# USB Graphics Adapter

# User's Manual

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**SUNIX Co., Ltd.**

Tel : +886-2-8913-1987
Fax: +886-2-8913-1986
Http://www.sunix.com.tw
info@sunix.com.tw

# USB Graphics Adapter

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## Safety Information

1. Keep this User's Manual for future reference.
2. Always read the safety information carefully.
3. Keep this equipment away from direct sunlight, or in humid or damp places.
4. Do not place this equipment in an unstable position, or on vibrating surface before setting it up.
5. Do not use or place this equipment near magnetic fields, televisions, or radios to avoid electronic interface that affects device performance.
6. Do not attempt to disassemble or repair the equipment or the warranty would be useless.
7. To avoid damaging your system and equipment, please make sure that your computer is off before you install the product.

# Introduction

The USB Graphics Adapter provides a unique solution to add extra displays to a computer without using additional graphics cards. This product has successfully challenged the limitations of current display connectivity to deliver a highly interactive user experience across a USB 2.0 connection. Users can instantly clone or extend a desktop onto another display via DVI or D-Sub interface, such as LCD, CRT, projector and plasma displays. With USB2.0 interface plug-n-play and bus power feature, this product brings multi-monitor applications into the mainstream.

With this handy adapter, you can enjoy many benefits brought by an add-on monitor. The most obvious one is that you get more desktop area to have more applications visible at one time. For example, you may work on one monitor while your family watches video on the other. No more stacking windows within the confines of a single display. Or you may span an application, e.g. spreadsheets, across two displays. What's more, the adapter is hot pluggable. If you are not using the extra monitor, just unplug the adapter at any time; no reboot needed.

## Features

- Add-on monitor, LCD or projector through USB2.0 High-Speed connectivity.
- High performance 2D Accelerator resolutions up to 1680 x 1050 @60Mhz with 32bit true color.
- Built-in high performance DDR400 200MHz 16MB RAM.
- Up to 2 USB2.0 graphic adapters to work simultaneously.*
- Automatic recognition of monitor type, resolution, and features.
- Hot-swapping / Plug-n-Play of monitors without reconfiguration.
- Widescreen 22 inch LCD maximum 1680 x 1050 resolution support. (Procession Version)
- Movement of windows on the desktop is smooth, with no trail or shuddering.
- Supports desktop display clone and extend mode.
- Low power consumption via USB Bus power supply (without Heat Sink).
- Specialized for office using, home entertainment, and video playing.
- Supports Microsoft Windows 2000, XP, and Vista operation system.
- Certified by CE, FCC, RoHS approval.

## Specification

- Interface: USB2.0 High Speed
- Controller: DisplayLink 2D Graphics Engine
- Memory: DDR 200MHz 16MB RAM
- Connectivity: DVI-I or D-Sub VGA
- Resolution:

    *Standard:1024 x 786, 1280 x 1024, 1280 x 768, 1440 x 900, 1366 x 768, 1400 x 1050

    *Professional:1024 x 786, 1280 x 1024, 1280 x 768, 1440 x 900, 1366 x 768, 1400 x 1050,

    1680 x 1050, 1600 x 1200
- Color Depth: 32-but True Color
- Power Supply: USB Bus power
- OS Support: Windows 2000 SP4, XP SP2, and Vista

## Package Content

Check if the following items are present and in good condition upon opening your package. Contact your retailer if any of the items is damaged or missing.

1. USB Graphics Adapter
2. Driver CD ROM
3. Quick Installation Guide
4. DVI to D-Sub Adapter (Optional)

## System Requirements

The USB Graphics Adapter software can be installed on any desktop or laptop system running one of the following Operating Systems:

- Windows XP Home or Professional with Service Pack 2
- Windows 2000 with Service Pack 4
- Windows Vista (limited functionality).

The minimum hardware requirements for the PC are:

- PC with 1.2GHz or higher processor clock speed required. Intel Pentium/Celeron family, or AMD K6/Athlon/Duron family, or compatible processor recommended
- 512 megabytes (MB) of RAM
- At least one USB2.0 port
- 12Mb of available disk space
- Super VGA (800 x 600) or higher- resolution video adapter and monitor
- CD-ROM or DVD drive for driver installation.

To play DVD on the adapter-attached monitor, in addition to the requirements above, the following requirements should also be met:

- PC with 2.0GHz or higher processor clock speed required.
- 1024 megabytes (MB) of RAM

NOTE:

Standard driver supports up to 2 (two) displays working simultaneously, if you attach more adapters to a PC, subsequent ones will not be active. USB2.0 Graphics Adapter supports up to 6 (six) displays working simultaneously by using special driver, please contact with your vendor for detail information.

# Hardware Installation

Connect USB Graphics Adapter to your computer and monitor. Connect the smaller end of the USB cable to the adapter. Then connect the other end of the USB cable to an USB 2.0 port on your computer.

Note: On Windows XP/2000, it's suggested that you remember which USB port is used for the driver installation and always connect the adapter to the same USB port, otherwise Windows will treat the adapter as a new device and ask to install the drivers again.

**Driver Installation**

Follow the procedures below to install the driver and then connect the

1. Insert the provided driver CD into your CD-ROM drive. The setup program will run automatically. If not, locate and double-click the **Setup.exe** file in driver folder .



**driver path** **:\VGA\USB to VGA\ Setup.exe**

Notice for Windows Vista users:

Windows Vista users will encounter a User Account Control dialog box when attempting to install a program. Enter an administrator password or click Allow to start the installation. When prompted with Windows Security dialog box, select install this driver software anyway.
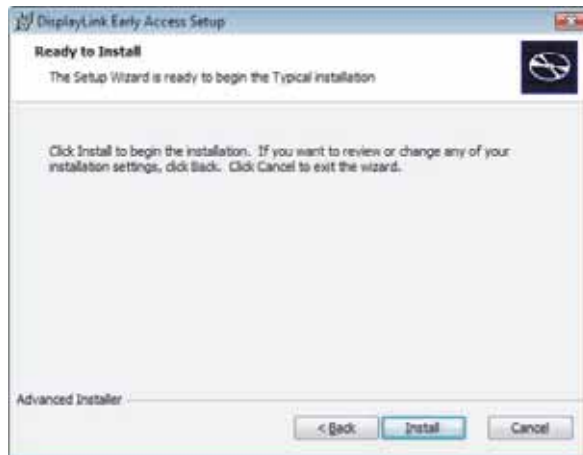
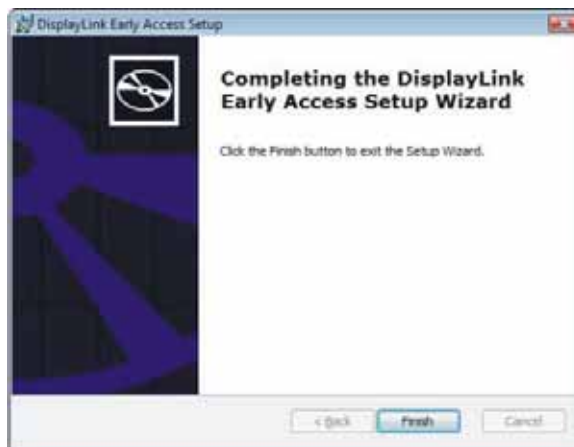2. When the welcome screen appears, click Next.

3. Select I accept the terms in the License Agreement and click Next.
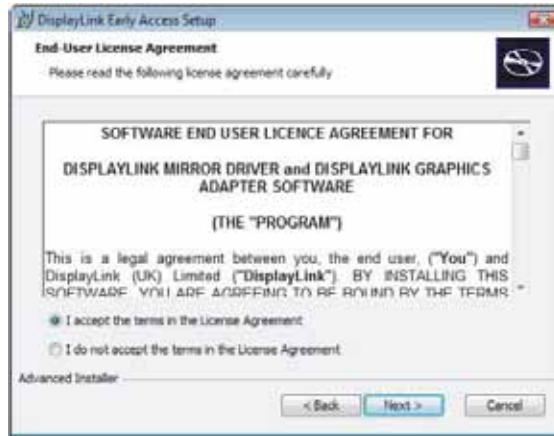


4. Click Install to start the driver installation steps.



5. Click Finish to complete the driver installation steps.



6. For Vista only. When prompted to restart your computer, click yes to restart or No to manually restart later. Note that a reboot is always needed for a successful installation. If the reboot prompt doesn't appear, make sure to manually reboot your computer.
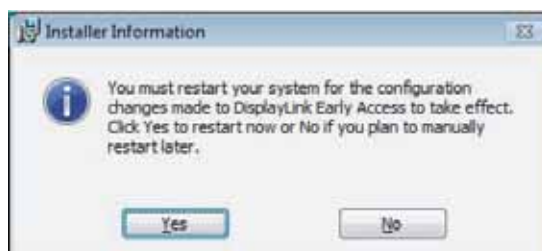
7. Connect USB Graphics Adapter to your computer and monitor. Connect the smaller end of the USB cable to the adapter. Then connect the other end of the USB cable to an USB 2.0 port on your computer.

8. Windows will automatically complete the installation. On Windows XP, a Found New Hardware Wizard will appear. Please take these steps to complete the installation.

9. Select No, not this time to ignore Windows Updates and click Next.\

10. Select Install the software automatically (Recommended) and click Next.  System will detect the properly driver and install automatically.

11. Click Finish to complete the installation.



**Remove Driver**

The DisplayLink Graphics Adapter software can be removed from the "Add or Remove Programs" utility under the Windows control panel. (On Windows Vista this is called "Programs And Features")

1. Open "Add or Remove Programs".
2. Find the "DisplayLink Early Access" entry and click on "Remove".
3. Click "Yes" to confirm that you want to remove it.
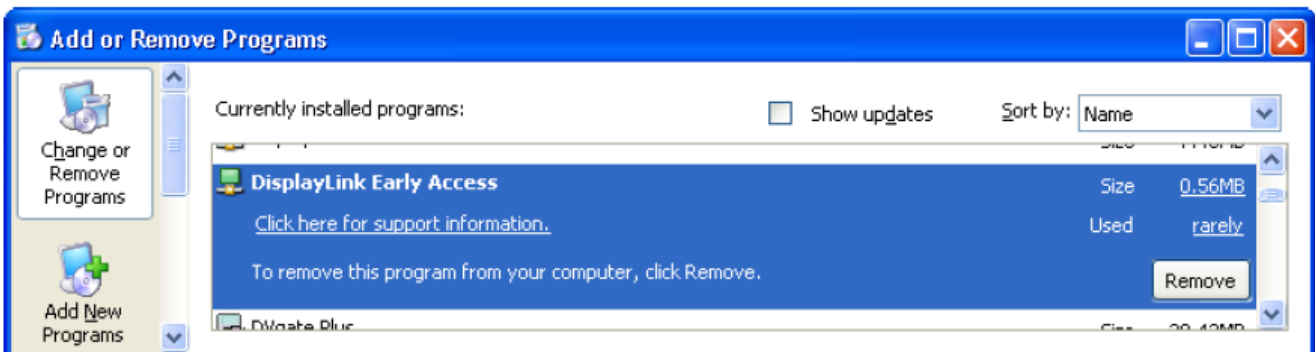


The uninstaller will then automatically uninstall the software.

# Using the Software

**Controlling the display - 1**

The behavior of the USB Graphics Adapter is configured through the Windows Display Properties dialog box. To get to this, right click on the desktop, click on "Properties" to get to the Display Properties dialog box and select the" Settings" tab.

In the 'Display' drop down box, find the entry for 'Prototype Device (XXX) on USB to Graphics Adapter'. Its mode, resolution, color quality and position can all be controlled from here.
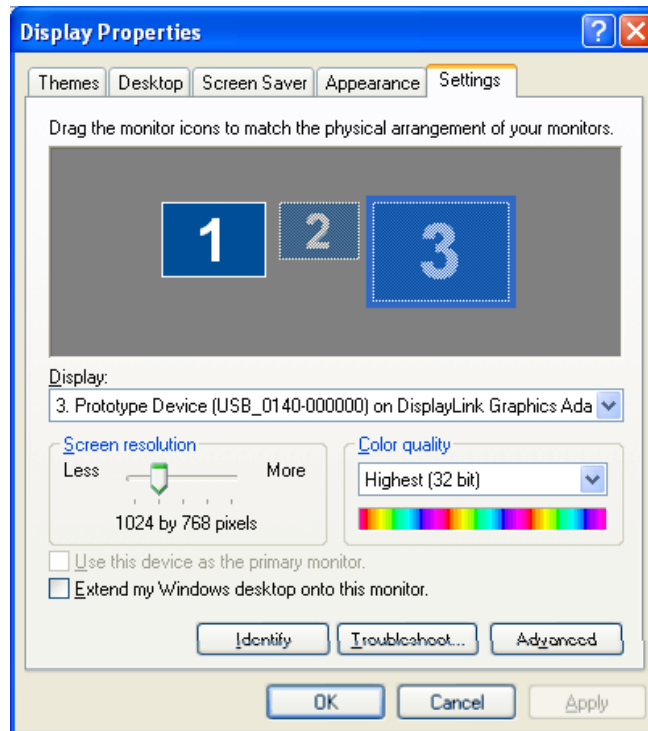


**Setting the display into Mirror mode (Default)**

In mirror mode, the monitor attached to the USB Graphics Adapter simply copies what is on the main (primary) display. To set the display into this mode, simply **uncheck** the box marked "Extend my Windows desktop onto this monitor". The resolution, color depth and refresh rate of the primary screen are replicated on the monitor connected to the USB to Graphics Adapter.

If the monitor connected to the USB Graphics Adapter supports a lower resolution than the primary display, then a part of the screen is shown on the mirrored display. As the mouse is moved around the screen, the USB Graphics Adapter display will pan to the current area.

**Setting the display into Extend mode**

In extend mode, the monitor attached to the USB Graphics Adapter forms part of the extended Windows desktop. The extra desktop area is a great productivity aid, allowing more applications or documents to be visible at a time.

To set the display into this mode, check the box marked 'Extend my Windows desktop onto this monitor' (1 in Figure 1). Arrange screen resolution and color quality using the appropriate controls (2 and 3), and arrange its position with respect to the other monitors on the extended desktop in using the drag area (4). For more detailed mode setting, including the refresh rate, click on the 'Advanced' button, then the 'Adapter' tab then on the 'List all modes…' button. All valid combinations of resolution, color quality and refresh rate are listed. For CRT monitors, it is best to use a high refresh rate so as to avoid discomfort due to flicker. Flat panel monitors do not flicker and a low refresh rate is adequate.
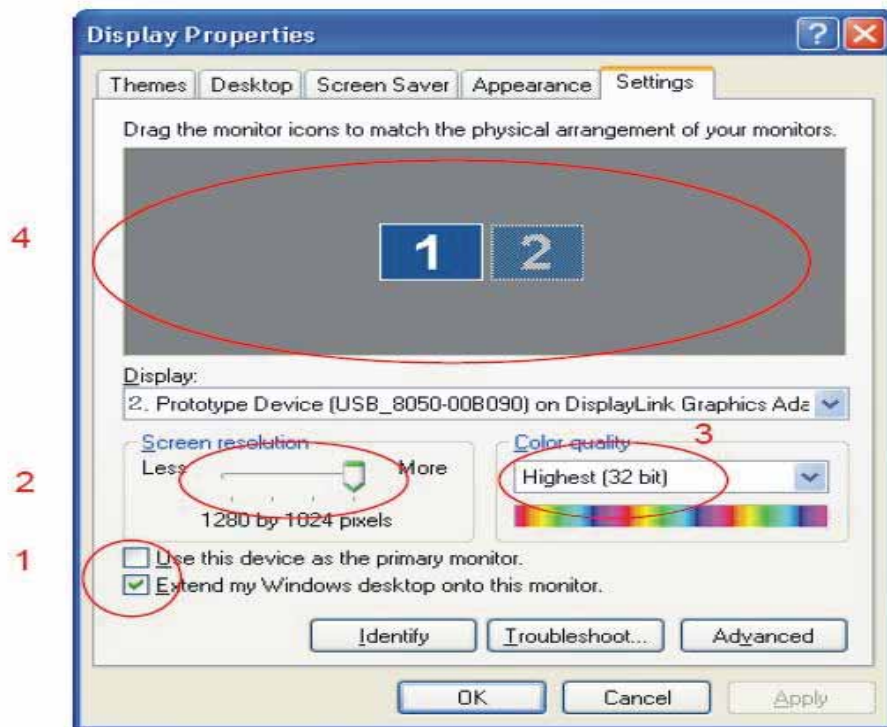


NOTE: Some applications may not support display on the extended desktop.

**Setting the display as the primary display**

To make the USB Graphics Adapter the primary display, check the box marked 'Use this device as the primary monitor' (1 in Figure 1). On some Paces and laptops it is necessary to disable the main display (i.e. uncheck the box marked 'Extend my Windows desktop onto this monitor' for the main display) as part of the same settings change. The USB Graphics Adapter stays primary if the PC enters hibernate or suspend mode or is rebooted. If the USB Graphics Adapter is detached, the main display becomes primary again.

It is possible to work conveniently with a laptop by setting its action on lid closed to 'do nothing' then making the USB Graphics Adapter screen primary while disabling the main screen. The laptop lid can then be closed and the laptop used with the USB Graphics Adapter screen and with external keyboard and mouse.

**Setting the Screen resolution and color quality**

To change the screen resolution (2 in Figure 1)or color quality(3 in Figure 1), select those options on the screen. Be sure to select one of the supported resolutions and color quality numbers in the table above. For an add-on monitor, you can also select any resolution or color quality supported by that monitor.
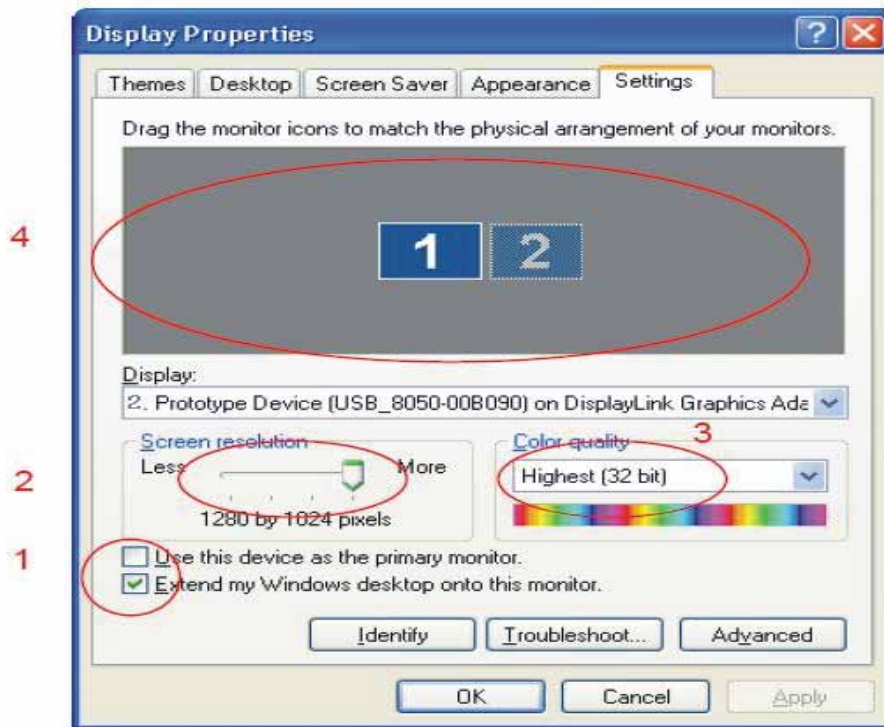


To change monitor's refresh rate, click "Advanced" and then click Monitor. Select a refresh rate from the Screen refresh rate drop-down list and then click Apply. Click OK to close the settings screen.
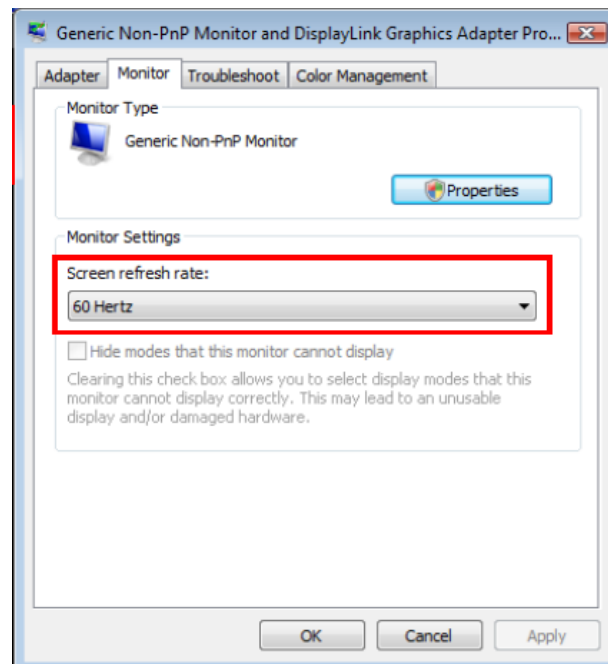
**Controlling the display – 2**

The USB Graphics Adapter can also be configured from the USB to Icon application, where present. When devices are attached an icon appears in the notification area. Clicking on this gives a menu to control any attached devices:

On Windows XP and 2000, once the installation is complete a display manager is also installed on your system. This utility automatically starts upon system startup with its icon placed in the system tray. (The manager is not available on Vista.)



Using the display manager you can perform the configuration tasks in an easier way without the need to bring out the Windows display settings dialog box. In addition, you can use it to rotate the extended screen. Right-clicking the display manager sectary icon will bring out the context menu. On top of the context menu shows the ID and name for the adapter.
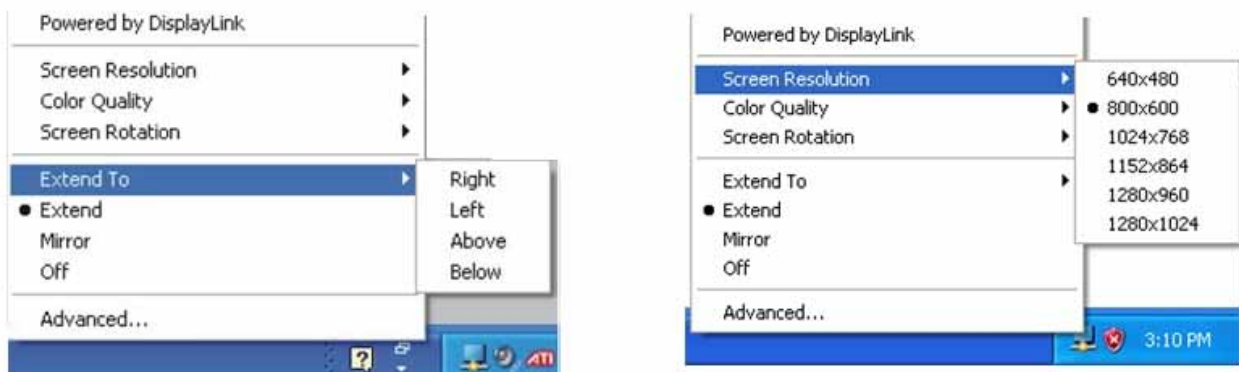


This contains many of the settings settable via Windows Display Properties and some new ones:

- **Screen Resolution:** Allow you to configure the screen resolution, and it's available only in extended mode. Available resolutions vary according to the add-on monitor.
- **Color Quality:** Allow you to configure the color quality, and it's available only in extended mode. Available resolutions vary according to the add-on monitor.
- **Screen Rotation:** Allows you to rotate the screen on the add-on monitor by 90, 180 or 270 degrees.
- **Extended to:** Allows you to select whether to place the extended screen on top, bottom, left or right to the primary display.
- **Extend:** Allows you to set the adapter to work in extended mode.
- **Mirror:** Allows you to set the adapter to work in mirror mode.
- **Off:** When an adapter is in extended mode, this option allows you to turn off extended mode and restore mirror mode. This option is not active if your adapter is already in mirror mode.
- **Advanced:** A shortcut to launch the Windows display settings dialog box.

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If two adapters are simultaneously connected to your computer, the ID and name of both adapters will be displayed and you can select the one you want to configure. See the ensuing section for the descriptions on options provided by the display manager.
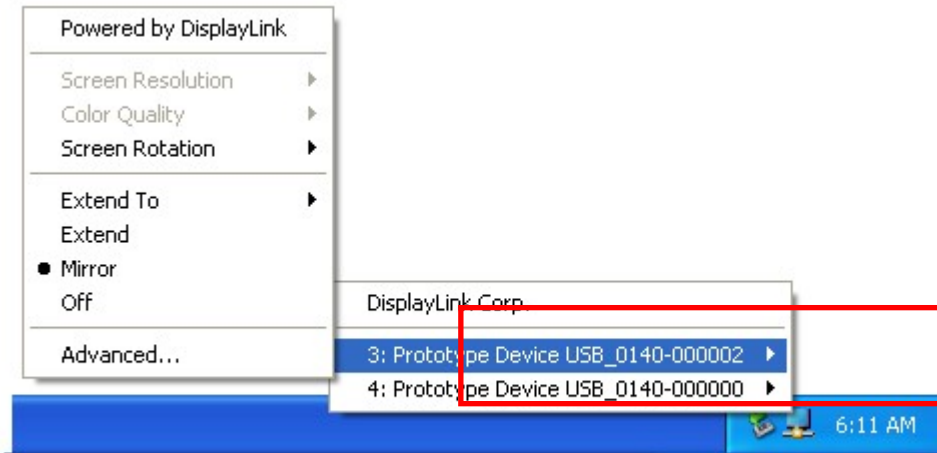
**Adjusting Resolution, Color Depth and Refresh Rate**

There are three components that make up the screen mode:

- **Resolution:** In common usage, this refers to the number of pixels displayed on screen horizontally and vertically.
- **Color Depth:** This defines the number of different colors that can be shown on the screen at the same time.
- **Refresh rate:** Measures the speed that the entire screen is rescanned. Higher frequencies reduce flicker.

Some monitors advertise the supported modes through the video connector. If this is the case, the adapter identifies the supported modes from the monitor. If the monitor does not advertise the supported modes, the adapter software chooses a set of common screen modes for the monitor.

The software supports the modes listed below. The modes made available to the user through Windows are a combination of those supported by the monitor, by the adapter and by the software. This ensures that the monitor cannot be put into an unsupported mode, which might damage it.

| Color Depth<br>Resolution | Refresh rates available at<br>16 bit color quality | Refresh rates available at<br>32 bit color quality |
|---|---|---|
| 640x480 | 60 72 75 | 60 72 75 |
| 800x600 | 56 60 72 75 85 | 56 60 72 75 85 |
| 1024x768 | 60 75 85 | 60 75 85 |
| 1280x960 | 60 85 | 60 85 |
| 1280x1024 | 60 75 85 | 60 75 |
| 1360x768 | 60 | 60 |
| 1366x768 | 60 | 60 |
| 1368x768 | 60 | 60 |
| 1400x1050 | 60 75 85 | 60 75 85 |
| 1440x900** | 60 | 60 |
| 1600x1200** | 60 | 60 |

*Note that interlaced modes are not supported.                    **Only supported by 1600x1200 model.