



DS-70U/DS-90U/DS90UC

TROUBLE SHOOTING GUIDE

A. Note on Windows Vista Modes

Normally, Windows Vista is in WDDM mode. In this mode, Vista graphics drivers are used, and the Vista Aero Glass and Vista Basic themes are available.

Windows Vista PCs whose graphics drivers are not Windows Vista native will run in XDDM (XP-Compatible) mode. In this mode, the 3D Aero Glass theme is not available. This mode will be limited to PCs that were upgraded from XP to Vista and PCs with low-end graphics cards.

DisplayLink software supports both modes in different ways, and the level of support and issues are different in the two cases.

B. PC Recommended Specifications

DisplayLink software can be run on PCs ranging from Netbooks (e.g. Asus EeePC), Notebooks/Laptops, and Desktops - on processors ranging from Atom N270 based PCs, basic single Core CPUs, and of course the latest Dual and Quad Core CPUs.

The performance of the software is dependent upon the processing power available, and so more capable systems offer higher performance.

Recommended typical system requirements are:

C. Windows Vista

For Windows Vista, the Windows Experience Index (WEI) is a useful measure of hardware level. The WEI is accessible from Computer->Properties or from Control Panel->System.

The recommended typical hardware requirements for the PC are:

- * WEI score of at least 3 in the 'Graphics; Desktop performance for Windows Aero' category.
- * Recommended: WEI score of at least 3 overall, as recommended by Microsoft.
- * At least one USB 2.0 port
- * 30 megabytes (MB) of free disk space
- * Computer screen for use with the DisplayLink device, if it is not integrated.
- * Network access for software downloads, or access to a CD-ROM drive.

If the PC specification is below this, performance will be lower (or CPU loading higher).

D. Windows XP/2000

* For 1-2 monitors, business usage, productivity target. This may not provide full frame rate DVD playback at full screen.

- 1.2GHz Single Core CPU (Celeron or Atom N270 for example)
- 512MB memory

* For 3 monitors where 1 could run DVD video while also targeting productivity and business apps. Will support only 1 video of DVD resolution at full screen:

- 1.8GHz CPU
- 1GB memory

* For 6 screens where 1 screen can run full screen DVD video:

- 1.6GHz Core Duo
- 1GB memory

E. Summary of Software State and Issues - Windows Vista WDDM

E1. Windows Vista WDDM graphics card support

Because of restrictions in Vista WDDM support for graphics cards, the DisplayLink software works closely with the graphics drivers for the PC's graphics card. This software supports interworking with single graphics cards from Intel, ATI, Nvidia and Via, including NVidia SLI in SLI mode.

DisplayLink cannot exclude severe problems in the case of graphics cards or driver versions that have not been interoperability tested with DisplayLink software. Should such problems arise,

- First, upgrade to the latest graphics drivers for your PC. Latest drivers can be found on the PC manufacturer's or graphics card manufacturer's website.
- Second, upgrade to the latest DisplayLink software available for your device. Use 'Check now...' from the DisplayLink GUI to find and download latest software.
- If this does not help, please inform your DisplayLink device manufacturer's support line. Please give these details:
 - + PC make, CPU and memory
 - + graphics card make, model and driver version.

Known Issues - General

DisplayLink screens are not supported on systems with two graphics cards used simultaneously (supporting separate screens, or in ATI Crossfire configuration). Two graphics cards in Nvidia SLI configuration are supported. (1704, 4441)

DisplayLink software may cause blue screens on software configurations where WDDM drivers from different manufacturers have been installed on the same system, even if just one graphics card is present. (4323)

On Vista WDDM, TMM does not appear when DisplayLink screens are attached. It works normally when no DisplayLink screens are attached. (2569)

On some systems with hybrid graphics architectures a maximum of 3 DisplayLink screens is supported when in High Performance GPU mode. (4459)

On a hybrid machine with DisplayLink software installed do not change the bios settings to ATI only or Intel only.

If you need to change those BIOS settings please first uninstall the DL software, then reinstall it once the new settings have been applied. (4339,4506)

On Vista WDDM, very occasionally, if the DisplayLink screen is primary with the main screen off, then the DisplayLink screen flashes continuously when resuming from hibernation. To cure the problem, detach and re-attach the DisplayLink screen. To prevent the problem, set the PC to require a password when coming out of hibernation. (2835)

On Vista WDDM, very occasionally, if the DisplayLink screen is primary with the main screen off, then both the main and DisplayLink screens may show corruption when resuming from hibernation. To cure the problem, enable and disable the main screen. (3219)

On Vista WDDM aero, DisplayLink software can cause some PCs to become more susceptible to TDRs (Timeout Detection and Recovery).

More info at http://wwiv.microsoft.com/whdc/device/display/wddm_timeout.mspx.

Suggested workarounds are (1) upgrade to the latest drivers for the native graphics card; (2) increase TDR timeouts as described in the linked article. (3217)

Known Issues - Intel GMA Integrated Graphics

Some older versions of Intel GMA drivers will cause corruption on the DisplayLink screen. The solution is to upgrade them to version 7.14.10.1111 or later. This is with Vista WDDM. (2164)

Users of Vista WDDM with Intel graphics should exercise caution if using two or more DisplayLink screens at a time. Very occasionally, mode changes or detach/reattach of two DisplayLink devices at once has been observed to cause a complete machine lock-up. (2264)

On Vista WDDM systems with Intel 945GM graphics and with graphics driver versions around 7.14.10.1461 and 7.14.10.1504, playing a video on a DisplayLink attached screen can cause the whole system to run very slow. A reboot is needed to resolve this. To avoid the problem, do not play video on such DisplayLink screens, or downgrade the graphics drivers. (3076)

On Vista WDDM, some computers with Intel graphics reset DisplayLink screens from extend to mirror when coming out of sleep. A workaround is to disable the Intel persistence application, by removing

HKLM\Software\Microsoft\Windows\CurrentVersion\Run\Persistence
(The normal value would be C:\windows\system32\igfxpers.exe). (2546)

DisplayLink software is currently compatible with Intel/ATI hybrid graphics architectures. Nvidia hybrid platforms are not supported yet. (3068)

Known Issues - ATI graphics

The ATI Catalyst Control Center is a tool provided by ATI to control ATI graphics cards. In the presence of DisplayLink attached screens, some parts of the tool, such as its adjustments submenu, do not work. This is on all OSes. (1596)

Some versions of the ATI Catalyst Control Center crash in the presence of DisplayLink software. This has been observed with versions since ATI driver version 8.360. This can cause problems when a screen is attached to the PC. To work around the problem, uninstall the ATI Catalyst Control Center.

On Vista WDDM with ATI graphics, the ATI External Event Utility can interfere with remembered settings for DisplayLink screens. To avoid this, disable the ATI External Event Utility as follows: Navigate to Control Panel -> System and Maintenance -> Administrative Tools -> Services: Ati External Event Utility and change the startup type to Disabled. (2674)

Known Issues - Nvidia graphics

On Vista WDDM, Nvidia driver versions earlier than 7.15.10.7500 or 7.15.11.7500 exhibit slowness on DisplayLink screens on some PCs. To fix this, please upgrade to more recent Nvidia graphics drivers. (2282)

With Vista, a maximum of four DisplayLink screens are supported on machines with Nvidia graphics. In certain rare cases, exceeding this has been seen to cause repeated serious crashes. (1781)

On Vista WDDM, older versions of Nvidia drivers with versions prior to 7.15.11.146 can behave badly in the presence of DisplayLink software. For instance they can cause blue screens when applications are maximised on DisplayLink screens. Also, if DisplayLink devices are attached or detached during restart, it may be necessary to press the reset button on the PC to restore normal functioning. (2119)

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On Vista WDDM, Nvidia 5 series graphics cards with driver version 7.15.10.9685 cause rundll32 crash messages in the presence of DisplayLink software. If you have such a card, please update to a more recent graphics driver version. (3077)

On some Nvidia SLi systems, it is not possible to enable or disable SL1 mode while a DisplayLink screen is attached. (3147)

Triple SLi systems are not supported. (3146)

DisplayLink software is currently compatible with Intel/ATI hybrid graphics architectures. Nvidia hybrid platforms are not supported yet. (3068)

E2. Normal use

System behaviour with up to six DisplayLink attached screens has been well tested. Testing covers plug/unplug, mode changes, playing video, hibernate, sleep/standby, multiple users, different user rights, attached screen as primary screen, attached screen as only screen, and other aspects.

There are many minor issues. General recommendations if something goes wrong:

- detach then reattach the DisplayLink device's USB cable
- change display settings using DL-GUI
- change display settings using WDP.

Known Issues - Hibernate / sleep / monitor power save / screensavers

On Vista, very occasionally, DisplayLink devices fail to resume from hibernation or sleep. This is due to issues in the Vista USB subsystem.

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Known Issues - Hibernate / sleep / monitor power save / screensavers

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Hotfix <http://support.microsoft.com/kb/941600> should help. This is believed to be fixed in Vista Service Pack 1. (2126)

On Vista WDDM, DisplayLink attached screens can be slow when resuming from hibernation or sleep. This is a Vista problem and is believed to be improved in Vista Service Pack 1. (2165)

On all OSes, the desktop background is occasionally missing after restart or after resume from sleep or hibernation. The screens are still usable, and the background can be set again to the desired picture. (2154, 2072)

On all OSes, detaching or attaching DisplayLink attached screens while a screensaver is running may cause strange effects. Sometimes it is necessary to detach and reattach the DisplayLink attached screen after exiting the screensaver. (1984)

3D screensavers do not run well on DisplayLink devices and can cause flicker and/or decreased graphics performance. This is on all OSes. (1150, 1177, 4426)

If devices are detached from the PC before going into standby, then reattached during standby, very occasionally they may not resume when the PC comes out of standby. If this happens, detach and reattach the devices to make them work again. (1492)

Known Issues - Other

In PowerPoint, the “Display slide show on:” menu has a bug which means that it does not work when there are gaps in the numbering of enabled displays (as shown in WDP). Users of PowerPoint 2007 can get round this by using “Show presentation on:” in the ribbon, rather than the “Set up slide show” box. (2337)

Vista WDDM: it's best to avoid switching between 32 bit and 16 bit colour quality on DisplayLink attached screens. Occasionally, this causes the DisplayLink screen to stop working. Detach and reattach it to get it to work again. Very occasionally, this has caused a complete machine lock-up. (2070, 2260)

On Vista WDDM, if a DisplayLink screen is primary, it is not possible for another DisplayLink screen to mirror it. (1870)

CRT monitors may show speckles at very high resolutions. This is because the DisplayLink device cannot always support the high pixel clock required with high CRT refresh rates. (2155)

After a reboot, the numbers used in Windows Display Properties to identify the attached screens may change. This is normal. (596)

On Vista WDDM, when using the DisplayLink GUI to set rotation, occasionally the screen rotation will fail to match the GUI's rotation setting. To fix this, apply the setting again, or detach and reattach the DisplayLink screen. (2186)

When using a display in mirror mode, changing the rotation setting can cause the display to go into extend mode. Setting the display back to mirror mode will show the correct rotation. (2261)

Occasionally, on rotating a DisplayLink screen the monitor may freeze, change resolution or go black. This is most likely if several screens are attached. To recover, detach and reattach the DisplayLink screen. (4061)

The log on screen may be offset or incorrectly sized, when DisplayLink screens are attached. (4144)

After installing the DisplayLink software on a tablet PC, the pen calibration software may not work correctly. Rebooting solves the issue. (4448)

E3. Video players, rendering technologies and applications

Video is supported on Windows Vista in WDDM (Aero) mode. Video playing and rendering using hardware overlays is not supported. The following players are tested by DisplayLink:

- Windows Media Player 11
(www.microsoft.com/windows/windowsmedia/default.msp)
- WinDVD 8 (www.intervideo.com)
- PowerDVD 7 (www.cyberlink.com)
- RealPlayer 11 (www.real.com).

This table shows what rendering interfaces are supported:

<u>Interface</u>	<u>Supported on Vista WDDM Aero?</u>
DxVA	Yes, if supported by the GPU
D3D	Yes, but not if the DisplayLink screen is primary
DirectDraw	Yes
OpenGL	Yes, but not full screen, windowed only
GDI+	Yes, but not full screen, windowed only

On Vista WDDM Basic, video is not supported. It may work in some cases but exhibits poor performance. It may stop working after an update from Windows Update that affects the graphics subsystem. (2028)

On all platforms, depending on the player, there may be problems if the video window is moved between screens while video is running. It may be necessary to close and restart the video player. With Vista WDDM, on some lower-spec PCs, videos on DisplayLink attached screens pause frequently for several seconds at a time. This is because there is insufficient system performance to display video smoothly. (1798)

Known Issues - General

Don't change the logged user or the display mode, position or arrangement of attached screens while a video is running. This usually confuses the video player and the video may stop playing. (1982, 4435)

On Vista WDDM, video players sometimes use hardware overlays to display video. DisplayLink software does not support hardware overlays and these videos do not display on DisplayLink screens. Examples: PowerDVD 7 uses overlays when playing DVDs and so cannot display DVDs on DisplayLink screens. vic can be configured to use overlays and will not work on DisplayLink screens if so configured. (1807)

On Vista WDDM, some graphics-intensive applications use the GDI or OpenGL interfaces. On DisplayLink attached screens, such applications can display in a window but not full screen. Examples of such applications are Starcraft, Quake 3. Also, video players such as Windows Media Player, WinDVD fail to play in full screen mode on DisplayLink screens on some PCs. (1655, 2134)

On Vista WDDM, applications such as games that use Direct3D will not display on a DisplayLink attached screen that is set to primary. (1815)

Some players, including Windows Media Player, do not play DVD content well on DisplayLink attached screens which are set as primary. (2084)

Known issues with specific players and applications

On Vista WDDM, if Windows Media Player is moved to the DisplayLink screen and is then made full-screen, the screen blanks. To get out of this situation, either double click on the blank screen and the player window is restored to non-full screen mode, or right click on the blank screen to invoke the player context menu and select exit full screen. (2032)

Skype video is believed to be unreliable with Vista. It may cause crashes.

On Vista WDDM, if WinDVD is asked to play High-Definition content on a DisplayLink screen, the content will not display and the player may crash. This is because the player uses hardware overlays, which are not supported by DisplayLink software. (1986)

On Vista WDDM, if PowerDVD 7 is playing video on a DisplayLink attached screen, and if the screen is rotated, then PowerDVD 7 crashes. The workaround is to apply rotation to the screen before launching PowerDVD 7. (2013)

E4. Installer and Auto-update function

The installer and auto-update function work on all supported operating systems, both hardware-first and software-first.

Known issues

Do not attach two new DisplayLink devices at once as software for one of them may fail to install. Instead, fully install one device and see it working before attaching a second device. (2022)

On Vista WDDM, the machine may drop to basic mode when a new DisplayLink screen is connected. This is because of Vista's normal performance calculation when new screens are attached. Aero mode can be restored through Control Panel -> Windows Colour and Appearance -> Open classic appearance properties for more colour options -> Windows Aero. (2069)

If you attach a new DisplayLink device, allow software to start installing, then cancel the install part way through, hardware-first install may no longer work. To complete the install, it may be necessary to run setup.exe directly. (1573)

Virus checkers set to very high security may prevent the installer from running. They should be set to lower security during installation and restored to high security once installation is complete. (935)

When installing, make sure that only a single user is logged into the PC. That user needs administrator privileges. (1112)

On PCs where vbscript.dll is not registered with the DLLServer, the DisplayLink installer cannot run. (1824)

AutoUpdate dialogs and menus are not yet localised in Hungarian, Portuguese and Traditional Chinese. Other languages are complete.

F.. Summary of Software State and Issues - Vista XDDM, XP, 2K

Fl. Normal use

System behaviour with up to six DisplayLink attached screens has been well tested. Testing covers plug/unplug, mode changes, playing video, hibernate, sleep/standby, multiple users, different user rights, attached screen as primary screen, attached screen as only screen, and other aspects.

There are many annoyances and intermittent issues. General recommendations when something goes wrong:

- try detaching then reattaching the DisplayLink device's USB cable
- try changing its display settings using the DisplayLink GUI or the Windows Display Properties dialog box.

Known issues - hibernate / sleep / monitor power save / screensavers

On all OSes, the desktop background is occasionally missing after restart or after resume from sleep or hibernation. The screens are still usable, and the background can be set again to the desired picture. (2154, 2072)

On all OSes, detaching or attaching DisplayLink attached screens while a screensaver is running may cause strange effects. Sometimes it is necessary to detach and reattach the DisplayLink attached screen after exiting the screensaver. (1984)

3D screensavers do not run well on DisplayLink devices and can cause flicker and/or decreased graphics performance. This is on all OSes. (1150, 1177, 4426)

When the machine is set to ask for a password after standby / sleep / hibernate / screensaver etc, sometimes the login screen displays on all attached screens and sometimes it displays on a single screen only.

If devices are detached from the PC before going into standby, then reattached during standby, very occasionally they may not resume when the PC comes out of standby. If this happens, detach and reattach the devices to make them work again. (1492)

Known issues - Windows 2000

Installation of DisplayLink driver on Windows 2000 SP4 requires patch SP4 Rollup 1. This is available from www.microsoft.com. See Microsoft Knowledge Base article KB891861.

It is important to check in Windows 2000 that full USB2 is available, otherwise performance will be impaired. To do this, look in Device Manager under Universal Serial Bus Controllers for an item called "USB 2.0 Root Hub". If it is not there then performance will be USB1. (1188)

On Windows 2000, when many devices are attached to the PC and the PC is hibernated then woken up, not all the devices come back to life immediately. It is occasionally necessary to detach and reattach the USB connection to a device to coax it back to life. (1293, 1302)

On a Windows 2000 system where only a DisplayLink screen is enabled, locking the screen and then disconnecting it could cause all the other screens to remain unusable. Reconnecting the DisplayLink screen solves the issue. (4501)

Foreign language support on Windows 2000 has not been fully tested.

Known issues - other

When fast user switching to an user account without administrative privileges and then logging off, the DisplayLink screens may go black. (4446)

In PowerPoint, the "Display slide show on:" menu has a bug which means that it does not work when there are gaps in the numbering of enabled displays (as shown in WDP). Users of PowerPoint 2007 can get round this by using "Show presentation on:" in the ribbon, rather than the "Set up slide show" box. (2337)

CRT monitors may show speckles at very high resolutions. This is because the DisplayLink device cannot always support the high pixel clock required with high CRT refresh rates. (2155)

The ATI Catalyst Control Center is a tool provided on machines with AT! graphics cards for managing extra screens. Some versions of this tool crash in the presence of DisplayLink software. This has been observed with versions since AT! driver version 8.360. The workaround is to uninstall the ATI Catalyst Control Center. (2054)

After a reboot, the numbers used in Windows Device Properties to identify the attached screens may change. This is normal. (596)

F2. Video players, rendering technologies and applications

On Vista XDDM, video support is very limited. With extended screens, video or DVD playback are not supported in general. Exceptions:

PowerDVD7 and Quicktime are able to display video on a DisplayLink attached display, so long as that display is the primary display. Video is not supported in clone mode. It works, but exhibits poor performance. (1495)

On XP, video support is limited to players that support hardware overlays. In extend mode, the following media players work:

- Windows Media Player 11
(www.microsoft.com/windows/windowsmedia/default.msp)
- WinDVD 8 (www.intervideo.com)
- PowerDVD 7 (www.cyberlink.com)
- RealPlayer 11 (www.real.com)

There is limited support for other video players, and for video in mirror mode.

This table shows what rendering interfaces are supported:

<u>Interface</u>	<u>Supported on XP extend?</u>
DxVA	No
D3D	No
DirectDraw	Yes
OpenGL	No
GDI+	No

On all platforms, depending on the player, there may be problems if the video window is moved between screens while video is running. It may be necessary to close and restart the video player.

Known issues - general

Don't change the logged user or the display mode, position or arrangement of attached screens while a video is running. This usually confuses the video player and the video may stop playing. (1982)

Some players, including Windows Media Player, do not play well on DisplayLink attached screens which are set as primary. (2084)

DVD movies will not play back if they are dragged to an extended DisplayLink screen while running. They play OK if the player starts up on the extended screen. (no bug number)

On Windows 2000, video playing is not supported. (2708)

Known issues with specific players and applications

Windows Media Player sometimes fails to play DVDs on extended screens on Windows XP. The workaround is to switch off VMR in WMP. (3884)

RealPlayer does not play DVDs on extended or mirrored screens on Windows XP. This is the case whether the extra screens are DisplayLink screens or directly attached. (2802)

Skype video is believed to be unreliable with Vista. It may cause crashes (no bug number).

Skype video does not work on DisplayLink screens with Windows XP. This is because Skype video uses VMR9, which is supported by DisplayLink software on Vista WDDM, but not on Vista XDDM or on XP. Trying to use skype video on XP may cause black screens or freeze the DisplayLink attached screen. (1651)

On XP, W1nDVD may crash when trying to play Bluray with the DisplayLink screen as the primary screen. (3785)

When using a display in mirror mode, changing the rotation setting can cause the display to go into extend mode. Setting the display back to mirror mode will show the correct rotation. (2261)

Occasionally, on rotating a DisplayLink screen the monitor may freeze, change resolution or go black. This is most likely if several screens are attached. To recover, detach and reattach the DisplayLink screen. (4061)

F3. Installer and Auto-update function

The installer and auto-update function work on all supported operating systems, both hardware-first and software-first. USB drivers have been signed.

Known issues

On Windows 2000, DisplayLink software fails to install on PCs where Service Pack 4 was installed before installing a MUI pack. This is a Windows issue - see Microsoft Knowledge Base article 263212. To work round this problem, go to Control panel, Regional Options, select the General tab and change the Menus and Dialog combo box to English. You will need to log off, and log back on. Install DisplayLink software, and then set the language settings back to their original settings. (1010)

Do not attach two new DisplayLink devices at once as software for one of them may fail to install. Instead, fully install one device and see it working before attaching a second device. (2022)

If you attach a new DisplayLink device, allow software to start installing, then cancel the install part way through, hardware-first install may no longer work. To complete the install, it may be necessary to run setup.exe directly. (1573)

Virus checkers set to very high security may prevent the installer from running. They should be set to lower security during installation and restored to high security once installation is complete. (935)

When installing, make sure that only a single user is logged into the PC. That user needs administrator privileges. (1112)

On PCs where vbscript.dll is not registered with the DLLServer, the DisplayLink installer cannot run. (1824)

AutoUpdate dialogs and menus are not yet localised in Hungarian, Portuguese and Traditional Chinese. Other languages are complete. (Vista XDDM) Occasionally, after install and reboot, the DisplayLink devices are not operational. In this case, reboot again and they become operational. (969)

Smart USB Monitor - Product Support

Additional support for your DoubleSight Displays Smart USB Monitor can be found by visiting www.doublesight.com or by calling DoubleSight Customer Service at 888.897.8869