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Owner's Manual

USB to VGA/DVI Adapter

Model #: U244-001-R

USB to VGA Adapter

Model #: U244-001-VGA-R

USB to HDMI Adapter

Model #: U244-001-HDMI-R

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1. Introduction

1.1 Features

- Adds an additional monitor, LCD or projector through a single USB 2.0 port
- Simultaneously connect up to 6 display adapters to a Windows computer or up to 4 on a Mac
- Hot-pluggable; add or remove monitor without the need for a system reboot
- Automatically resumes from hibernation and suspend modes
- Supports video resolutions up to 1920 x 1080 (60Hz), 1080p (60Hz)
- Set additional monitors to extend the primary display, duplicate the primary display, or set an additional monitor as the primary display
- U244-001-R comes with a DVI to VGA adapter, allowing you to connect either a DVI or VGA display

1.2 Package Contents

Before installation, please check the items in the package. The package should contain the following items:

- (1) U244-001-R or (1) U244-001-VGA-R or (1) U244-001-HDMI-R
- (1) Driver CD
- (1) USB Cable
- (1) Owner's Manual
- (1) DVI to VGA Adapter (U244-001-R only)

1.3 System Requirements

Windows

- Windows 2000 or later
- USB 2.0 port
- VGA, DVI or HDMI monitor

Mac

- An Intel-based Mac running OS X 10.4 or later. Power PC-based Macs are not supported.
- USB 2.0 port
- VGA, DVI or HDMI monitor

1. Introduction

Computer requirements when using 1 – 2 display adapters:

- 1.2GHz Single Core CPU
- 512MB memory

Computer requirements when using 3 display adapters:

- 1.8GHz Single Core CPU
- 1GB memory

Computer requirements when using 4 – 6 display adapters:

- 1.6GHz Core Duo CPU
- 1GB memory

Note: *Only 1 added monitor can support DVD playback. In order to support DVD playback, your computer must meet the following requirements:*

- 2.0GHz Core Duo CPU
- 1GB memory
- Adapter screen resolution must be set to 800 x 600 with 16-bit color

2. Installation

Note: *Install the driver on your computer before connecting the display adapter(s).*

1. Insert the driver CD into your computer's CD-ROM drive. The setup program should run automatically. If the setup program fails to start on its own, open the CD and double-click on the appropriate driver file, depending on your OS.

Note:

- *For Windows 2000 users, if prompted for a system patch, you must download and install the required patch before the driver can be installed.*
- *For Windows Vista and 7 users, if you encounter a User Account Control popup, choose to allow the installation to proceed. This may require an administrator's password. If you encounter a driver signature dialog box, choose to continue the installation anyways.*
- *If a message stating "Display Link software for USB display adapter is already up to date," then the necessary software for this unit is already installed, and you can proceed to step 5.*

2. Installation

2. For Windows users, the set-up process will begin automatically. For Mac users, an install screen will appear with a *Display Link Software Installer* link. Click this link to begin installation. Follow the prompts that appear to complete the process.
3. When this process is complete, you will need to restart your computer to finish the installation.
4. After restarting your computer, connect the included USB cable from an available USB 2.0 port to the display adapter.
5. Connect your display adapter to a monitor using a DVI or VGA cable, depending on your adapter/monitor connection type.
6. Once connected, the computer will recognize the display adapter, and complete the installation. The video should now be displayed on the add-on monitor. **Note: It may take a few moments before the screen appears on the add-on monitor. Also, it is normal for the screen to flicker on and off a few times when first connected. If the add-on monitor remains blank, you may need to restart your computer one more time.**

Using Multiple Display Adapters

When using multiple display adapters, it is only necessary to install the driver software once. After connecting the first display adapter to the computer, simply move on to connecting the next display adapter.

Note: When using Windows Vista XDDM mode, only one display adapter will be able to be configured to use Extended mode, and the remaining display adapters will be forced to use Mirror mode. Windows Vista XDDM mode is a video card driver mode that provides a Windows XP interface on a Vista computer.

3. Using the Adapter

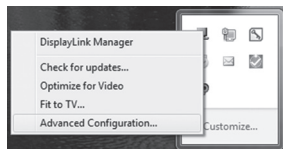
3.1 Display Properties

Once installed, the computer video can be *Extended* from the primary display to the add-on display, *Mirrored* to display the same thing on both, or changed to use the add-on display as the primary display. This can be done by opening the *Display Settings* page on your computer (see below) and changing the settings.

3. Using the Adapter

Windows

To access the display settings on a Windows computer, right-click on your computer's desktop, and select the *Properties* or *Personalize* option, depending on your Windows operating system. From there you will need to access the *Settings* or *Display* option to get to the *Display Settings* page. A quick way to access this page is to use the display adapter icon in the lower-right corner of your computer screen. Right-click on this icon and select the *Advanced* option to automatically pull up your computer's *Display Settings* page.



Below are additional settings that are available to Windows users via the display adapter right-click menu:

- **Check for Updates** – Connects to *Windows Update* and checks for newer versions of the Display Link software, and downloads them if available.
- **Optimize for Video** – When playing video content on an add-on monitor, this setting can help to improve playback performance. **Note: Text may appear less clear when this is enabled.**
- **Fit to TV** – When using your display adapter to connect a TV to your computer, the Windows desktop may not always completely appear on the screen. This setting can be used to adjust the picture to display properly.

In addition to the display adapter right-click menu, Windows Vista and 7 users can press the [Windows Key] and the [P] key at the same time to pull up the menu below, which quickly allows you to switch the display settings.



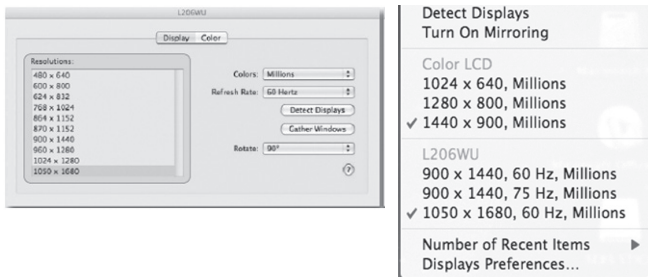
3. Using the Adapter

Note:

- **The display adapter icon only appears in the lower-right corner of Windows computers, and offers a quick way to adjust the display(s) settings. The settings available in this right-click menu may vary depending on your Windows operating system.**
- **Only Mirror mode is supported under Windows Vista Display Driver Model (WDDM) mode. In addition, the Aero Experience (Flip 3D effect) will be disabled under Windows Vista Display Driver Model (WDDM) mode as long as the display adapter is connected.**

Mac

To access the display settings on a Mac computer, open your computer's *System Preferences* menu and selects the *Displays* option. A quick way to adjust these settings is by clicking on the monitor icon in the upper-right corner of the screen. When the *Show displays* in menu bar setting is checked in the *Display Settings* menu, clicking the monitor icon will display a menu that includes the available monitors and settings.



3.2 Extending Video to the Add-On Display

To extend the video of the primary monitor to the add-on monitor, follow the steps below:

Windows

1. Open your computer's *Display Settings* page.

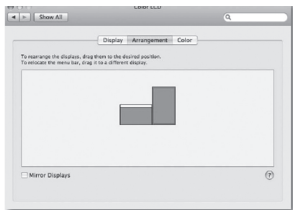
3. Using the Adapter

2. Select the monitor icon that represents the add-on display you wish to change, or choose the add-on display from the drop-down menu. The primary display is always icon 1.
3. Once you've selected the monitor icon for the add-on display, check the checkbox to extend video onto the monitor, or select the extension option from the drop-down list.
4. Drag the monitor icons in the *Display Settings* page so that they are positioned to replicate the location of the actual displays. For example, if display 1 is directly to the left of display 2, the monitor icons should be positioned that way. This affects which side of the screen the mouse is allowed to move to the next display from, and is therefore essential to ensure smooth mouse movement between displays.
5. Click the *Apply* button to activate the changes. The computer video will now be extended from the primary display to the add-on display.

Note: When playing a DVD, it is recommended that you play the DVD on a monitor connected to the computer via standard cabling, and not an add-on monitor connected via display adapter. If you need to play DVD on an add-on monitor, you must have a 2.0GHz Core Duo CPU with 1GB memory, and the screen resolution must be set to 800 x 600 with 16-bit color. If multiple display adapters are connected to a computer, only 1 of them can play DVD content.

Mac

1. Open your computer's *Display Settings* page. By default, all monitors added to your computer will be extended to the right of the primary display.
2. If the displays are set to be mirrored, the *Mirror Displays* checkbox will be checked. To uncheck this checkbox and extend the video amongst all displays, check the *Arrangement* option in the *Display Settings* page.
3. When unchecked, video will be extended amongst the connected monitors, with the Arrangement screen display icons to represent the location of the monitors. Drag the monitor icons so that they are positioned to replicate the location of the actual displays. For example, if display 1 is directly to the left of display 2, the monitor icons should be positioned that way. This affects which side of the screen the mouse is allowed to move to the next display from, and is therefore essential to ensure smooth mouse movement between displays. The primary display will always be indicated by a white bar at the top of its icon.



3. Using the Adapter

3.3 Mirroring Video on the Add-On Display

To display the same thing on both the primary and add-on display, follow the steps below:

Windows

1. Open your computer's *Display Settings* page.
2. Select the monitor icon that represents the add-on display you wish to change, or choose the add-on display from the drop-down menu. The primary display is always icon 1.
3. Un-check the box next to *Extend the desktop onto this monitor*, or select the option from the drop-down menu to duplicate the display, and then click the apply button.

Note: In Mirror mode, the add-on display settings are limited by those of the primary display. If the primary display only supports a resolution of 1280 x 1024, the add-on monitor will be limited to a resolution of 1280 x 1024 or less.

Mac

1. Open your computer's *Display Settings* page.
2. Bring up the *Arrangements* screen by clicking on the *Arrangements* option in the *Display Settings* page.
3. (*Setting all add-on displays to mirror mode*) To set all of the add-on displays to mirror the primary display, simply check the *Mirror Displays* setting.
4. (*Setting some add-on displays to mirror mode*) To set some of the add-on displays to mirror the primary display, while others are left as extended, uncheck the *Mirror Displays* setting.
5. While holding down the [Cmd] and [Alt] keys on the keyboard, drag the icon of the add-on monitor that you wish to mirror onto the icon of the primary display.
6. Repeat step 4 for each add-on display you wish to mirror, while leaving the other displays extended.

3.4 Making the Add-On Display the Primary Display

To make the add-on display the primary display for the computer, follow the steps below:

Windows

1. Open your computer's *Display Settings* page

3. Using the Adapter

2. Select the monitor icon that represents the add-on display you wish to change, or choose the add-on display from the drop-down menu. The primary display is always icon 1.
3. Check the box next to *This is my main monitor* and click the *Apply* button to make the add-on display the primary display for the computer.

Note:

- **Some computers require you to first un-select the original primary display before setting a new primary display.**
- **Once set as the primary display, the add-on display will continue to be the primary display as long as it is connected to the computer. Once disconnected, the primary display will default back to the monitor connected to the computer via standard cable.**

Mac

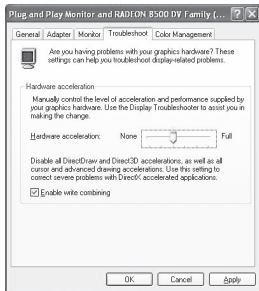
1. Open your computer's *Display Settings* page.
2. Bring up the *Arrangements* screen by clicking on the *Arrangements* option in the *Display Settings* page.
3. Drag the white bar at the top of the primary monitor icon to the icon of the display that you wish to make the new primary monitor.

4. Troubleshooting

Q: Why is the display on the add-on monitor blank?

- A: If the monitor power LED is Green, wait a moment for the monitor to display the video, as it may take some time for the video to be displayed on the add-on monitor. If after a few minutes the video does not display, restart your computer. Also, make sure the computer is not in standby or hibernation mode, which will cause the add-on monitor to be blank.

If the monitor power LED is Red, check if the connection is properly made. If the connection is fine and the problem still exists, uninstall the driver, unplug the adapter and reinstall the driver.



4. Troubleshooting

Q: Why is the add-on monitor flickering?

A: This is usually caused by a low refresh rate. When in "Mirror Mode," increase the refresh rate of the main monitor. This will in turn increase the refresh rate of the add-on monitor, which should stop the flickering. When in "Extended Mode," increase the refresh rate of the add-on monitor.

Q: When I play MPEG file by Windows Media Player on the extended monitor, why does the display become abnormal when I switch it to full screen mode?

A: If your system is Windows XP SP1, upgrading to SP2 will solve this problem.

Q: Why does the video not display properly when in "Full-Screen" mode?

A: Try the following tips to improve the smoothness of the movie playback:

- Reduce the resolution of the display to 640x480 or 800x600.
- Use the adapter in extended mode.
- Terminate any other CPU intensive applications running on the computer.
- As some media players require DirectX hardware support to correctly operate, try a different media player which requires less DirectX support.
- Drag the media player to the add-on screen and close the player. Restart the player and it should open on the add-on monitor. Now try playing the media file again.
- Try reducing the hardware acceleration level of the primary display (NOT the add-on monitor) to levels 1, 2 or 3 and restarting the media player. The hardware acceleration can be found by right-clicking on your desktop and click "Properties > Settings > Advanced > Troubleshoot."
- The video playback may be unusual when the add-on monitor is mirroring the primary display and there is another extended screen connected to the computer. The extended screen must be disabled before the content will be correctly cloned to the add-on monitor.

Q: In "Extended Mode," why does the add-on monitor have a black border around the desktop?

A: This happens when the resolution used by the add-on monitor is larger than the resolution used by the primary monitor. To solve this problem, configure the add-on monitor to use the same resolution as the primary monitor.

4. Troubleshooting

Q: In “Extended” mode, why does the cursor disappear?

A: If you're in extended mode but have not yet connected the add-on monitor to the U244-001-R, the desktop will still span to the add-on monitor. It's possible that your cursor has moved to the extended desktop and is no longer visible on the primary display.

When this occurs, try the following:

- Connect the add-on monitor to the U244-001-R. You should be able to see the mouse cursor once the computer screen is displayed.
- Move your mouse to try and drag the cursor back onto the primary monitor.
- Unplug the U244-001-R from the computer to restore the cursor.

5. Specifications

Feature	Specification		
Source Connector	USB A Male (via the included USB 2.0 cable)		
Display Connector	HDMI F, DVI-I F or HD15 F		
Maximum Number of Display Adapters	6 (Windows), 4 (Mac)		
RAM	8M x 16 DDR Synchronous DRAM (SDRAM)		
Power	Bus-powered		
Supported Operating Systems	Windows 2000 and above, Mac OS X 10.4 and above		
Operating Temperature	10° to 40° C (50° to 104° F)		
Storage Temperature	-20° to 70° C (-4° to 158° F)		
Relative Humidity	Less than 85%, Non-Condensing		
Supported Video Resolutions (Note: Interlaced and reduced blanking modes are not supported)	Resolution	16-Bit Refresh Rate	32-Bit Refresh Rate
	640 x 480	60, 72, 75, 85	60, 72, 75, 85
	800 x 600	56, 60, 72, 75, 85	56, 60, 72, 75, 85
	1024 x 768	60, 70, 75, 85	60, 70, 75, 85
	1280 x 720 (720p)	60	60
	1280 x 768	60, 75, 85	60, 75, 85
	1280 x 800	60	60
	1280 x 1024	60, 75, 85	60, 75
	1366 x 768	60	60
	1400 x 1050	60, 75, 85	60, 75, 85
	1600 x 1200	60	60
	1680 x 1050	60	60
	1920 x 1080 (1080p)	60	60

6. Warranty and Warranty Registration

1-Year Limited Warranty

Tripp Lite warrants its products to be free from defects in materials and workmanship for a 1-year period from the date of retail purchase by end user.

Tripp Lite's obligation under this warranty is limited to repairing or replacing (at its sole option) any such defective products. To obtain service under this warranty you must obtain a Returned Material Authorization (RMA) number from Tripp Lite or an authorized Tripp Lite service center. Products must be returned to Tripp Lite or an authorized Tripp Lite service center with transportation charges prepaid and must be accompanied by a brief description of the problem encountered and proof of date and place of purchase. This warranty does not apply to equipment which has been damaged by accident, negligence or misapplication or has been altered or modified in any way, including opening of the unit's casing for any reason. This warranty applies only to the original purchaser who must have properly registered the product within 10 days of retail purchase.

EXCEPT AS PROVIDED HEREIN, TRIPP LITE MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Some states do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

EXCEPT AS PROVIDED ABOVE, IN NO EVENT WILL TRIPP LITE BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS PRODUCT, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Specifically, Tripp Lite is not liable for any costs, such as lost profits or revenue, loss of equipment, loss of use of equipment, loss of software, loss of data, costs of substitutes, claims by third parties, or otherwise.

Warranty Registration

Visit www.triplite.com/warranty to register the warranty of your new Tripp Lite product. You'll be automatically entered into a drawing for a chance to win a FREE Tripp Lite product!*

* No purchase necessary. Void where prohibited. Some restrictions apply. See website for details.

Warning!

Use of this equipment in life support applications where failure of this equipment can reasonably be expected to cause the failure of the life support equipment or to significantly affect its safety or effectiveness is not recommended. Do not use this equipment in the presence of a flammable anesthetic mixture with air, oxygen or nitrous oxide.

FCC Notice, Class B

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications to this equipment not expressly approved by Tripp Lite could void the user's authority to operate this equipment.

WEEE Compliance Information for Tripp Lite Customers and Recyclers (European Union)

Under the Waste Electrical and Electronic Equipment (WEEE) Directive and implementing regulations, when customers buy new electrical and electronic equipment from Tripp Lite they are entitled to:

- Send old equipment for recycling on a one-for-one, like-for-like basis (this varies depending on the country)
- Send the new equipment back for recycling when this ultimately becomes waste

Tripp Lite follows a policy of continuous improvement. Product specifications are subject to change without notice.



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