 2 other USB devices, and 4 DisplayPort monitors.

	External power supply (included)
Input AC voltage range	90 to 264 V AC
Input frequency	47/63 Hz
Input connector	IEC 60320-C14
Output voltage	12 V DC
Output connector	DIN 4 male (4-pin) with lock
Maximum power output	60 W

Pin usage for DIN 4 male connector



Pin	Signal	Pin	Signal
1	Negative	3	Positive
2	Negative	4	Positive

Audio

USB audio	1.0 compliant
Stereo audio	2 channel
Bits per sample	16 bits per channel, 2 channel (Left and Right)
Sampling rate	48 kHz
Frequency response	20 Hz to 20 kHz
Audio connector type	3.5 mm stereo audio jacks
Line-in connector	Full-scale voltage: 1 V _{RMS} (2.83 V _{P-P}) Minimum impedance: 10k Ohms THD+N: -75 dB SNR: 85 dB
Line-out connector	Full-scale voltage: 1 V _{RMS} (2.83 V _{P-P}) Minimum impedance: 10k Ohms THD+N: -80 dB SNR: 90 dB
Headphones connector	Minimum impedance: 16 Ohms THD+N: -75 dB SNR: 87 dB
Microphone connector	THD+N: -69 dB SNR: 80 dB

Notes

- Your Matrox graphics card is 100% VGA compatible, It's also compatible with the following VESA® standards: VBE 3.0 (Super VGA modes), DPMS (energy saving), and DDC-2B (Plug-and-Play monitor), DDC-CI, and DisplayPort 1.1a.
- You must use the same firmware version for your interface cards and Extio units. Using different firmware versions for your Extio products isn't supported. For more information on firmware versions, contact your system integrator or the hardware vendor of your Extio product.
- To get the most of your Matrox product, we recommend using the highest color palette setting (a 32-bit color palette) for all your displays.
- The display resolutions and refresh rates available depend on your Matrox graphics hardware, display driver, software monitor settings, and monitor. For information on the capabilities of your monitor, see your monitor documentation.

- The display resolution and monitor settings (such as refresh rate) will be the ones selected in Matrox PowerDesk multi-display settings.
- Only basic USB keyboard functionality is supported with your Extio unit before your operating system starts. Advanced keyboard features (such as audio controls or application keys) and mouse are supported only after your operating system starts.
- Your Extio unit supports wake from sleep/standby in *Save to RAM* (or S3) standby mode. Standby mode is defined in your system BIOS.
- Only HID (Human Interface Devices) USB devices (such as a keyboard or mouse) are supported with an Extio unit.
- Isochronous USB devices (for example, USB audio and video devices such as a microphone or Web cam) aren't supported with an Extio unit.
- An Extio F2208 or F2408 unit can only be connected to an interface card. An F2408E Expander unit can only be connected to an Extio F2408 unit.
- You can use up to two (2) interface cards in your system.
- Certain systems may not be supported with your Extio unit. For more information, contact your Matrox sales representative.

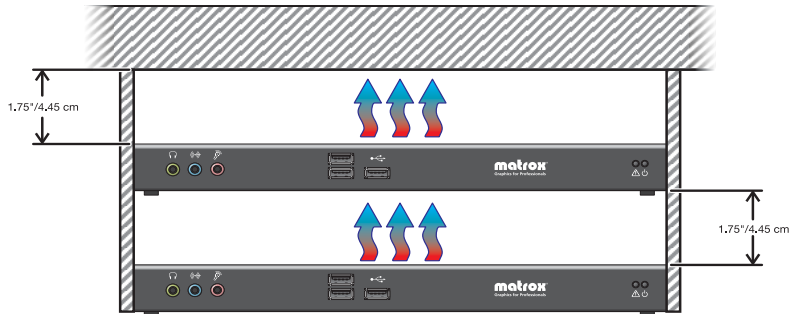
Digital flat panel information

- DDWG (Digital Display Working Group) DVI (Digital Visual Interface) 1.0 support
- EDID (Extended Display Identification Data) 1.2 and 1.3 support
- VESA (Video Electronics Standards Association) Display Data Channel (DDC) support
- Compatible with VESA (Video Electronics Standards Association) DisplayPort 1.1a

Appendix A – Providing adequate airflow

Because the body of your Extio unit is used to disperse heat, it requires adequate airflow to ensure proper operation and to prevent damage. The following provides guidelines for effective airflow around your Extio unit.

- **Don't block the ventilation holes of your unit** – The ventilation holes around your unit should be unobstructed. Always operate or mount your units rightside up.



To prevent airflow restriction, we recommend allowing *at least* 1.75 inches (4.45 cm) of clearance between the top of your unit and the mounting surface. More space may be required depending on your environment.

- **Operate your unit in a well ventilated location** – Don't operate your unit near a heat source or restrict airflow to your unit (for example, by operating your unit inside a desk cabinet).
- **Monitor your ambient temperatures** – Make sure the ambient temperature doesn't exceed the maximum recommended temperatures.

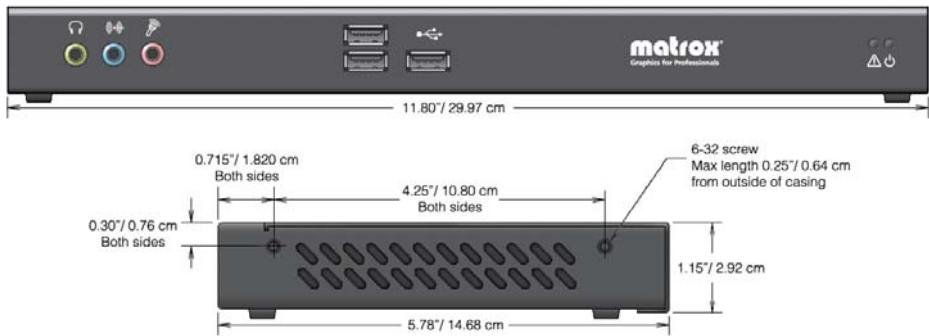
For more information on supported operating temperatures, see [“Environmental”, page 50](#).

Appendix B – Mounting your units

This section provides guidelines for mounting your Extio unit.

Mounting bracket

Your Extio unit can be mounted in a standard rack or under any hard surface (such as a desk).



- The mounting holes on the unit are 4.25 inches (10.80 cm) apart. Use four 6-32 screws. These screws can enter the casing by a maximum of 0.25 inches (6.35 mm).



WARNING: Using screws that are longer or larger than those specified may damage your Matrox hardware.

- Use a hand screwdriver to carefully tighten each screw. Make sure not to overtighten the screws.
- If installing your unit in a rack, fasten it to the rack as per your rack's instructions.

Mounting guidelines

To prevent damage to your Matrox hardware, read the following guidelines before mounting your Matrox hardware:

- Make sure not to block the ventilation holes on your unit.
- Don't stack anything directly over the unit.
- Make sure all cables and cords are slack.
- Make sure the ambient temperature doesn't exceed the maximum recommended temperatures. For more information, see ["Environmental"](#), page 50.

Customer support

Matrox Web

Our Web site has product literature, press releases, technical material, a sales office list, trade show information, and other relevant material. Visit the Matrox Graphics Web site at www.matrox.com/graphics.

Technical support

Matrox values your business and offers professional support for your Matrox product.

If your product was purchased through a Matrox dealer, contact your dealer for product support. This is the quickest and most effective method of technical assistance. Your dealer is familiar with your complete system.

If your product was purchased through Matrox, contact your Matrox representative or visit our technical support Web site at www.matrox.com/graphics/support.

Information we need

Please give a complete description of the problem, and include:

- Matrox card serial number, model number, revision number, BIOS number, driver type and version, and memory address at which the Matrox card is installed.
- Computer brand and model name.
- Monitor brand and model name.
- Operating system, version, and service pack.
- Brand and model of any other cards and devices installed on your system.

Program specific problems

If a problem appears with a specific program, please give us the following information:

- Display settings (color palette, display resolution, and so on) applied when the problem occurs.
- If possible, take note of the file and segment address that caused the problem.
- Detailed steps known to cause the bug, so we can reproduce it.

Driver and software download

A more recent display driver may support more features and may offer increased capabilities (such as higher display resolutions). Matrox makes the latest display drivers, software, and system utilities available on the Matrox Technical Support Web site (www.matrox.com/graphics/en/support/drivers).

View your warranty information

Matrox makes warranty information available on the Matrox site (www.matrox.com/graphics/en/about/warranty).

Register your Matrox product

Please register online (www.matrox.com/graphics/en/registration) to be eligible for customer support, new product announcements, and information on special offers and upcoming events.

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USA

FCC Compliance Statement

Remark for the Matrox hardware products supported by this guide This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING Changes or modifications to this unit not expressly approved by the party responsible for the compliance could void the user's authority to operate this equipment. The use of shielded cables for connection of the monitor to the card is required to meet FCC requirements.

CANADA

(English) Industry Canada Compliance Statement

Remark for the Matrox hardware products supported by this guide These digital apparatus does not exceed the Class A limits for radio noise emission from digital devices set out in the Radio Interference Regulation of Industry Canada.

(Français) Conformité avec les exigences du ministère de l'Industrie Canada

Remarque sur les produits matériels Matrox couverts par ce guide Ce présent appareil numérique n'émet aucun bruit radioélectrique dépassant les limites applicables aux appareils numériques de Classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par Industrie Canada.

USA

(English) FDA (Food and Drug Administration) requirements for Laser Products

Remark for the Matrox hardware products supported by this guide This product includes a 850 nm Laser Product compliant to 21CFR Subpart J Class 1.

JAPAN

VCCI Compliance Statement

Remark for the Matrox hardware products supported by this guide This is a Class A prlegaoeduct based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

KOREA

KCC 전자파 적합 등록 안내 (Class A)

이 기기는 업무용 (A 급) 으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정 이외의 지역에서 사용할 수 있습니다.

(English) European user's information – Declaration of Conformity

Remark for the Matrox hardware products supported by this guide These devices comply with EC Directive 2004/108/EC for a Class A digital device. They have been tested and found to comply with EN55022/CISPR22 and EN55024/CISPR24. In a domestic environment these products may cause radio interference in which case the user may be required to take adequate measures. To meet EC requirements, shielded cables must be used to connect the monitor and other peripherals to the card. These products have been tested in a typical class A compliant host system. It is assumed that these products will also achieve compliance in any class A compliant system.

(Français) Informations aux utilisateurs Européens – Déclaration de conformité

Remarque sur les produits matériels Matrox couverts par ce guide Ces unités sont conformes à la directive communautaire 2004/108/EC pour les unités numériques de classe A. Les tests effectués ont prouvé qu'elles sont conformes aux normes EN55022/CISPR22 et EN55024/CISPR24. Le fonctionnement de ces produits dans un environnement résidentiel peut causer des interférences radio, dans ce cas l'utilisateur peut être amené à prendre les mesures appropriées. Pour respecter les impératifs communautaires, les câbles de connexion entre le moniteur ou autres périphériques et la carte doivent être blindés. Ces produits ont été testés dans un système hôte typique compatible classe A. On suppose qu'ils présenteront la même compatibilité dans tout système compatible classe A.

(Deutsch) Information für europäische Anwender – Konformitätserklärung

Anmerkung für die Matrox Hardware-Produktunterstützung durch dieses Handbuch Diese Geräte entsprechen EC Direktive 2004/108/EC für ein digitales Gerät Klasse A. Sie wurden getestet und entsprechen demnach EN55022/CISPR22 und EN55024/CISPR24. In einer Wohnumgebung können diese Produkte Funkinterferenzen erzeugen, und der Benutzer kann genötigt sein, entsprechende Maßnahmen zu ergreifen. Um EG-Anforderungen zu entsprechen, müssen zum Anschließen des Monitors und anderer Peripheriegeräte an die Karte abgeschirmte Kabel verwendet werden. Diese Produkt wurden in einem typischen, der Klasse A entsprechenden, Host-System getestet. Es wird davon ausgegangen, daß diese Produkte auch in jedem Klasse A entsprechenden System entsprechend funktionieren.

(Italiano) Informazioni per gli utenti europei – Dichiarazione di conformità

Nota per i prodotti hardware Matrox supportati da questa guida Questi dispositivi sono conformi alla direttiva CEE 2004/108/EC relativamente ai dispositivi digitali di Classe A. Sono stati provati e sono risultati conformi alle norme EN55022/CISPR22 e EN55024/CISPR24. In un ambiente domestico, questi prodotti possono causare radiointerferenze, nel qual caso all'utente potrebbe venire richiesto di prendere le misure adeguate. Per soddisfare i requisiti CEE, il monitor e le altre periferiche vanno collegati alla scheda grafica con cavi schermati. Questi prodotti sono stati provati in un tipico sistema host conforme alla classe A. Inoltre, si dà per scontato che questi prodotti acquisiranno la conformità in qualsiasi sistema conforme alla classe A.

(Español) Información para usuarios europeos – Declaración de conformidad

Observación referente a los productos de hardware de Matrox apoyados por este manual Estos dispositivos cumplen con la directiva de la CE 2004/108/EC para dispositivos digitales de Clase A. Dichos dispositivos han sido sometidos a prueba y se ha comprobado que cumplen con las normas EN55022/CISPR22 y EN55024/CISPR24. En entornos residenciales, estos productos pueden causar interferencias en las comunicaciones por radio; en tal caso el usuario deberá adoptar las medidas adecuadas. Para satisfacer las disposiciones de la CE, deberán utilizarse cables apantallados para conectar el monitor y demás periféricos a la tarjeta. Estos productos han sido sometidos a prueba en un típico sistema anfitrión que responde a los requisitos de la clase A. Se supone que estos productos cumplirán también con las normas en cualquier sistema que responda a los requisitos de la clase A.

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EUROPE

(English) European user's information - Directive on Waste Electrical and Electronic Equipment (WEEE)

Please refer to the Matrox Web site (www.matrox.com/environment/en/weee) for recycling information.



(Français) Informations aux utilisateurs Européens - Règlementation des déchets d'équipements électriques et électroniques (DEEE)

Se référer au site Web de Matrox (www.matrox.com/environment/en/weee) pour l'information concernant le recyclage.

(Deutsch) Information für europäische Anwender - Europäische Regelungen zu Elektro- und Elektronikgeräten (WEEE)

Bitte wenden Sie sich an der Matrox-Website (www.matrox.com/environment/en/weee) für Recycling-Informationen.

(Italiano) Informazioni per gli utenti europei - Direttiva sui rifiuti di apparecchiature elettriche ed elettroniche (RAEE)

Si prega di riferirsi al sito Web Matrox (www.matrox.com/environment/en/weee) per le informazioni di riciclaggio.

FRANCE

Avertissement sur l'épilepsie

À lire avant toute utilisation d'un jeu vidéo par vous-même ou votre enfant Certaines personnes sont susceptibles de faire des crises d'épilepsie ou d'avoir des pertes de conscience à la vue de certains types de lumières clignotantes ou d'éléments fréquents dans notre environnement quotidien. Ces personnes s'exposent à des crises lorsqu'elles regardent certaines images télévisées ou qu'elles jouent à certains jeux vidéo. Ces phénomènes peuvent apparaître alors même que le sujet n'a pas d'antécédent médical ou n'a jamais été confronté à une crise d'épilepsie.

Si vous-même ou un membre de votre famille avez déjà présenté des symptômes liés à l'épilepsie (crise ou perte de conscience) en présence de stimulations lumineuses, veuillez consulter votre médecin avant toute utilisation.

Nous conseillons aux parents d'être attentifs à leurs enfants lorsqu'ils jouent avec des jeux vidéo. Si vous-même ou votre enfant présentez un des symptômes suivants: vertige, trouble de la vision, contraction des yeux ou des muscles, perte de conscience, trouble de l'orientation, mouvement involontaire ou convulsion, veuillez immédiatement cesser de jouer et consultez un médecin.

Précautions à prendre dans tous les cas pour l'utilisation d'un jeu vidéo Ne vous tenez pas trop près de l'écran.

- Jouez à bonne distance de l'écran de TV et aussi loin que le permet le cordon de raccordement.
- Utilisez de préférence les jeux de vidéo sur un écran de petite taille.
- Évitez de jouer si vous êtes fatigué ou si vous manquez de sommeil.
- Assurez-vous que vous jouez dans une pièce bien éclairée.
- En cours d'utilisation, faites des pauses de dix à quinze minutes toutes les heures.

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