

# AppianX

Multiple Monitor Graphics Cards

User Guide



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5,835,090  
5,848,294  
5,949,437

Additional patents are pending.

## **How to Contact Appian Graphics**

In the United States (US), as well as Europe, the Middle East, and Africa (EMEA), use the following information to get help fast:

General	425-882-2020 (US) +44 (0)20 7499-2535 (EMEA)
Sales	800-727-7426 (US)
Technical Support	800-422-7369, 7am – 5pm PST (US) +44 (0)20 7499-2535 (EMEA)
Fax	425-882-8618 (US) +44 (0)20 7495-7636 (EMEA)
Address (US)	Appian Graphics Corp. 18005 NE 68 <sup>th</sup> Street, Suite A120 Redmond, WA 98052
Address (EMEA)	Appian Graphics Ltd. Top Floor, 73 New Bond Street London, W1S 1RS United Kingdom
Email	support@appian.com (US) nitin@appian-emea.com (EMEA)
Web site	www.appian.com

## **Information We Will Need**

Please have the following information available before you contact Appian Technical Support:

- The name and serial number of your Appian product
- Information about your computer; including the manufacturer, the system BIOS, the type/brand/model of your monitor(s), and other devices installed in your system.
- A detailed description of the problem

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## Chapter 1

# Introduction to AppianX

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Thank you for purchasing the AppianX multiple monitor graphics card. This guide introduces you to AppianX architecture, performance capabilities and included software. This guide also contains an overview of HydraVision display management software, details about video support, and important technical information. Be sure to read this entire User Guide.

AppianX is available in a 4-port model for quad-monitor support. With four display channels, AppianX is designed to support multiple monitor configurations in Windows 2000 and Windows NT 4.0.

The AppianX card is a single-slot, multiple monitor graphics solution featuring a high-speed PCI bus interface, 64MB of on-board SDRAM (Synchronous Dynamic Random Access Memory), and full VGA and SVGA compatibility.

AppianX uses the high-performance Appian AGX1 graphics processor for multiple monitor output. The AGX1 features two 330MHz RAMDACs, two digital output ports and accelerated 2D and 3D graphics. The card interface to the PCI (versions 2.1 and above) bus and incorporates multi-function capabilities for complete multiple monitor operating system support. The result is a fast, high-resolution display.

The high-resolution display, plug-and-play compliance, support for multi-threaded, multiple monitor OpenGL and DirectX hardware acceleration, support for DVD motion compensation and color space conversion, and optional video input for overlay display makes AppianX well-suited for sophisticated display tasks. The 60-pin low force helix (LFH) custom connectors and a 9-pin video connector allow direct connection to analog or DVI digital display devices.

AppianX also features Appian's powerful and easy-to-use HydraVision multiple monitor desktop management software for Windows 2000 and Windows NT 4.0. HydraVision software allows the user to define the placement and behavior of windows and dialog boxes in the multiple monitor display space, and provides a variety of productivity tools designed specifically for managing multiple monitors.

HydraVision display management software provides language support for Brazilian Portuguese, Danish, Dutch, Finnish, French, German, Italian, Japanese, Korean, Norwegian, Spanish, Swedish, Simplified Chinese and Traditional Chinese.

If you are running Windows in any of the above languages, HydraVision will automatically load the appropriate localized control panel or tab. If you are running Windows in a non-supported language, HydraVision and the local help files will be available in English only.



## **Included with AppianX**

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Before using your AppianX hardware and software, please verify that your package contains the items listed below.

- AppianX PCI graphics card
- AppianX Installation CD-ROM
- Registration/Warranty Card
- 12" DVI Y Cables (Qty. 2)
- Analog adapters (Qty. 4)
- Video adapter (Qty. 1)

Please contact Appian Technical Support if you find any of these items missing or damaged. Fill out and return the registration/warranty card to ensure full support from Appian for your AppianX product.

To get the best performance from your AppianX card, use the supplied Windows 2000 or Windows NT 4.0 drivers and HydraVision display management software. Each operating system requires a separate program for configuring displays. Be sure to use the appropriate device drivers and configuration program for your operating system.

## **Using Multiple Monitors**

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AppianX supports the use of multiple monitors in Windows 2000 and Windows NT 4.0. Using a multiple monitor configuration is an efficient and cost-effective way to increase the size of your computer display area, commonly called the desktop. With multiple monitors, you can view a single application as a large window stretching across several monitors, or you can display different applications on each monitor.

## Chapter 2

# Get Started

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### General System Requirements

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- A PC platform with a  $\frac{3}{4}$  length PCI slot compliant with PCI revision 2.1 or higher
- Windows 2000 or Windows NT 4.0 with Service Pack 4 or higher
- Pentium II processor
- At least 128MB of installed system memory (RAM), or twice as much system RAM as graphics memory on your AppianX card(s)

AppianX is VGA compatible and provides full support for Super VGA drivers written to Video Electronics Standards Association (VESA) specifications.

### Prepare for Hardware Installation

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To complete the installation, you may need some or all of the following tools:

- Medium size flat head screwdriver
- Medium size Phillips head screwdriver
- $\frac{3}{16}$ " wrench or nut driver

To prepare your computer for installation of the AppianX card, perform the following steps:

1. Turn off the computer and the power for all external devices (monitor, printer, etc.).
2. Disconnect all cables from the rear of your computer to give you more room to work. Note where each cable connects so you can reconnect it after installing the AppianX card.

3. Remove the cover-mounting screws on the computer. If necessary, refer to your system instruction manual for information on removing the computer cover.
4. Carefully remove the cover from the computer. The system motherboard should now be in full view.

## Install AppianX

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- ⊗ **WARNING! Do not modify the jumpers on your AppianX card. A change to the factory set jumper configuration could change the performance of the AppianX.**

To install your AppianX card, perform the following steps:

1. Remove any previously installed graphics card(s) from the system.
2. Locate an available PCI expansion slot for the AppianX card. If necessary, remove the expansion slot cover and partner screw using the appropriate tool.
- ⊗ **WARNING! The AppianX is static sensitive. To avoid damage to the card from static electricity, ground yourself before handling the card by touching the metal frame on your computer. This dissipates any static electricity and prevents damage to sensitive components.**
3. Hold the AppianX card by its top edge and slide it into the available slot. The PCI bus interface should fit into the slot. Make sure the AppianX card is firmly seated in the slot.
4. Once the AppianX card is correctly seated in the slot, secure it with the partner screw.
5. Replace and secure the computer cover.
6. Proceed to the monitor cabling section below.

## AppianX Monitor Cabling

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The AppianX DVI card supports output to either analog or digital display devices. When your AppianX DVI hardware installation is complete, you will need to attach the supplied DVI Y cable(s) between the AppianX card and your display devices.

To connect the AppianX DVI card to the desired display devices, perform the following steps:

1. Attach the supplied DVI Y cable(s) to the installed AppianX DVI card (Figure 1).

⊗ **WARNING! Make sure the cable connector is mated correctly to the connector on the AppianX card. It is possible to plug the cable into the card incorrectly. This could cause damage to the cable connector.**

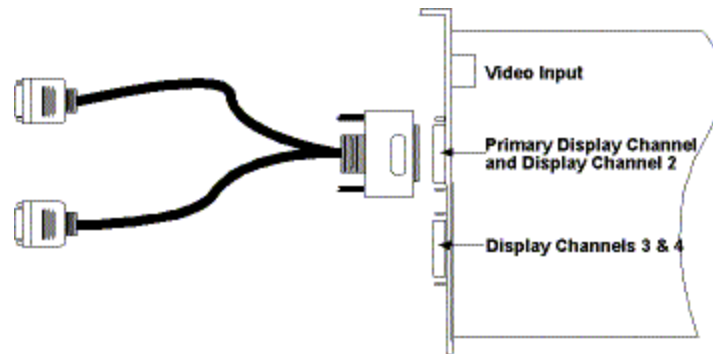


Figure 1. AppianX DVI Cabling

2. **If you plan to output display from the AppianX DVI card to a DVI device**, such as a digital flat panel or digital projector, attach the supplied DVI Y cable(s) directly to your DVI device cable(s) (Figure 2). Cable installation is complete.

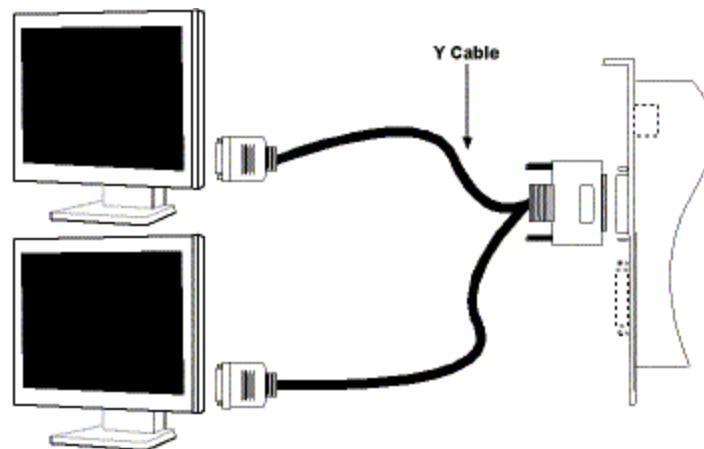


Figure 2. DVI Device Cable Installation

3. **If you plan to output display from the AppianX DVI card to an analog device**, such as a CRT monitor or analog projector, attach the supplied analog adapters (Figure 3) to the DVI Y cable(s) connected to the AppianX DVI card.

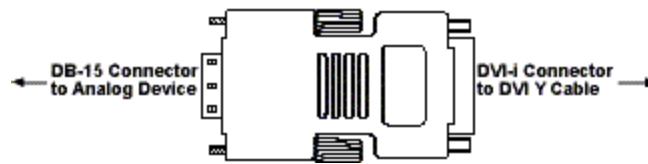
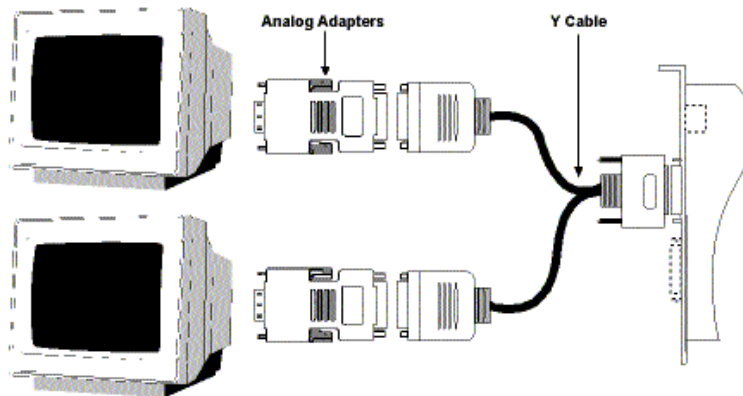


Figure 3. Analog Adapter

4. Attach the DVI Y cable(s) with adapters to the appropriate input connectors on your display device cables (Figure 4).



*Figure 4. Analog Device Cable Installation*

Once the cable installation is complete, you will be ready to load the provided device drivers and HydraVision display management software.

***To install the device driver for Windows NT 4.0, go to Chapter 3.***

***To install the device driver for Windows 2000, go to Chapter 4.***

## Chapter 3

# Install and Use Software for Windows NT 4.0

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This chapter explains how to install and use the AppianX Windows NT 4.0 driver and HydraVision desktop management software.

HydraVision consists of a Desktop Manager that tracks windows and dialog boxes, a graphical user interface (GUI) control panel that allows you to control multiple monitors running in a single system, and the Appian MultiDesk utility.

*NOTE: For general information regarding driver installation in Windows NT 4.0, please refer to your Windows documentation.*

*NOTE: AppianX requires that you run Windows NT 4.0 with Service Pack version 4 or later. The Service Pack version number is shown on the blue start up screen. If you have an older Service Pack, upgrades are available from Microsoft ([www.microsoft.com](http://www.microsoft.com)).*

**⊠ WARNING! To avoid possible conflicts, temporarily disable your virus protection software during installation of AppianX software. You may reactivate virus protection after the installation is complete.**

## **Install the Windows NT 4.0 Driver and HydraVision Software**


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To install the AppianX Windows NT 4.0 device driver and HydraVision software, perform the following steps:

1. Boot your system in VGA mode. From the boot menu, select **Windows NT Workstation Version 4.0 [VGA Mode]** at the prompt.
2. Windows displays the **Invalid Display Settings** system message. Click **OK**.
3. The **Display Properties** dialog box is displayed on the desktop. Insert the AppianX installation CD-ROM into the appropriate drive.
4. Select the **Settings** tab from the Display Properties dialog box, then click the **Display Type** button.
5. Click the **Change** button.
6. Click the **Have Disk** button. The **Install from Disk** window appears.
7. Select the path to the Windows NT driver file (.inf) using the **Browse** button. Click **OK**.
8. The **Change Display** window appears with the Appian driver displayed. Click **OK**.
9. A warning box from Windows appears stating that you are installing third-party software drivers. Click **Yes** to proceed.
10. The AppianX driver files and HydraVision software are now installed, and a message appears confirming successful installation. Click **OK**.
11. You are returned to the **Display Type** window. Click **Close** to exit.
12. You are returned to the **Display Properties** dialog box. Click **Close** to exit.




13. You will now be prompted by Windows to restart your system. Click **Yes**.
14. Windows now restarts in single monitor mode. You can change the resolution and refresh rate for the AppianX card from the **Settings** tab of the **Display Properties** dialog box. You can enable additional monitors from the **Multi-Monitor** tab of the **Display Properties** dialog box.

 *NOTE: When selecting your analog display options, keep in mind that most applications require a color depth greater than 256 colors for optimal display.*

## **Install Local Help Files**

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Appian Help provides a choice between connecting to on-line help or to local HTML-based help. Local HTML-based help files can be installed from the CD-ROM that shipped with your product package. If you wish to have local HTML-based help files accessible from the **Help** button of the Display Properties dialog box, perform the following steps:

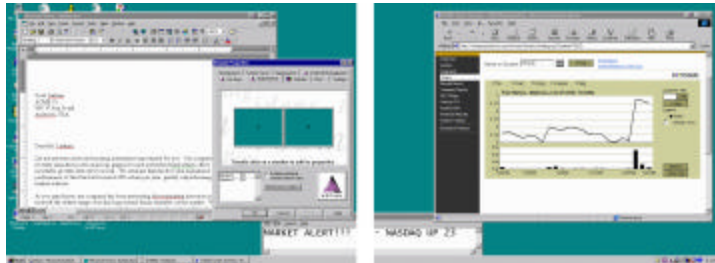
 *NOTE: You must have an Internet browser installed on your system to view Appian help files.*

1. Insert the AppianX installation CD-ROM into the appropriate drive.
2. Run the Help Setup program by selecting **Run** from the Windows **Start** menu and selecting the path to the Help **setup.exe** file (in the **Help** folder) using the **Browse** button.
3. Click **OK**.
4. Follow the program prompts to complete the installation.

## Use HydraVision

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HydraVision software works with the AppianX hardware and device drivers to create a seamless multiple monitor desktop. HydraVision allows multiple monitors connected to the AppianX card to appear as one large display rather than several smaller ones. You can spread one application across all monitors or put a different application on each monitor.



*Figure 5. Dual Monitor Array*

The above figure shows four applications displayed on two monitors. The desktop and applications stretch across both monitors. HydraVision allows you to drag, drop and resize application windows to fit anywhere on a multiple monitor desktop.

Using multiple monitors with Windows can be awkward when windows and dialog boxes are split across monitors or appear where they're not wanted. The HydraVision Desktop Manager solves this problem by allowing you to set preferences for window and dialog box placement.

HydraVision installation in Windows NT 4.0 enables the Appian Desktop Manager and adds the HydraVision display management software to your Windows Control Panel group, where it appears as additional tabs in the Display Properties dialog box. The HydraVision control panel allows you to adjust the Desktop Manager and other display options.

The Desktop Manager starts automatically with Windows. You can tell that HydraVision is running by the presence of the Appian icon in the Windows system tray.



Figure 6. HydraVision System Tray Icon

Right-click on this icon to access HydraVision features or help, or to unload the HydraVision Desktop Manager. In addition to accessing HydraVision from the system tray, you can also access HydraVision by right-clicking on the Windows desktop and selecting **Properties**.

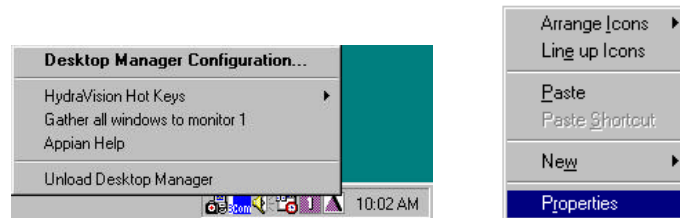
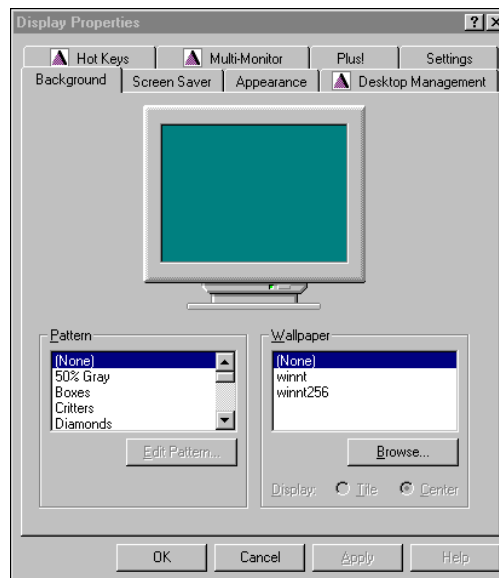


Figure 7. Accessing HydraVision for Windows NT 4.0

The HydraVision Desktop Manager allows you to adjust display options, such as hot keys, within a user-friendly graphical interface.

*NOTE: Some application windows and dialog boxes are not written to Windows standards. HydraVision may not be able to recognize and control these application's windows and dialog boxes.*



*Figure 8. Display Properties Dialog Box Example*

The above figure shows an example of the Windows **Display Properties** dialog box with the Appian HydraVision tabs. All the normal Display Properties tabs are still available, including the **Settings** tab, which allows you to change desktop resolution and color depth for analog displays.

The HydraVision tabs (**Multi-Monitor**, **Desktop Management** and **Hot Keys**) allow you to modify your display options.

HydraVision also provides a dialog for extended display control, accessible from the **Multi-Monitor** tab. The **Extended Display Settings** dialog allows you to define and adjust each monitor in your system separately.

Along the bottom of each HydraVision dialog are four buttons: **OK**, **Cancel**, **Apply** and **Help**.

- **OK** implements the changes you've made in the **Display Properties** dialog box and exits the control panel. Changes take effect immediately unless you see a message prompting you to restart your computer.
- **Cancel** discards *all* changes made to any section of **Display Properties** and closes the dialog box.
- **Apply** implements your changes without closing the **Display Properties** dialog box.
- **Help** connects to either local or on-line HTML-based help. You can also get context-sensitive on-screen help by moving your mouse over the relevant text for each control.

## Multi-Monitor Controls

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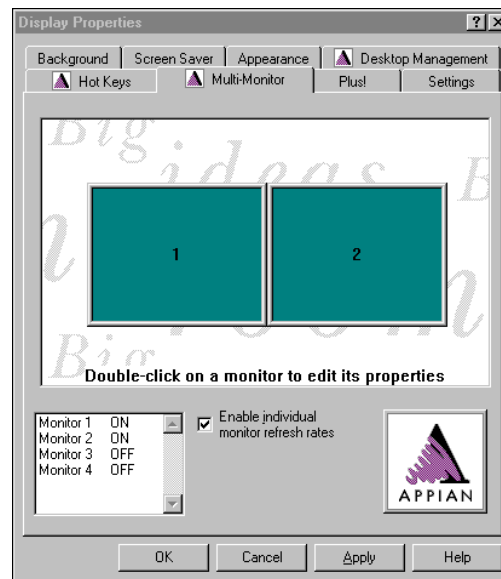


Figure 9. Multi-Monitor Dialog Example

The **Multi-Monitor** dialog features a graphic representation of the current monitor array. You can drag the monitor illustrations to new locations in the diagram to change the array. You can also enable and disable monitors by double-clicking on the monitor number in the list box.

If the **Enable Individual Monitor Refresh Rates** box is checked, you can select independent refresh rates for each monitor in the system. Available refresh rates and other settings are contained in the **Extended Display Settings** dialog. To access the **Extended Display Settings** dialog, double-click on the individual monitor illustrations.

## Extended Display Settings

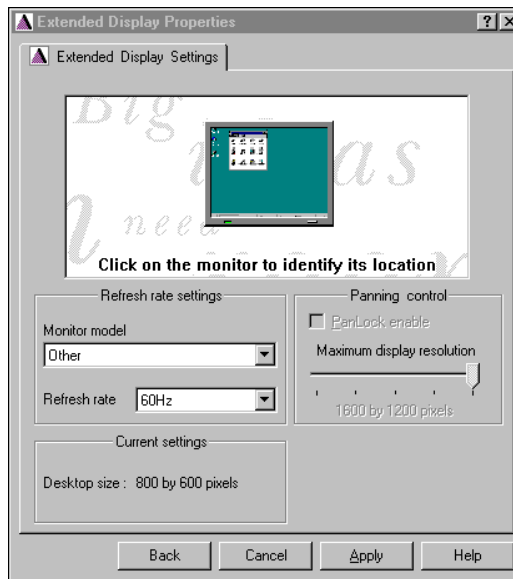


Figure 10. Extended Display Settings Dialog Example

### Refresh rate settings:

- **Monitor Model**—From the drop-down menu, select the model and brand of the monitor(s) you are using so that HydraVision can automatically determine the appropriate refresh rate for your display. This prevents manual selection of a refresh rate that is not supported by your monitor(s). If your monitor is not listed in the drop-down menu, it should still operate with the AppianX card, as long as it is a multi-sync monitor. For monitors that are not listed, select **Other** and manually choose the desired refresh rate.
- ☒ **WARNING! Do not select a refresh rate higher than your monitor can support. Monitor damage may result.**

- **Refresh Rate**—HydraVision automatically determines the appropriate refresh rate for your monitor based on your model selection, as explained above. You may choose different refresh rates from the drop-down menu for each monitor. In general, a higher refresh rate improves display quality but lowers performance, because the graphics system can only do a fixed number of operations per second. The more time it spends redrawing the screen, the less time it has for other operations.

### **Current Settings:**

This box indicates the current resolution of your monitors. To change the desktop size, go to the Windows **Display Properties** dialog box and select the **Settings** tab. Change the **Desktop Area** using the slider bar.

*NOTE: The Windows Settings dialog allows you to define the resolution of your desktop. The HydraVision Extended Display Settings dialog allows you to define the resolution of each monitor. If your monitors are set at different resolutions, a virtual desktop will be enabled on the monitor that is set to a lower resolution.*

### **Panning control:**

- Panning is not enabled in Windows NT 4.0.



## Desktop Management Controls

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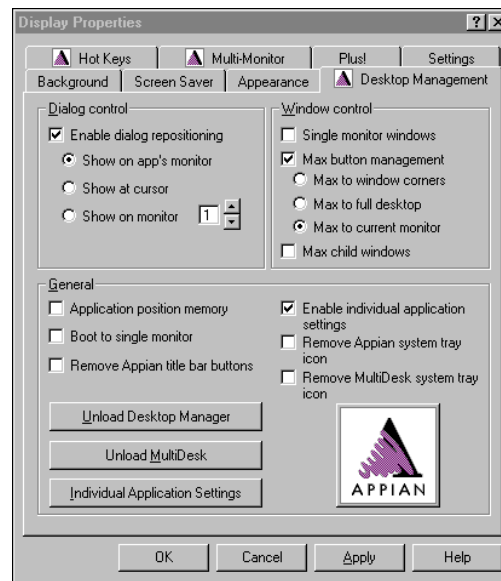


Figure 11. Desktop Management Dialog Example

The **Desktop Management** dialog lets you determine the behavior of pop-up windows and dialog boxes in a multiple monitor environment.

### Dialog Control:

- **Enable dialog repositioning**—Toggles dialog control on and off. When it is checked, you can choose to have dialog boxes appear on the parent application's monitor (The parent application is the application that generated the dialog box.). If the parent application or associated monitor cannot be located, the dialog box defaults to Monitor 1. You can also choose to have dialog boxes appear on the monitor in which the cursor is located or to always appear on a specific monitor in the array.

☞ *NOTE: Windows system logon and logoff messages cannot be repositioned and will always appear split across monitors unless the **Boot to single monitor** control is enabled (see below).*

#### **Window control:**

- **Single monitor windows**—When this box is checked, windows are sized no larger than a single monitor. Windows that are placed on monitor splits are automatically relocated to the monitor on which most of the window appears.
- **Max button management**—Allows you to control the behavior of the Windows **Maximize** button. In a typical Windows environment, clicking the **Maximize** button causes a window to size itself to the full desktop.


☞ *NOTE: Clicking the Appian icon on the application title bar makes the active window fill the current monitor, regardless of this setting.*

- **Max to window corners** causes windows to maximize to the monitor(s) that contains the window's upper left and lower right corners.
- **Max to full desktop** causes windows to maximize to the entire monitor array.
- **Max to current monitor** causes windows to maximize to the monitor that contains the greatest portion of the window.
- **Max child windows**—Keeps windows generated by parent applications from splitting across monitors (A child window is a window residing within a parent application window.). The ability to keep child windows on a single monitor when maximized is extremely useful for editing multiple documents side by side in a parent application.


**General:**

- **Application position memory**—Check this box to “remember” the size and location of application windows when they are closed and reapply those settings when the application is reopened.
- **Boot to single monitor**—Check this box to boot your system in single monitor mode. This prevents system messages and the Windows splash screen from splitting across monitors during boot-up. The display will switch to multiple monitor mode after you log on and the Appian Desktop Manager loads.
- **Remove Appian title bar buttons**—Check this box to disable and remove the Appian icon, visible in the upper right corner of all active application title bars, which maximizes the active window and allows access to individual application settings.
- **Enable individual application settings**—Check this box to specify desktop management settings for individual applications. You can access these settings by clicking on the down arrow of the Appian icon in the application title bar or by clicking the **Individual Application Settings** button in the **Desktop Management** dialog.
- **Remove Appian system tray icon**—This box removes or restores the Appian system tray icon.
- **Remove MultiDesk system tray icon**—This box removes or restores the MultiDesk system tray icon.

**Load/Unload Desktop Manager**—This button restores or removes the HydraVision Desktop Manager. Unloading the Desktop Manager returns display settings to Windows defaults. You should only select this option if you do not want to use any multiple monitor dialog box and window controls or hot keys.

 *NOTE: **Unload** applies to your current Windows session only. When Windows restarts, the Desktop Manager will reload.*

**Load/Unload MultiDesk**—This button restores or removes multiple desktop functionality.

 *NOTE: **Unload** applies to your current Windows session only. When Windows restarts, MultiDesk will reload.*

**Individual Application Settings**—This button allows you to specify, enable and disable desktop management settings for individual applications.

 *NOTE: These settings override the global settings defined in the **Desktop Management** dialog.*

## Hot Keys Controls

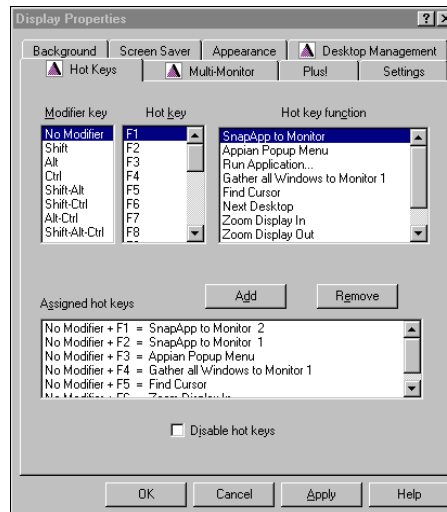


Figure 12. Hot Keys Dialog Example

The Hot Keys dialog allows you to specify hot key shortcuts for common operations such as starting applications, snapping applications to designated monitors and changing display resolution.

### Create/Remove Hot Keys

To create custom hot key sequences, select a **Modifier key** (Shift, Alt, etc.), a **Hot key**, and the **Hot key function** you want this key combination to perform. Click **Add** to enter your new combination in the **Assigned hot keys** list box. Click **Apply** to activate assigned hot keys.

*NOTE: Appian recommends that a modifier key be used with any function key (F1, F2, etc.) assigned as a hot key. This will prevent interference with the function of these keys in individual applications.*

To delete a hot key from the **Assigned hot keys** list box, highlight it, click **Remove**, and then click **Apply**.

You can disable all hot keys listed in the **Assigned hot keys** list box by checking the **Disable hot keys** box near the bottom of the **Hot Keys** dialog.

## Use Hot Keys

You can use any assigned hot key at any time, from within any application, to change your display.

Provided hot key functions include:

- Snap App to Monitor—Allows you to move or “snap” active windows or dialogs from monitor to monitor for quick placement and viewing of desktop contents.
- Appian Pop-up Menu—Allows on the fly access to HydraVision controls.
- Run Application—Lets you start any application with a hot key.
- Gather All Windows to Monitor 1—Allows you to find applications that are hidden or are open and lost on disabled monitors.
- Find Cursor—Locates the cursor on a busy or crowded desktop.
- Next Desktop—Accesses other active desktops (see below).
- Zoom Display In/Out—Causes the desktop resolution to increase or decrease.
- Set Desktop to Current Settings—Allows you to save and assign all aspects of a specific desktop configuration, including monitor arrangement, desktop resolution, and resolution and refresh rate per monitor to a hot key.

## MultiDesk

---

Appian's HydraVision software supports multiple desktops. With MultiDesk, one active desktop will always be visible; while up to eight active desktops can reside in the background. When MultiDesk is running, the MultiDesk icon in the system tray displays the number assigned to the current desktop.

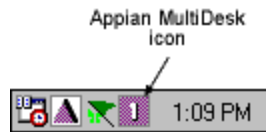


Figure 13. MultiDesk System Tray Icon

Right-click on this icon to access MultiDesk controls. In addition to accessing active desktops from the system tray, you can also access active desktops with a **Hot key** shortcut.

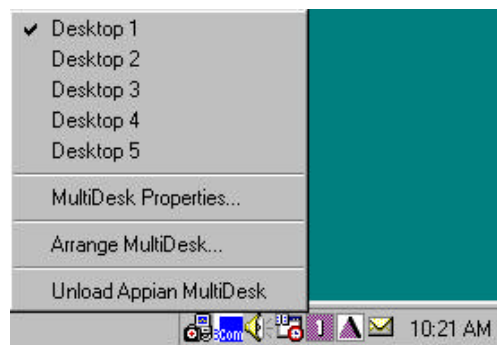



Figure 14. MultiDesk Pop-Up Menu

To switch to another defined desktop, select the appropriate desktop number from the pop-up menu. To enable, disable and name active desktops, select **MultiDesk Properties** from the pop-up menu. To arrange applications within active desktops, or to enable specific applications on all desktops, select **Arrange MultiDesk** from the pop-up menu.

 *NOTE: This applies to your current Windows session only. When Windows restarts, MultiDesk will reload.*





## Chapter 4

# Install and Use Software for Windows 2000

---

This chapter explains how to install and use the AppianX Windows 2000 drivers and HydraVision desktop management software.

 *NOTE: For general information regarding driver installation in Windows 2000, please refer to your Windows documentation.*

 **WARNING! To avoid possible conflicts, temporarily disable your virus protection software during installation of AppianX software. You may reactivate virus protection after the installation is complete.**

## Install the Windows 2000 Driver

---

To install the AppianX Windows 2000 device driver and HydraVision software, perform the following steps:

1. Upon boot up of the system, Windows will automatically detect the new hardware and the **Found New Hardware** Wizard will appear. Click **Next**.
2. A generic video controller device has been detected. Select the **Display a list of the known drivers...** option and click **Next**.
3. Select **Display Adapters** and click **Next**.
4. Insert the AppianX installation CD-ROM into the appropriate drive.
5. Click **Have Disk**.

6. Select the path to the Windows 2000 driver file (.inf) on the CD-ROM using the **Browse** button. Click **OK**.
7. The Appian driver will be displayed. Click **Next**.
8. Click **Yes**, Click **Next**, click **Yes**.
9. The driver files for the device are installed. Click **Finish** to close the Wizard.
10. You will be prompted to restart the system. Click **No**.
- ⊗ **WARNING! Restarting the system may result in an incomplete installation of the AppianX drivers.**
11. Because there are multiple graphics processors on the AppianX card, the **Found New Hardware** Wizard will appear again. Click **Next**.
12. Select the **Display a list of the known drivers...** option and click **Next**.
13. An Appian device has been detected. Click **Next**.
14. Click **Next**, then click **Yes**.
15. The driver files for this device are installed. Click **Finish** to close the Wizard.
16. Repeat steps **12-15** for the next device detected by the Wizard.
17. Repeat steps **12-15** for the next device detected by the Wizard.
18. You will be prompted to restart the system. Click **No**.
- ⊗ **WARNING! Restarting the system may result in an incomplete installation of the AppianX drivers.**
19. The **Found New Hardware** Wizard will appear again. Click **Next**.

20. A generic "multimedia video controller" device has been detected. Select the "**Search for a suitable driver...**" option and click **Next**.
21. Make sure that the location of the driver files is selected and click **Next**.
22. The video driver file (.INF) will be located. Click **Next**.
23. Click **Yes**.
24. The driver files for the device are installed. Click **Finish** to close the Wizard.
25. Repeat steps **19-24** for the next device.
26. You will need to restart the system. From the Windows **Start** menu, select **Shut Down**, then **Restart** and click **OK**.
27. Windows now restarts in single monitor mode. You can enable additional monitors and change the resolution on the **Settings** tab of the **Display Properties** dialog box (See section below).

## Enable Additional Monitors

---

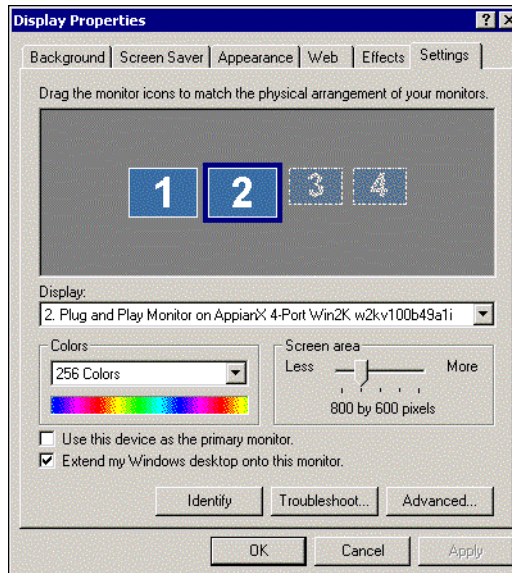


Figure 15. Enable Additional Monitors


To enable additional monitors, perform the following steps:

1. From the Windows **Start** menu, select **Settings**, then **Control Panel**.
2. Double-click on the **Display** icon.
3. Select the **Settings** tab.
4. Click the **illustration** of the monitor you wish to enable.
5. Check the **Extend my Windows desktop onto this monitor** check box, then click **Apply**.
6. You can also change the screen area (resolution) using the **Screen area** slider bar.

## Install Local Help Files

---

Appian Help provides a choice between connecting to on-line help or to local HTML-based help. Local HTML-based help files can be installed from the CD-ROM that shipped with your product package. If you wish to have local HTML-based help files accessible from the **Help** button of the HydraVision control panel, perform the following steps:

 *NOTE: You must have an Internet browser installed on your system to view Appian help files.*

1. Insert the AppianX installation CD-ROM into the appropriate drive.
2. Run the help file Setup program by selecting **Run** from the Windows **Start** menu and selecting the path to the Help **setup.exe** file (in the **Help** folder) using the **Browse** button.
3. Click **OK**. Follow the program prompts to complete the installation.

## Use HydraVision

---

The Windows 2000 operating system is designed to recognize multiple monitors in a single system. Appian's HydraVision software is specifically designed for use with Windows 2000. HydraVision software installation enables the Appian Desktop Manager and creates a Windows program group for HydraVision display management software.

HydraVision and the Appian Desktop Manager are activated whenever Windows starts. You can tell that HydraVision is running by the presence of the Appian icon in the Windows system tray.



Figure 16. HydraVision System Tray Icon

Right-click on this icon to access HydraVision features and help, or to unload the HydraVision Desktop Manager. In addition to accessing HydraVision from the system tray, you can also access HydraVision from the Windows **Start** menu under **Programs**.



Figure 17. Accessing HydraVision

The HydraVision Desktop Manager allows you to modify your display options. You can access the **Desktop Management** and **Hot Keys** dialog boxes by clicking on the appropriate tab in the Desktop Manager.

Along the bottom of each HydraVision dialog are four buttons: **OK**, **Cancel**, **Apply** and **Help**.

- **OK** implements the changes you've made in the HydraVision dialog and exits the Desktop Manager. Changes take effect immediately unless you see a message prompting you to restart your computer.
- **Cancel** discards *all* changes made to any section of the HydraVision dialog and closes the Desktop Manager.
- **Apply** implements your changes without closing the Desktop Manager.
- **Help** connects to either local or on-line HTML-based help. You can also get context-sensitive on-screen help by moving your mouse over the relevant text for each control.

## Desktop Management Controls

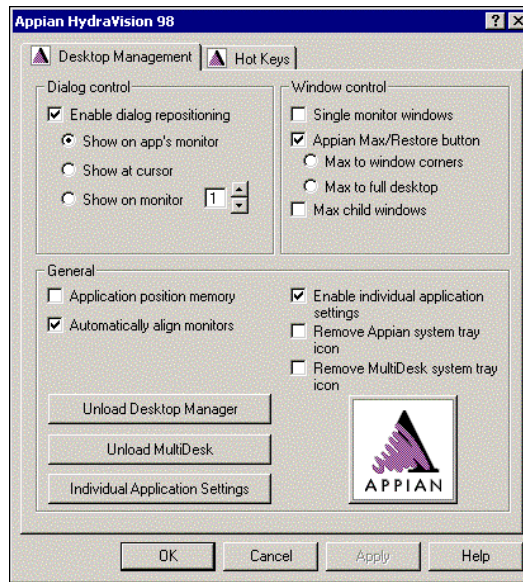


Figure 18. Desktop Management Dialog Example

The **Desktop Management** dialog lets you determine the behavior of pop-up windows and dialog boxes in a multiple monitor environment.

### **Dialog control:**

- **Enable dialog repositioning**—Toggles dialog control on and off. When it is checked, you can choose to have dialog boxes appear on the parent application's monitor (The parent application is the application that generated the dialog box.). If the parent application or associated monitor cannot be located, the dialog box defaults to monitor 1. You can also choose to have dialog boxes appear on the monitor in which the cursor is located or to always appear on a specific monitor in the array.



### **Window control:**

- **Single monitor windows**—When this box is checked, windows are sized no larger than a single monitor. Windows that are placed on monitor splits are automatically relocated to the monitor on which most of the window appears.
- **Appian Max/Restore**—Allows you to control the behavior of the Windows **Maximize** button. When HydraVision is running, an Appian icon appears in the upper right corner of your application title bars. Clicking this icon makes the active window maximize in one of two ways:
  - **Max to window corners** causes windows to maximize to the monitor(s) that contain the window's upper left and lower right corners.
  - **Max to full desktop** causes windows to maximize to the entire monitor array.
- **Max child windows**—Keeps windows generated by parent applications from splitting across monitors (A child window is a window residing within a parent application window.). The ability to keep child windows on a single monitor when maximized is extremely useful for editing multiple documents side by side in a parent application.

*NOTE: The Appian application title bar icon changes from a single square to two smaller squares when a window is in an Appian maximized state. Clicking the icon again restores the active window to its default state as a single square.*

### **General:**

- **Application position memory**—Check this box to “remember” the size and location of application windows when they are closed and reapply those settings when the application is reopened.

- **Automatically align monitors**—Under Windows, you can manually define monitor placement from the **Settings** dialog in the **Display Properties** dialog box. When this box is checked, HydraVision will override user-defined monitor placement if the monitors are not evenly aligned.

🔗 *NOTE: This control will work only if all monitors are running at the same resolution and your desktop is configured as a rectangle (monitors side by side).*

- **Enable individual application settings**—Check this box to specify desktop management settings for individual applications. You can access these settings by clicking on the down arrow of the Appian icon in the application title bar or by pressing the **Individual Application Settings** button in the **Desktop Management** dialog.
- **Remove Appian system tray icon**—This box removes or restores the Appian system tray icon.
- **Remove MultiDesk system tray icon**—This box removes or restores the MultiDesk system tray icon.

**Load/Unload Desktop Manager**—This button restores or removes the HydraVision Desktop Manager tracking program. Unloading the Desktop Manager returns display settings to Windows defaults. You should only select this option if you do not want to use any multiple monitor dialog box and window controls or hot keys.

🔗 *NOTE: **Unload** applies to your current Windows session only. When Windows restarts, the Desktop Manager will reload.*

**Load/Unload MultiDesk**—This button restores or removes multiple desktop functionality.

☞ **NOTE:** *Unload* applies to your current Windows session only. When Windows restarts, MultiDesk will reload.

**Individual Application Settings**—This button allows you to specify, enable and disable desktop management settings for individual applications.

☞ **NOTE:** *These settings override the global settings defined in the **Desktop Management** dialog.*

## Hot Keys Controls

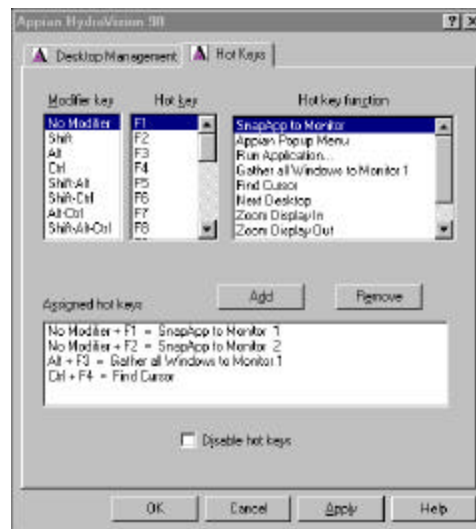


Figure 19. Hot Keys Dialog Example

HydraVision allows you to specify hot key shortcuts for common operations such as starting applications, snapping applications to designated monitors and changing display resolution.

### Create/Remove Hot Keys

To create custom hot key sequences, select a **Modifier key** (Shift, Alt, etc.), a **Hot key**, and the **Hot key function** you want this key combination to perform. Click **Add** to enter your new combination in the **Assigned hot keys** list box. Click **Apply** to activate assigned hot keys.

*NOTE: Appian recommends that a modifier key be used with any function key (F1, F2, etc.) assigned as a hot key. This will prevent interference with the function of these keys in individual applications.*

To delete a hot key from the **Assigned hot keys** list box, highlight it, click **Remove**, and then click **Apply**.

You can also disable all hot keys listed in the **Assigned hot keys** list box by checking the **Disable hot keys** box near the bottom of the **Hot Keys** dialog.

## Use Hot Keys

You can use any assigned hot key at any time, from within any application, to change your display.

Provided hot key functions include:

- Snap App to Monitor—Allows you to move or “snap” active windows or dialogs from monitor to monitor for quick placement and viewing of desktop contents.
- Appian Pop-up Menu—Allows on the fly access to HydraVision controls.
- Run Application—Lets you start any application with a hot key.
- Gather All Windows to Monitor 1—Allows you to find applications that are hidden or are open and lost on disabled monitors.
- Find Cursor—Locates the cursor on a busy or crowded desktop.
- Next Desktop—Accesses other active desktops.
- Zoom Display In/Out—Causes the desktop resolution to increase or decrease.
- Zoom In/Out on Monitor—Causes the resolution of the active monitor to increase or decrease.

## MultiDesk

---

Appian's HydraVision software supports multiple desktops. With MultiDesk, one active desktop will always be visible, while up to eight active desktops can reside in the background. When MultiDesk is running, the MultiDesk icon in the system tray displays the number assigned to the current desktop.

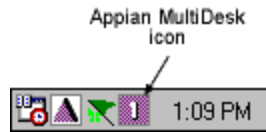


Figure 20. MultiDesk System Tray Icon

Right-click on this icon to access MultiDesk controls. In addition to accessing active desktops from the system tray, you can also access active desktops with a **Hot key** shortcut.

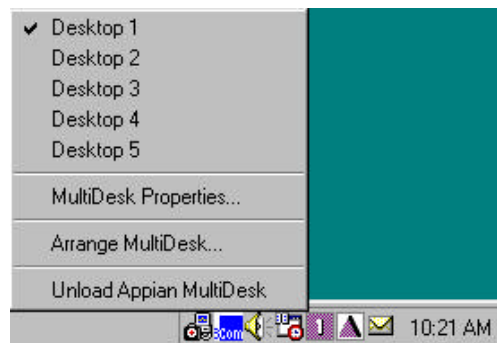


Figure 21. MultiDesk Pop-Up Menu

To switch to another defined desktop, select the appropriate desktop number from the pop-up menu. To enable, disable and name active desktops, select **MultiDesk Properties** from the pop-up menu. To arrange applications within active desktops, or to enable specific applications on all desktops, select **Arrange MultiDesk** from the pop-up menu.

The MultiDesk functionality can be removed by selecting **Unload Appian MultiDesk** from the pop-up menu.

*NOTE: This applies to your current Windows session only. When Windows restarts, MultiDesk will reload.*

## Chapter 5

# **Video Overlay and DVD Playback**

---

The AppianX graphics card provides video overlay display capability in Windows NT 4.0 and Windows 2000. With an on-board video decoder chip, AppianX lets you display incoming NTSC or PAL video directly to your monitors via a movable and resizable window.

Video can be displayed on the desktop using the Appian Video Application that ships with the AppianX card. In addition, the device driver provides a Video for Windows (VfW) interface. This allows you to use AppianX to display video overlay with other video applications that support VfW, such as Microsoft Media Player.

Appian also makes an external device, the Appian TV Tuner, which provides complete control for broadcast video when used with the AppianX card. The TV Tuner allows you to tune the broadcast video, auto scan channels and deliver stereo sound. The Appian TV Tuner is available separately.



## **Connect Video to AppianX**

---

The AppianX card provides support for display of incoming video through a 9-pin mini DIN connector.

Video input can be connected to a base band video source, such as a VCR or camcorder, or connected to a broadcast video source, such as a TV antenna or television cable, via the Appian TV Tuner.

Before the AppianX card will display live video, the Appian Video Application or other Video for Windows compatible software must be installed.

### **Video Cabling**

---

To display streaming video on your monitors with the Appian Video Application or other software, attach cabling from your video source to the 9-pin connector on the AppianX 4-port card. An Appian video adapter is provided for this purpose.

## Install the Appian Video Application

---

To install the Appian Video Application, perform the following steps:

*NOTE: The appropriate Windows NT 4.0 or Windows 2000 driver must be installed on your system prior to installing the Appian Video Application.*

1. Insert the AppianX installation CD-ROM into the appropriate drive.
2. Run the Appian Video Application Setup program by selecting **Run** from the Windows **Start** menu and selecting the path to the Appian Video Application **setup.exe** file (in the **AppianVideoApp** folder) using the **Browse** button.
3. Click **OK**. Follow the program prompts to complete the installation.
4. Restart your system.

## Use the Appian Video Application

---

After installation, the Appian Video Application can be accessed from the Windows **Start** menu under **Programs**.

The Appian Video Application displays incoming NTSC or PAL video within a window that can be resized and moved from one monitor to another or viewed across multiple monitors.

For video overlay without broadband tuning capability, controls are available to display and pause video. A number of secondary controls are available via the **Options** and **Configuration** drop-down menus. The Appian Video Application user interface also provides controls for use with the Appian TV Tuner, available separately.

## Keyboard Shortcuts

Key	Action
1	TV Tuner mode
2	Video mode
3	S-Video mode
Up Arrow/NumPad +	Channel Up
Down Arrow/NumPad -	Channel Down
V	Volume drop-down menu
ESC (while volume drop-down active)	Dismiss volume drop-down menu
Right mouse button	Toggle full-window mode
ESC (while in full-window mode)	Cancel full-window mode

*Table 1. Appian Video Application Keyboard Shortcuts*

⚡ **NOTE:** All standard menu and dialog shortcuts are available (tab, arrows, page-up, page-down, spacebar).

## Uninstall the Appian Video Application

To uninstall the Appian Video Application, use the Windows **Add/Remove Programs** utility, available from the Windows Control Panel.

## Chapter 6

# Technical Information

### Jumpers

This section describes the factory set jumper configuration on the AppianX card.

⊠ **WARNING! Do not modify the jumpers on your AppianX card. A change to the factory set jumper configuration could change the performance of the AppianX.**

- JP10 - 4 pin header, jumper across two middle pins
- JP1 - 3 pin header, jumper across two top pins (VGA - AGX#1)
- JP11 - 4 pin header, jumper across two middle pins
- JP2 - 3 pin header, jumper across two bottom pins (DISPLAY - AGX#2)

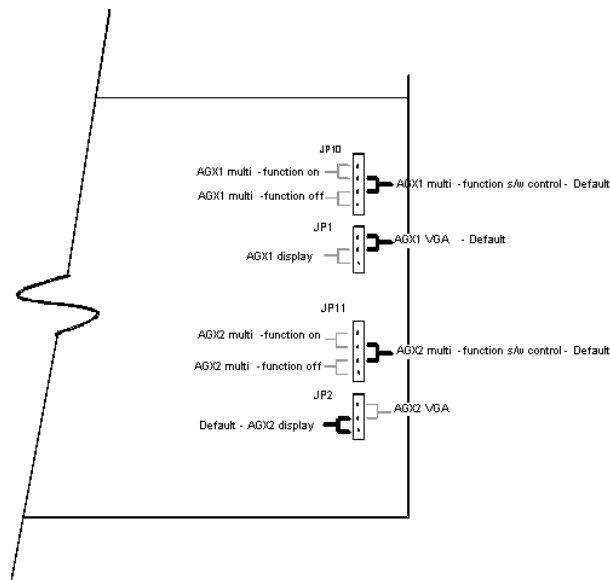


Figure 22. AppianX Jumper Configuration

## Mode Support

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The following tables provide information about the analog and digital resolutions, refresh rates and color depths supported by AppianX graphics cards. To display at a specific resolution with the desired refresh rate, both the graphics card and monitor must support your selection. Refer to the documentation that came with your monitor for a list of supported resolutions and refresh rates.

⊠ **WARNING! Be sure the refresh rates you select are compatible with your monitor. Incompatible refresh rate selection may result in monitor damage.**

Color bit depth →	32bpp	16bpp	8bpp
Resolution ↓	Max Refresh Rates (Hz)		
1920x1200*		60, 75	
1920x1080*	60	60, 75	
1600x1200	60	60, 75, 85	
1280x1024	60, 75, 85		
1024x768	60, 75, 85		
800x600	60, 75, 85		
640x480	60, 75, 85		
* Supported on two channels only			

Table 2. Supported Analog Resolutions and Refresh Rates

Resolution @ 32/16/8 bpp	Max Refresh Rate (Hz)
1280x1024 (see NOTE)	60
1024x768 (see NOTE)	60, 75
800x600	60, 75, 85
640x480	60, 75, 85

*Table 3. Supported Digital Resolutions and Refresh Rates*

⚠ NOTE: In some cases, only one of the following two possible DVI modes will be available in the Windows Display Properties dialog, even though your particular DVI panel may be capable of supporting both of these modes: 1024x768 @ 75Hz (8/16/32bpp) and 1280x1024 @ 60Hz (8/16/32bpp).

## **Monitor Cables and Connector Pinouts**

---

This section contains information about the connectors on your AppianX card, as well as information about the connectors on the DVI Y cable, analog cable and analog adapters.

### **LFH Connector Pinouts**

---

The 60-pin low force helix connectors on your AppianX card have an Appian Graphics proprietary pinout. If you have an application that requires knowledge of the pinout, please contact Appian Graphics Technical Support.

## Video Connector Pinouts

Figure 23 and Table 4 indicate pinouts for the video input connector on the AppianX 4-port graphics card. The pinouts are customized for use with the Appian video adapter or the Appian TV Tuner.

⊠ **WARNING! +12 volts exists on this connector.**

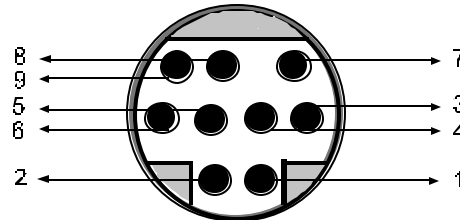


Figure 23. Video Connector Pinouts

Pin	Allocation
1	Ground
2	TV-In (Y)
3	Ground
4	SBCLK (I <sup>2</sup> C)
5	Ground
6	TV-In (C)
7	+12V (Fused)
8	Ground
9	SBDATA (I <sup>2</sup> C)

Table 4. Video Connector Description



## DVI Connector Pinouts

Figure 24 and Table 5 indicate pinouts for the standard DVI connectors on the DVI Y cable included with your AppianX card. Digital displays use this type of connector.

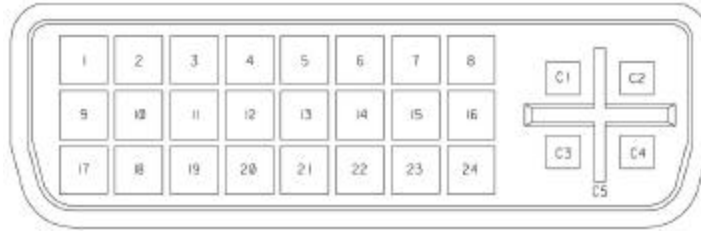


Figure 24. DVI Connector Pinouts

Pin	Allocation	Pin	Allocation
<b>High Speed Pins</b>			
C1	Analog Red Video Out	C4	Analog Horizontal Sync
C2	Analog Green Video Out	C5	Analog Ground Return
C3	Analog Blue Video Out		
<b>Main Pins</b>			
1	TMDS Data2-	13	TMDS Data3+
2	TMDS Data2+	14	+5V Power
3	TMDS Data2/4 Shield	15	Ground (Return for +5V Analog H/V Sync)
4	TMDS Data4-	16	Hot Plug Detect
5	TMDS Data4+	17	TMDS Data0-
6	DDC Clock	18	TMDS Data0+
7	DDC Data	19	TMDS Data0/5 Shield
8	Analog Vertical Sync	20	TMDS Data5-
9	TMDS Data1-	21	TMDS Data5+
10	TMDS Data1+	22	TMDS Clock Shield
11	TMDS Data1/3 Shield	23	TMDS Clock+
12	TMDS Data3-	24	TMDS Clock-

Table 5. DVI Connector Description

## DB-15 Connector Pinouts

Figure 25 and Table 6 indicate pinouts for the standard DB-15 connector on the analog adapters. Most analog monitors use this type of connector.

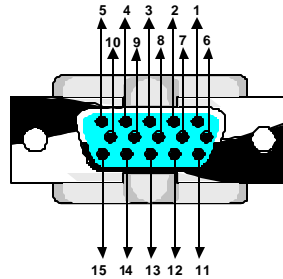


Figure 25. DB-15 Connector Pinouts

Pin	Allocation	Pin	Allocation
1	Red Video	8	Blue return (Ground)
2	Green Video	9	+5V DC (Fused)
3	Blue Video	10	Sync return (Ground)
4	Reserved	11	Reserved
5	Ground	12	SCL (DDC)
6	Red return (Ground)	13	Horizontal Sync
7	Green return (Ground)	14	Vertical Sync
	<b>Continued in next column ↗</b>	15	SDA (DDC)

Table 6. DB-15 Connector Pinouts

## Functional Specifications

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- Two Appian AGX1 graphics processors
  - Two 330MHz RAMDACs per processor
  - 128-bit memory bus per processor
- PCI-PCI bridge chip
- Conexant Fusion 878A video decoder chip
- 64MB 140 MHz SDRAM (32MB per graphics processor)
- PCI bus interface
  - PCI 2.1 and 2.2 compliant
- Four TMDS digital output transmitters
- DDWG/DVI-i compliant
- Driver support
  - Windows 2000 and Windows NT 4.0
  - DirectX
  - OpenGL
  - Video for Windows
- Two Molex 60-pin LFH connectors
- One 9-pin mini DIN video
- Dimensions are 8.75"L x 4.5"H
- Power consumption is 20 watts max.
- Microsoft PC99 compliant

## Chapter 7

# Troubleshooting

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If you have a problem with your AppianX card and don't find the solution in this User Guide, please contact Appian Technical Support at 800-422-7369 or [support@appian.com](mailto:support@appian.com).

You can also visit the technical support section of the Appian web site at [www.appian.com](http://www.appian.com) for the latest product support information, additional frequently asked questions and solutions to common installation and usage problems.

## Frequently Asked Questions

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### ***What if my system won't boot after installing the AppianX card?***

- Make sure the AppianX is properly seated in the PCI expansion slot.
- Verify the slot is functioning properly by installing the card in a different PCI expansion slot.
- Make sure all power cables are secure and properly connected.
- Check your power source and verify that the power is turned on.
- If you are using Windows NT 4.0:
  - Make sure other graphics cards have been removed from the system.
  - Make sure any on-board video is disabled.
  - Make sure you are using Service Pack 4 or later.

***What if the Windows operating system warns that the graphics card is not configured properly?***

- Check the driver installation and ensure that all software corresponds to the operating system and is correctly loaded.
- Reinstall the AppianX drivers.
- Make sure drivers and utilities from previously installed graphics cards are removed/uninstalled from the system.
  1. Select **Start|Settings|Control Panel**, double-click **Add/Remove Programs**.
  2. Remove any drivers and utilities listed for graphics cards no longer in the system.
- Check for address and interrupt conflicts to ensure the I/O and memory addresses reserved for the graphics card are not in use by other hardware devices.

***What if the Windows Device Manager shows a resource conflict between my AppianX card and another system component?***

Disable any display adapters listed in the Device Manager other than the AppianX card.

1. Right-click **My Computer**, select **Properties**.
2. Select the **Device Manager** tab.
3. Find **Display Adapters** and click on the plus sign (+) to the left.
4. Double-click the name of any display adapters listed other than the AppianX card.
5. Check the **Disable in this hardware profile** box.
6. Shut down and restart the computer.

***What if nothing displays on the monitor(s) connected to the AppianX card?***

- Be sure the AppianX card is properly seated in the PCI expansion slot and that cables are secure and properly connected.
- Make sure the monitor is receiving power.
- Check the pins on the monitor and cable connector(s) to ensure none are broken or bent.
- Make sure the Y-cables are plugged in and oriented correctly from the AppianX card to the display device cables. The 60-pin LFH connectors are polarized, but can be inserted upside down if forced.
- The brightness or contrast controls on your monitor may not be adjusted correctly. Check and readjust these controls.
- Make sure all monitors are enabled in the **Display Properties** dialog box.
- Make sure the refresh rate is set correctly for each monitor.
- Make sure the latest Appian display drivers are installed.
- If you have a fixed frequency monitor, please contact Appian Technical Support.

***What if defects appear in my display?***

- Make sure that both the graphics card and monitor(s) support the resolution and refresh rates you have selected. Refer to your monitor's documentation for recommended resolutions and refresh rates.
- Make sure the latest Appian display drivers are installed.

***Why do application boxes always appear on the primary monitor, when my application is on another monitor?***

In Windows 2000, most Microsoft Windows-compatible programs are multiple-monitor aware. However, many legacy applications are not. Some legacy applications will display their dialog boxes either split across two monitors, or only on the primary monitor, regardless of which monitor that application is running on.

In many cases, Appian HydraVision and HydraVision can solve this problem through dialog repositioning.

1. Right-click the **Appian icon** on your taskbar.
2. Select **Desktop Manager Configuration**.
3. Select the **Desktop Management** tab.
4. Check the **Enable dialog repositioning** check box and choose one of the options listed underneath.
5. Click **OK**.

***What resolutions are best for use with my flat panel display?***

Most flat panel displays are designed to work best at a resolution of 1024x768. Consult the manual for your display hardware to determine the resolution for which your flat panel was designed.

***Where can I find the most recent software and documentation for the AppianX card?***

The latest Appian drivers and display management software for the AppianX are available from the Appian FTP site at <ftp.appian.com>. Up-to-date documentation can be obtained from the Appian web site at [www.appian.com](http://www.appian.com).

## Uninstall AppianX Drivers and HydraVision Software

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If you need to reinstall the AppianX device drivers or HydraVision software for any reason, be sure to uninstall the driver and HydraVision files first. To uninstall the device drivers or HydraVision software, perform the following steps:

🔗 *NOTE: In Windows NT 4.0, you must be logged on as an administrator to successfully run the Appian uninstall utility.*

🔗 *NOTE: If you are using Windows 2000, the device driver and HydraVision software files must be removed separately, using the **Add/Remove Hardware** and **Add/Remove Programs** utilities, respectively.*

1. Right-click on the MultiDesk system tray icon to access the MultiDesk menu and select **Unload Appian MultiDesk**.
2. Right-click on the Appian system tray icon to access the HydraVision menu and select **Unload Desktop Manager**.
3. Select **Start | Settings | Control Panel | Add/Remove Programs** or **Add/Remove Hardware**.
4. Select the appropriate AppianX files.
5. Click the **Remove** button and follow any on-screen instructions.
6. When the uninstall process is complete, restart your system.



## Appendix A

# **Regulatory Information**

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### **FCC Compliance Statement**

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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 instruction 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 the user's own expense.

Changes or modifications to this device not expressly approved by Appian Graphics may void the user's authority to operate the equipment.

### **Industry Canada Compliance Statement**

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This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

# **CE Compliance Statement**

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## **Electromagnetic Compatibility**

The manufacturer hereby declares that this device conforms to the following standards in accordance with the European Commission Directive 89/336/EEC:

### **Emissions**

EN 55022:1998 (Class A)

EN 55022:1998 (Class B)

### **Immunity**

EN 61000-3-6 (Level B)

EN 61000-4-2 (Level B)

EN 61000-4-3 (Level A)

EN 61000-4-4 (Level B)

EN 61000-4-8 (Level B)



  
Jeff Dahlin, Responsible Party

## Appendix B

# Disclaimer

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Appian Graphics has made every effort to ensure the accuracy of this document. However, Appian Graphics makes no warranties with respect to this documentation and disclaims any implied warranties of merchantability, accuracy and fitness for a particular purpose. The information in this document is subject to change without notice. Appian Graphics Corp. assumes no responsibility for any errors that may appear in this document.

## High Risk Applications

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Appian Graphics Corporation does not sanction, authorize or certify any of its products for use in high-risk applications. Appian Graphics products are not fault-tolerant and are not designed, manufactured or intended for use or resale as on-line control equipment in hazardous environments requiring fail-safe performance, such as in the operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, direct life support machines, or weapons systems, in which the failure of the product(s) could lead directly to death, personal injury, or severe physical or environmental damage. Appian Graphics Corporation specifically disclaims any express or implied warranty of fitness for high-risk applications.