

PC-TV/RADIO CARDS

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Television has always been a popular medium for information, education, and entertainment. With the introduction of PC-TV/radio cards (Figure 50-1), you can receive your favorite local radio stations (played through your system's speakers), and television programs can now be presented on your monitor directly in a window—even while you work on a spreadsheet or in a word processor. Now that most urban and suburban areas are wired for cable service, a PC-TV card can display dozens of channels of clean, clear programming. Many PC-TV boards also provide a means of capturing still or moving images from any valid NTSC or PAL signal, so captures can take place from live television signals or from recorded sources such as VCRs. In addition, PC-TV boards can access Intercast broadcasting (mixing Internet Web content and live TV programming) and other interactive technologies. This chapter outlines the concepts of PC-TV/radio cards, explains their basic installation, and covers a host of troubleshooting procedures.

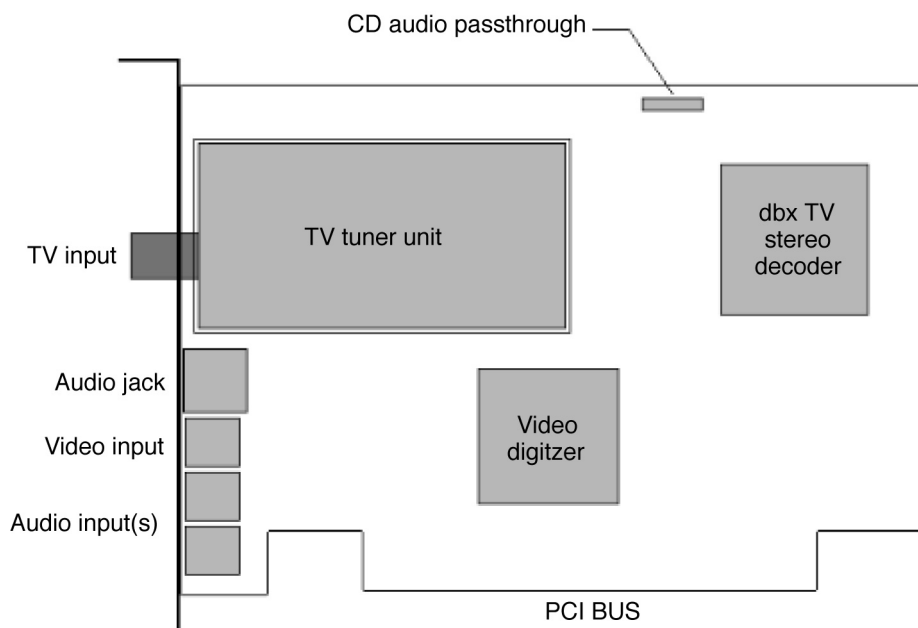


FIGURE 50-1 A typical PC-TV board

Understanding PC-TV Cards

The heart of the PC-TV card is a TV tuner. As with any ordinary TV, the tuner isolates particular channels from a cable or antenna signal source. A dbx TV-stereo decoder separates video and audio components of the channel. An audio jack provides sound from the tuned channel (and is ideal for headphones), while a CD audio pass-through connector allows the sound to be passed through to the sound card just like CD audio. At the same time, video data is digitized through a video digitizer chip and formatted to cross the PCI bus to your video adapter board. A set of auxiliary video and audio inputs allow the PC-TV board to play or capture signals from other video sources, such as VCRs.

DISPLAYING TV VIDEO IN A WINDOW

To display live video on your PC monitor, many current PC-TV boards (such as Hauppauge's WinCast/TV board) use a technique called "PCI Push." With this technique, the live video is digitized by the PC-TV board itself, and is then moved over the PCI bus directly into the memory of your video display adapter. The advantage of this process is a significant reduction in processing overhead—video data does not need to be stored in main RAM. Here are the basic steps involved in getting live TV onto your video screen:

- The TV tuner is controlled by software to tune to a specified TV channel (antenna or local cable). The tuner takes a modulated television broadcast signal and turns it into demodulated video and audio signals.
- The demodulated video from the TV tuner goes directly into the video digitizer, where it is converted into a digital form using YUV 4:2:2 sampling. This is a high-quality sampling scheme that results in resolution equivalent to 24 bits of RGB per video pixel (a "true color" video mode).

- The demodulated audio goes into an onboard audio switcher, which can receive audio from the TV tuner or the audio-in jack. The output of this audio switcher goes to both the audio-out jack and the CD audio pass-through connector for connection to a sound card.
- The video digitizer is also a PCI master mode device. After the video pixels are digitized, the video digitizer “pushes” them over the PCI bus into the memory of the PC’s video display adapter. It does this without requiring the processor to do any work.
- Using PC-TV software, the video adapter receives the TV information and displays the selected channel in a window.

DISPLAY MODES

Live TV can be displayed on your monitor using either *video overlay* or the *primary surface* mode. (The actual mode that is used depends upon the PC’s hardware and software.) If you have a video display adapter that supports Windows 95/98 DirectDraw (part of the DirectX feature), your video adapter has a “video port” that is designed to accept digital video, and your video adapter has enough display memory to hold the digitized video image, then the PC-TV board’s video digitizer moves YUV 4:2:2 video pixels for temporary storage into an off-screen part of the video memory called a “secondary surface.” This method is called video overlay. The video display adapter will then convert the video image from YUV 4:2:2 into RGB video and continuously overlay the display screen with the video image. Using video overlay, the video controller treats the live TV image just like any other window, which results in a 24-bit video image on your VGA screen. You will also see closed captioning on screen, and you can display full-screen TV at all video resolutions.



Video chips that support video overlay include the S3 Trio 64V+, S3 ViRGE 3D, Cirrus Logic 5446, ATI Rage II, and most current video chipsets.

If your VGA display adapter has a DirectDraw driver, but does not have either a video port or enough memory to hold the video image off screen, then the PC-TV board will likely convert the YUV 4:2:2 video pixels into an RGB format that is compatible with your video display adapter’s current operating mode (8 bits per pixel, 16 bits per pixel, or 24 bits per pixel). It then moves the pixels directly into the memory (or “primary surface”) of your video adapter. This results in a video image whose color depth is dependent upon your video adapter’s operating mode. For example, the TV image will not be as good when running in an 8-bit per pixel mode as when running your video system in 16-bit per pixel mode. Also, since the video is moved directly onto the primary surface, features such as close captioning and full-screen TV (in resolutions greater than 640x480) will be disabled.



Video chips that support primary surface mode include the S3 Trio 64, S3 Vision 968, Matrox Millenium, Matrox Mystique, Tseng ET6000, and most current video chipsets.

TV STANDARDS

When selecting a PC-TV device for your computer, it’s important that you select a model that is compatible with the television format used in your part of the world. The three major standards are NTSC, PAL, and SECAM (though there are slight variations depending on your particular country).

- NTSC: North America, Taiwan, Japan, South Korea
- PAL-BG: Majority of European countries

- PAL-I: England, Ireland, South Africa, Hong Kong, Australia, New Zealand
- PAL-DK: Mainland China, North Korea
- PAL-M: Brazil
- PAL-N: Majority of South American countries
- SECAM-LL: France
- SECAM-DK: East European and former USSR countries
- SECAM-BG: Saudi Arabia and Middle East countries



In most cases, PAL-M and PAL-N devices will use the same tuner module, and all three SECAM standards will use the same tuner module.

Advanced PC-TV Technologies

In addition to simply displaying a video image on your monitor, multimedia and “information content” developers have been hard at work designing new technologies that can transmit special programming to your TV tuner. The bandwidth for this special programming is found in the vertical blanking interval (or VBI) of an ordinary television signal. By adding computer-based data in the VBI, broadcasters are supporting several new information technologies such as WaveTop, WebTV, and InterCast. This part of the chapter briefly examines each of these technologies.

WAVETOP

WaveTop is relatively new technology from Microsoft that allows you to use the TV to download special Internet content free of charge without tying up your phone lines. WaveTop works by putting Internet data into the VBI of your TV signal. For example, you can get up-to-the-minute sports, stock news, weather, and other information. WaveTop has partnered with PBS to broadcast data over the television signals of its 2000+ PBS member stations (so this system reaches more than 99 percent of all households in the United States with a TV). Given this method of distribution, you will not be able to receive WaveTop if you don't receive a PBS channel in your area, and WaveTop will not work in other countries. Also, WaveTop is designed for receiving specific content that you select, so you cannot do general Internet browsing.

PC-TV tuners that support the WaveTop Tuner Arbitration Protocol require you to turn WaveTop off in order to receive regular TV. This is necessary because you can't have two separate applications trying to run the TV card at the same time. When you stop the TV viewer, WaveTop will start automatically within two minutes. WaveTop can use either of the Microsoft video standards: Video for Windows (VFW) or the new Windows 98 (WDM) system.

If you have Windows 98, the WaveTop software is already installed. If you have Windows 95, you can download the WaveTop software from Microsoft's Web site or request their free CD. If you're purchasing a WaveTop-compliant PC-TV card (such as the WaveWatcher Net-TV 98), the WaveTop software will be included on the installation CD. You can learn more about WaveTop by visiting the WaveTop page at www.wavetop.net.

WEBTV FOR WINDOWS

Windows 98 includes Microsoft's WebTV for Windows—a feature that combines broadcast and Internet-based content intended to deliver a wide assortment of entertainment products. If you have an Internet connection, you can receive and view searchable television program listings. The Program Guide

continuously lists scheduled television shows and allows you to instantly tune in to shows on your computer. With a PC-TV tuner card installed, your computer can receive and display television distributed over normal broadcast networks and cable systems. You can also receive Internet content or other broadcast data without tying up your phone line (similar to WaveTop). You can visit the WebTV site at www.webtv.com/home/index.html.



If you're upgrading to Windows 98 and already have an All-In-Wonder or All-In-Wonder Pro display adapter from ATI Technologies installed in the system, the drivers for your PC-TV tuner card might be unable to support television broadcast viewing. You can generally correct this problem by updating the drivers for your display adapter.



The Windows 98 WDM driver is dependent on video cards that support the video overlay mode of operation. If your video card does not support overlay, WebTV may not work on your system until the video adapter is upgraded to a compatible model.

Use the following steps to install WebTV for Windows:

- 1 Click Start, highlight Settings, click Control Panel, and then double-click the Add/Remove Programs icon.
- 2 On the Windows Setup tab, click the WebTV For Windows check box to select it, and then click OK.
- 3 Insert your Windows 98 CD if you're prompted for it.
- 4 Restart Windows 98 when you're prompted to do so.

Once WebTV for Windows is installed and running on your system, you can use the keyboard shortcuts in Table 50-1 to browse and control your viewing.

INTERCAST

Intel InterCast technology is now a largely established feature for television broadcasts that merges television broadcasts with the Internet's World Wide Web (WWW, or simply "the Web"). With Intel InterCast technology, broadcasters can combine the television signal with Web data that includes information such as details about the current broadcast, links to other Web pages, or advertising. With a PC that has a PC-TV board (such as the WinCast/TV board), a Pentium processor, and the Intel InterCast viewer software, you can

- Watch television
- View Web pages received over the airwaves
- Connect to the Internet
- Capture video images
- Track mutual funds or stocks

With the viewer, you can get more information on programs as you're watching them, or "surf" to other related Web information available through the InterCast.

As with the other similar technologies, InterCast content is transmitted by a TV broadcaster in the vertical blanking interval (the common part of the ordinary TV signal). The VBI can contain up to ten lines of InterCast content, plus one line of closed captioning data. The data consists of a series of 1's and 0's, and

TABLE 50-1 KEYBOARD SHORTCUTS FOR WEBTV FOR WINDOWS

KEY(S)	FUNCTION
F10	Display the WebTV menu
F6	Switch between a full screen or a window
0 through 9	Change channels
<Windows logo> key	Windows 98 Start menu
<Windows logo>+CTRL+SHIFT+Z	Program Guide (grid view)
<Windows logo>+CTRL+Z	Start WebTV or switch between a full screen or window
<Windows logo>+CTRL+V	Turn volume up
<Windows logo>+SHIFT+V	Turn volume down
<Windows logo>+V	Turn mute on or off
<Windows logo>+CTRL+ALT+Z	Increase the TV channel by one
<Windows logo>+CTRL+ALT+SHIFT+Z	Decrease the TV channel by one
<Windows logo>+CTRL+ALT+SHIFT+F	Left arrow
<Windows logo>+CTRL+ALT+SHIFT+P	Up arrow
<Windows logo>+CTRL+ALT+F	Right arrow
<Windows logo>+CTRL+ALT+SHIFT+G	Recall
<Windows logo>+CTRL+ALT+P	Down arrow
<Windows logo>+CTRL+ALT+G	Pause
PAGE UP	Increase the TV channel by one
PAGE DOWN	Decrease the TV channel by one

would show up on your TV screen (if you could see it) as a series of black and white dots on each line in the VBI. The PC-TV board digitizes the video lines in the VBI that are used for InterCast Web pages. (The Hauppauge WinCast/TV board uses 5x oversampling to digitize the video.)

Since each line in the VBI has 35 bytes of data, there are 1400 samples per line. This digitizing is very similar to the digitizing used for TV video, but instead of using the PCI bus to move digitized video into VGA display memory, the PC-TV board moves the digitized lines from the VBI into main system memory. Once in system RAM, your processor can take the digitized line and extract the InterCast content. The method of extracting the 35 bytes of InterCast content in each VBI line uses such techniques as noise reduction and echo cancellation to extract valid InterCast content (even when given a noisy TV signal). Intel's InterCast viewer then displays the data in the InterCast viewer window. Since InterCast works under Windows 98 WebTV for Windows, you can use the following steps to install InterCast once WebTV is installed:

- 1** Insert the Windows 98 or Windows 98/SE CD into the CD-ROM or DVD-ROM drive, and then click Browse This CD.
- 2** Double-click the Drivers folder, double-click the Webtv folder, and then double-click the InterCast folder.
- 3** Double-click the IIT22020.EXE file, and then follow the instructions on your screen to complete the InterCast setup process.
- 4** Click Yes when you're prompted to restart your computer.

Installing a PC-TV/Radio Card

PC-TV devices are typically PnP devices that are designed for automatic detection and resource assignments. Still, most PC-TV problems *start* when the card is first installed in the system—usually due to inadequate or incorrect installation of the hardware and software. This part of the chapter offers an overview of the installation process so that you can check for missing steps.



Always use proper static precautions (such as an antistatic wrist strap) when working inside a system with sensitive devices, such as the PC-TV card.

HARDWARE INSTALLATION

Following are the basic steps for installing a generic PC-TV card:

- 1 Shut down Windows 98/SE, and then turn off and unplug the computer.
 - 2 Unbolt the outer case, and then remove the housing and set it (and the screws) aside in a safe place.
 - 3 Remove the old video card (if necessary). If your PC-TV card integrates the features of a video adapter and/or graphics accelerator, you may need to disconnect your monitor and remove the existing video adapter from the system first. If the video adapter is integrated onto the motherboard, you'll need to disable the video adapter through a jumper or the system's CMOS setup. If the PC-TV card will exist alongside the current video adapter, you can skip this step.
 - 4 Locate a slot for the PC-TV card. Many PC-TV card devices will require a PCI slot, though most "integrated" PC-TV cards (including the video adapter, MPEG-2 decoder, etc.) will need an AGP slot. Find an available slot that's appropriate for your PC-TV card. Remove the cover of the slot you intend to use (if it's not already removed), and save the screw for the mounting bracket.
 - 5 Insert the PC-TV card. Push the card in firmly and evenly until it's fully seated in the slot. Replace the screw to secure the bracket of your PC-TV card to the computer's chassis.
 - 6 Make your signal connections. You'll need to connect your external devices to the PC-TV card. Here are just a few of the connections you may need to make. (Your PC-TV card may have more or fewer connections depending on its particular features.)
- *Monitor* If your PC-TV card is taking the place of your video adapter, double-check that the monitor cable is also secure at the monitor end.
 - *TV input* This is where you'd attach the 75Ω TV antenna or cable signal to the PC-TV card.
 - *FM input* If your PC-TV card integrates an FM radio receiver, this is where you'd attach the standard 300Ω FM antenna for good long-distance reception of your favorite radio station(s).
 - *Video input* This is an auxiliary video input (usually through an S-video or RCA jack) that allows you to play videotapes from a VCR, video camera signals, or video signals other than ordinary TV.
 - *Audio line output (LineOut)* Of course you'll want to hear TV audio through your system speakers, so connect this output to your sound card's "LineIn" connection. Your PC-TV card package will usually provide a short patch cable for this purpose.
 - *Audio line input (LineIn)* If you're using the auxiliary video input from a VCR or video camera, you can connect that auxiliary audio signal to this input jack.
 - *TV output* If your PC-TV card provides an output that will drive an external TV, you can connect the remote TV to this jack. Remember that if your remote TV has a "TV/video" switch, be sure that it's set

to the “video” position. Similarly, you can attach this output to a VCR, but you’ll need to set the VCR’s “tuner/line” switch to the “line” position.



The ability to handle TV input and output signals often allows you to record TV shows or prerecorded videotapes through your PC-TV device. Keep in mind that the unauthorized recording or use of broadcast television programming, videotape, or other copyrighted material may violate copyright laws. In most cases, you cannot record from a copy-protected video source.

SOFTWARE INSTALLATION

Now that the physical hardware for your PC-TV card has been installed, it’s time to install the PC-TV drivers and application software that you’ll need to identify the device under Windows 98/SE and view/record your TV signals. Leave the computer’s housing off for now, but reconnect the AC cord to the computer, and prepare to start the system again.



Always refer to the README file on the PC-TV card’s driver disc to obtain the very latest feature descriptions and software installation guidelines for your particular card.

- 1 Reboot the computer. Turn on your computer and allow Windows 98 to boot normally. In virtually all cases, Windows 98 will detect the PC-TV card automatically at start time. Windows usually reports finding a “PCI adapter” (even if you’re using an AGP card).
- 2 Install the display drivers (if necessary). If your PC-TV card is now serving as the video adapter, you should install the display drivers now, then reconfigure the Display settings for a suitable resolution and color depth.
- 3 Install the PC-TV drivers. After the computer restarts, you should insert the driver/software CD in the drive. Chances are that an AUTORUN.INF file will launch the driver installation automatically. Follow the on-screen instructions to install the PC-TV driver files, and then restart your computer so that your changes can take effect. This will probably add one or more entries for your PC-TV card to the “Sound, video, and game controllers” portion of your Device Manager. Leave the CD in the drive.
- 4 Expect system tests. Once you reboot the system, there may be one or more performance tests that will evaluate the performance of your hard drive and system—any results will generally be used to limit your video capture settings. You may need to reboot the system again.
- 5 Test your setup. Now it’s time to see that your hardware is working properly. If your installation CD offers a diagnostic mode, check to see that all of your connections are secure, and verify that the PC-TV card hardware is responding. You may need to reboot the computer before proceeding.
- 6 Install the applications. One of the final steps is to install the related application software that supports your PC-TV card (such as “channel preview” or “video capture”). Select each utility that you want to install, and then follow the on-screen instructions to load and test each utility.

Troubleshooting a PC-TV/Radio Card

Although most PC-TV cards will install quickly and easily, there are also many situations in which they will not run properly or respond as expected. This part of the chapter highlights many of the most important troubleshooting procedures that you can use to correct PC-TV problems.

GENERAL PC-TV PROBLEMS

- Some non-Intel PCI controller motherboard chipsets will not allow your PC-TV card to bus master the video to a video adapter, and therefore will cause a system lockup. Virtually all motherboards that use Intel PCI bus controllers will work properly with PC-TV cards. Chipsets known to cause lockups are from the older SiS, VIA, UMC, ALi, and some OPTI families. In most cases, the respective motherboard maker will have a fix or a BIOS update that can address the problem.
- Bus mastering compatibility can be very sensitive to PCI revisions. If you're using a PCI-based PC-TV card, verify that the motherboard chipset is compliant with PCI 2.1 specifications or later.
- PC-TV problems are common with incompatible video adapters such as the S3 964, S3 864, Trident, and Cirrus Logic families. The S3 Trio 64 V+, S3 Vision 868, and S3 Vision 968 are also known to cause PC-TV compatibility problems.
- Video adapters that are not able to share their IRQ with any other device on the system (such as the STB Velocity 4400 based on the Nvidia TNT chipsets) may also cause trouble with PC-TV cards. To fix problems with such video adapters, the video card or the PC-TV card must be moved to a different IRQ setting.
- DirectX should be enabled, and you should be using the latest version of DirectX on your system. You can download the latest DirectX version from Microsoft at www.microsoft.com.
- You should use a color depth higher than 256 colors. Images displayed with 256 colors are often “washed out,” and some PC-TV cards will not even support video in the 256 color mode.
- Be careful of older capture drivers. If there was a different video capture card in the system, there may be drivers or system files related to this device that will cause conflicts with the PC-TV card (and possibly lock up the system). These older drivers will need to be removed.

BLACK TV WINDOW PROBLEMS

- Your video card must have at least 2MB of video memory. If you have only 2MB of video memory, you may need to use the 640x480 screen resolution in 16-bit high color mode. You can adjust this through the Settings tab in your Display icon in the Control Panel.
- Reduce your “hardware acceleration.” Select the Performance tab in the Device Manager and click Graphics. Make sure that the Hardware Acceleration slider is set to “Full.” If you still see a black screen—even though the Hardware Acceleration is set to Full—bump down the Hardware Acceleration a notch, click on Apply, then OK, and reboot. Try lowering the acceleration even more if the problem persists.
- Turn off the Plug-and-Play option in your system BIOS. This will force Windows to assign resources differently, and that sometimes resolves black screen problems. PnP settings are adjusted in the system's CMOS setup routine.
- In the PC-TV card's program group, there may be a utility called “Primary.” Set it to “Allow Overlay.” If it is on Allow Overlay, try setting it to “Force Primary.” (Your own card may incorporate this selection into the TV viewing application.)
- Check your drivers. Make sure you're using the latest drivers for your video card and PC-TV card directly from their respective manufacturers. If you have a later version of DirectX installed, this may be a problem if the video card manufacturer does not have updated drivers to support the later version. If you do upgrade the drivers, make sure the color depth is not reset to 256 colors by default.

- You may need to reinstall DirectX. This can often be done from the PC-TV card's driver CD. For example, on the CD there may be a folder called "DirectX," which contains a utility called DXSETUP. Execute this program and select "Re-Install DirectX." You may prefer to download and install the latest version of DirectX from Microsoft.
- Try changing the video card refresh rate to "Adapter Default." This will sometimes correct graphics problems. You may also want to try it on the "Optimal" setting. Refresh rates can be accessed by opening the Display icon, selecting the Settings tab, clicking the Advanced button, and then selecting the Adapter tab.
- DirectX may be detecting a previous video card. Boot the system in Safe Mode, go to the Device Manager, and click the plus (+) sign next to Display Adapters. If there are any video cards listed here that you're not currently using, you should remove them. You may then try reinstalling DirectX.
- Try changing the memory address for the PC-TV card to a higher memory range. Go to the Device Manager, expand the "Sound, video, and game controllers" entry, and then examine the PC-TV card's properties under the Resources tab. Highlight the memory range and uncheck Use Automatic Settings, and then click Change Setting. Try setting a new memory address (such as 78000000-78000FFF if it doesn't conflict with anything else). Click OK, and click OK again. You'll get a warning message about changing the address manually, but click Yes and reboot Windows.

INSTALLATION AND PERFORMANCE SYMPTOMS

SYMPTOM 50-1 **The system doesn't boot after the PC-TV card is installed** This may occur for a number of different reasons and is almost always traced to errors in the card's installation process. Your PC-TV card may not be properly installed. Double-check your physical installation and make sure that your PC-TV card is properly installed. For example, the card should be firmly inserted in its expansion slot, and all connections attached to it should be firmly in place.

There may be an unsupported graphics adapter in your computer. If another graphics card is plugged into an expansion slot, you should remove it. If a graphics adapter is built into your computer motherboard, your system may not have automatically disabled it when you inserted your PC-TV card (if the PC-TV card takes over your basic video adapter functions). Disable your computer's built-in graphics adapter (if necessary).

Your system's BIOS may not be up-to-date. Reinstall your previous graphics card (if necessary), and update your computer BIOS as required. The BIOS (firmware) of your PC-TV card may also need to be updated or replaced. Check with the PC-TV card's manufacturer and see if there is a "flash" upgrade available for the card's firmware. Otherwise, you may need to replace the firmware chip or return the PC-TV card for rework.

SYMPTOM 50-2 **You notice an incorrect color balance, an off-center screen image, or no picture at all** In virtually all cases, this symptom represents a broader problem with the monitor (rather than the PC-TV card itself). For example, your monitor's video controls may be improperly set. Adjust your monitor's controls (brightness, contrast, etc.) to see if you can correct the overall screen display. Also check the monitor connections at the video adapter. Also check the display settings for your monitor in the Display icon under your Control Panel.

If your monitor uses a BNC input, one or more connection settings may be incorrect. Set each of your monitor's RGB input and sync switches (if available) to 75 ohms, with the sync set to "external." These controls are usually switches on the back of your monitor, or are set using the monitor's on-screen controls.

SYMPTOM 50-3 The screen image is garbled or unusable after adjusting your Display settings (usually the refresh or resolution settings) For example, you'll see a garbled image with rolling and overlapping screen images. In virtually every case, the video display driver is using settings that the monitor doesn't support. Reboot Windows to the Safe Mode, and then adjust the Display settings so that they are within the monitor's operating limits. Also make sure that the correct monitor is defined in the Display icon.



Do not allow a monitor to operate in this fashion for any length of time. Driving a monitor beyond its capabilities will generally result in damage to the monitor itself.

If the trouble has occurred *after* you've replaced your video adapter (perhaps replacing it with your PC-TV card), the old drivers may still be operating the video system. Reboot the computer to the Safe Mode, locate the old video adapter in the Device Manager, and remove the entry. You may then need to install (or reinstall) the video drivers for the PC-TV card.

SYMPTOM 50-4 You get an error indicating that a DLL file cannot be found when trying to run the PC-TV application. This problem frequently arises with Diamond Multimedia DTV devices and Stealth 64 drivers. This error usually means that the Diamond Stealth 64 drivers aren't installed properly, or the wrong drivers are installed. Make sure you're using the newest drivers available from the video board manufacturer. You can tell which driver is loaded by looking in the Device Manager in Windows 95/98. You can update the video driver through the Add New Hardware wizard, or remove the existing video device through the Device Manager, and let Windows 95/98 redetect and reinstall it.

SYMPTOM 50-5 You get no picture in the PC-TV remote video window This generally happens when one or more cable connections are loose or incorrect. Make sure that all of your computer connections are firmly attached. Also verify that the PC-TV remote input settings are correct. You may also find that the PC-TV remote video tuner settings are set too low. Reset the video tuner settings to default values, and try the PC-TV card again.

SYMPTOM 50-6 The mouse pointer flickers or disappears when it's over a video window In most cases, you may be using a "customized" mouse pointer. Windows draws customized mouse pointers in a way that may cause them to flicker or disappear while they're over a video window. Use the default Windows mouse pointers:

- 1 Open your Control Panel and double-click the Mouse icon.
- 2 Select the Pointers tab.
- 3 In the Scheme box, select None, and click OK.

SYMPTOM 50-7 The PC-TV software reports that it cannot detect the TV tuner Also, there may be no TV in a video window when the "TV" input is selected. Before you go too far with this problem, verify that the PC-TV card has been installed properly, and verify that the card does include a TV tuner. (Some multifunction cards may not include a TV tuner; they require a separate module to be installed.) The video signal coming from your antenna or cable TV may have problems. To test the signal, temporarily connect it directly to a TV. If the signal works properly with your TV, it should work for your PC-TV tuner. Make sure that your antenna or cable TV connection is secure. If you're using an antenna, try adjusting it (check all the connections to it), or use a different antenna.

SYMPTOM 50-8 **You get mouse lockups with an Nvidia-based video card** This is a common problem with some Dell XPS and Gateway systems. Check to see what IRQs are in use by your video adapter and PC-TV card. It's more than likely that the video adapter is sharing the same IRQ with your PC-TV card. If it is, you'll need to reassign the IRQ to your video adapter or PC-TV card. You may also wish to reserve the IRQ used by the PC-TV card through the CMOS setup.

SYMPTOM 50-9 **The TV output on your PC-TV card might not work properly under Windows 98** After you connect a television to your PC-TV card with a TV output, the TV output may not work properly (or may be missing from the Display Properties dialog box). This problem can occur if you're using a Windows 95 video adapter driver or an inappropriate Windows 98 driver. To support the TV output on a PC-TV card, install the appropriate Windows 98 driver:

- 1 Click Start, highlight Settings, and then click Control Panel.
- 2 Double-click Display, click the Settings tab, and then click Advanced.
- 3 On the Adapter tab, click Change.
- 4 Click Next, click "Display a list of all the drivers in a specific location so you can select the driver you want," and then click Next.
- 5 Click Show All Hardware.
- 6 In the Manufacturers box, click ATI Technologies.
- 7 In the Models box, click the appropriate device, and then click Next.
- 8 Click Next, then Finish.

SYMPTOM 50-10 **You notice that fonts get corrupted or scrambled when your PC-TV card software is running** This is generally seen with incompatible video cards (for example, Trident and some Cirrus Logic) and may also be caused by compatible cards whose drivers (or DirectX version) need updating. There may be a shortage of video memory. At least 2MB is needed to run most basic PC-TV cards, and 4MB or more is often recommended. If you have a video card based on the S3 Virge chipset, try reducing your Hardware Acceleration:

- 1 Click Start, highlight Settings, and select Control Panel.
- 2 Double-click the System icon and click the Performance tab.
- 3 Click the Graphics button and reduce the Hardware Acceleration slider.
- 4 Apply your changes and reboot the system if necessary.
- 5 If the problem persists, try reducing the Hardware Acceleration a bit more.

SYMPTOM 50-11 **You encounter a "Bad or missing subvendor ID" when running your PC-TV software** This error indicates a problem with the subvendor ID number on the PC-TV board. Check with the PC-TV card manufacturer for a driver/firmware patch or update that can correct this problem. After running a patch file, you'll need to restart the computer and reinstall the PC-TV drivers and application software.

SYMPTOM 50-12 **You encounter a "Runtime error 28 – out of stack space" error when you try to initialize the PC-TV card** This problem can occur under Windows 98 when you're running a custom Windows font size. Change the font size back to normal/default font size, or turn off aspect

ratio in your PC-TV software (for example, for a WinTV card, edit the PCVIDEO.INI file and set AspectRatio=1 to AspectRatio=0).

SYMPTOM 50-13 You encounter a “Runtime error 53 – file not found” error when you try to initialize the PC-TV card This error generally indicates that the drivers did not install correctly. Be sure that the latest available PC-TV driver and application software are installed. It may also be necessary to first completely uninstall the PC-TV software before reinstalling it.

SYMPTOM 50-14 You receive a “Connect pins by name failed” or “preview graph” error when attempting to start your PC-TV software The WDM drivers under Windows 98 will cause this symptom if the video card does not support the overlay mode, or if the video card is running a very high resolution, color depth, or refresh rate. By turning off the Allow Overlay feature, the video card is forced to run in primary mode. If it will not work properly in the overlay mode, you would probably be better off running the VFW drivers. For example, to turn off the Allow Overlay feature for a Hauppauge PC-TV card, open the registry editor and go to HKEY_LOCAL_MACHINE\Software\Hauppauge\Hcwtvwnd; then set the Allow Overlay key to 0. Close the registry, reboot the system, and try the PC-TV again.

SYMPTOM 50-15 You cannot use the “full-screen” mode You’ll generally wind up with a black border around the TV picture in this mode. In most cases, a PC-TV card will display a maximum image size of 640x480 in any resolution. If your video card supports the overlay mode, you should be able to see the full screen in resolutions up to 1024x768. If your video card does not support the overlay mode, this would be a hardware limitation of that video chipset. In this case, running in a higher resolution than 640x480 will not allow a true full-screen TV picture. Set the TV mode size to 640x480 (800x600 for the PAL video format). This will default the video display to 640x480 resolution when going to full-screen mode—allowing a true full-screen TV image.

SYMPTOM 50-16 The screen becomes distorted when moving or changing an STB TV window under Windows 98 If you’re using an STB TV PCI adapter, you may experience the following symptoms:

- If you move or resize the STB TV window, your display becomes distorted.
- If you try to change the STB TV window to full-screen mode, you’re unable to expand the window larger than 640x480 pixels—the remaining portion of the screen turns bright pink. If you restore the window to its original size, your screen also becomes distorted.

This fault can occur if you’re using a Riva 128-based video adapter with Windows 98 drivers. To resolve this problem, obtain the latest Windows 98 drivers for your Riva 128-based video adapter from the manufacturer. To work around this behavior, refresh the desktop:

- 1 Click the Minimize button.
- 2 Click a blank area of the desktop, and then press F5 to refresh the desktop.
- 3 Click each desktop icon to refresh it.
- 4 Right-click “STB TV” on the task bar, and then click Restore.

Or use the Windows 95 drivers for your video adapter:

- 1 Click Start, highlight Settings, and then click Control Panel.

- 2 Double-click Display, click the Settings tab, and then click Advanced.
- 3 On the Adapter tab, click Change, click Next, click “Display a list of all the drivers in a specific location, so you can select the driver you want,” and then click Next.
- 4 Click Have Disk, click Browse, navigate to the folder containing the Windows 95 drivers, and then click OK.
- 5 Click Next, click Finish, click Apply, and then click Close.
- 6 Click Yes when you’re prompted to restart your computer.



The STB Velocity 128 and Diamond Viper 330 (Riva 128-based) video adapters are known to exhibit the behavior described in Symptom 50-16.

SYMPTOM 50-17 **There are problems with a Toshiba Infinia DVD/TV tuner under Windows 98** After you upgrade your Toshiba Infinia laptop computer to Windows 98, a yellow exclamation point may be displayed next to the “DVD/TV Tuner” device in Device Manager, and your DVD/TV Tuner device may not work correctly (or at all). This trouble can occur if your computer is configured to use the Toshiba TV/FM version 2.13B2 device driver, which is not totally compatible with Windows 98. To resolve this issue, contact Toshiba to investigate a possible fix for this issue.

SYMPTOM 50-18 **Your PC-TV software causes the monitor to go blank for a few moments when switching from “windowed” to “full-screen” TV** This is a known issue with STB PC-TV cards running v.2.13 drivers under Windows 95/98. The screen is blanking because the screen resolution is being changed. Select the STB PC-TV card software, click on Menu, select the About tab, and then click on In Case Of Difficulty. Uncheck the box next to “Do not resize the screen for Full Screen mode,” and then click Close. When the STB PC-TV software is restarted, this change will be in effect, and the screen should not “blank.”

SYMPTOM 50-19 **When you move or resize a TV window, you find remnants of the video picture on the display** You may also notice that the mouse pointer is distorted or corrupted. This is almost always the result of an incompatibility between the video drivers and DirectX. First try running the video system in 16-bit (high color) mode. Then try downloading and installing the very latest version of DirectX from Microsoft. You may also check with the video card maker for the latest DirectX-compliant video drivers.

SYMPTOM 50-20 **The PC hangs when using a Hauppauge Win/TV card under Windows 98** If your computer has a Hauppauge Win/TV card installed, your computer may hang up with an “Unrecoverable page fault” error when you start Windows 98. This fault can occur if an older S3 video adapter driver is installed on your computer. Some older versions of the drivers used with S3-based chipsets have compatibility problems with the drivers for Win/TV hardware. To fix this problem, install the Windows 98 S3 drivers (or the most current drivers provided by the display adapter’s manufacturer):

- 1 Restart your computer. Press and hold the CTRL key until the Windows 98 Startup menu appears, and then select the Safe Mode.
- 2 Click Start, highlight Settings, and then click Control Panel.
- 3 Double-click Display, click the Settings tab, and then click OK.
- 4 Restart the computer normally.

- 5 Click Start, highlight Settings, and then click Control Panel.
- 6 Double-click Display, click the Settings tab, and then click Advanced.
- 7 Click the Adapter tab, and then click Change.
- 8 Click Next, click “Display a list of all the drivers in a specific location, so you can select the driver you want,” and then click Next.
- 9 Click Show All Devices.
- 10 In the Manufacturers box, click S3.
- 11 In the Models box, click the appropriate model, click OK, and then click Next.
- 12 Click Next, click Next, and then click Finish.
- 13 Click Close, click Close again, and then click Yes to restart your computer.



If these steps do not correct the problem, contact the display adapter’s manufacturer to obtain an updated Windows 98 driver.

SYMPTOM 50-21 You get an error such as “The following entry should be in your system.ini file: [drivers] Msvideo=stlthcap.driv” You are then asked to press OK to add, or press Cancel to exit. This error suggests that the capture driver associated with your PC-TV card was not installed in the SYSTEM.INI file. All you need to do is click OK to have the software add it for you. The driver might have been replaced if you’ve had another capture driver (from a different video capture board) installed recently. Click OK to reinstall the current PC-TV software.

SYMPTOM 50-22 You see an error “No suitable DirectDraw provider” PC-TV boards (such as WinCast/TV) typically require a Windows 95/98 DirectDraw driver for your PC’s video accelerator to provide “TV-in-a-window,” or to extract Intericast content from the TV signal. The error message appears when the PC-TV application(s) cannot find the DirectDraw driver. You’ll need to install a DirectDraw driver for your particular video board, or upgrade the DirectDraw video driver. Check with the video board manufacturer for updated video drivers with DirectDraw support. In most cases, you should simply upgrade to the latest version of DirectX, which can be downloaded from Microsoft.



If your video adapter was sold before Windows 95 was introduced in August 1995, there is a possibility that your video chipset does not (and will not) have a DirectDraw driver. In this case, you may need to upgrade the video adapter.

SYMPTOM 50-23 The PC locks up when using the PC-TV in full-screen mode This is known to occur with some PC-TV boards (such as the Hauppauge WinCast/TV) when using older video adapters based on the S3 Trio64V+ chipset *and* running the TV in full-screen mode. For the WinCast/TV board, you will need to use an update found in the \Program Files\Wintv directory on your PC. To install this update so it takes effect every time you turn your system on, add the following line to your AUTOEXEC.BAT file (found in the root directory):

```
c:\wintv3\765
```

For other PC-TV boards, you may need to contact the individual manufacturer and obtain a driver update to correct the S3 issue, or replace the video adapter with one using something other than an S3 chipset.

SYMPTOM 50-24 **You notice bad or improper colors in the PC-TV window** If your video display is running in the 256 color mode, a TV picture will be displayed with only 256 colors. This compares with the 16 million different colors in the original TV image. The color palette in the TV window will change depending upon which Windows programs are being run and what color palettes are being used. This causes a “shortage” of colors, which can result in the wrong colors displayed. To fix this problem, first try running your video adapter at a minimum of 16 bits per pixel (a high color mode). If you do not have enough memory on your video adapter to run at 16 bits per pixel at your current resolution, either lower the resolution (for example, from 1024x768 to 800x600), add more memory to your video display adapter, or upgrade the video adapter outright.

SYMPTOM 50-25 **The system locks up when using video adapters based on the S3 Vision 968 or 868** System lockups occur randomly and shortly after starting the PC-TV application. This is due to a PnP resource allocation problem (typically memory allocation) between the S3 video adapter and the PC-TV board. To correct this problem, you’ll need to manually readjust the memory address of the PC-TV board:

- 1 Click on the Start button, then Settings, then Control Panel.
- 2 Double-click on the System icon and then the Device Manager tab.
- 3 Double-click on “Sound, video, and game controllers,” and then double-click on the PC-TV card (for example, “Hauppauge WinCast/TV”).
- 4 This brings up the TV card’s Properties window. Click on the Resources tab.
- 5 Uncheck the “Use automatic settings” box. Highlight Memory Range and click on Change Setting.
- 6 The memory address range of the PC-TV card is a set of two 8-digit hexadecimal numbers, such as FFFA0000-FFFA0FFF.

To eliminate the memory overlap, either increase the second digit by 4, or decrease it by 8 (remember to use hexadecimal arithmetic). This changes the memory space between the video adapter and the PC-TV to 64MB. Table 50-2 illustrates two examples.

SYMPTOM 50-26 **You cannot tune the PC-TV card above channel 13** This is almost always a card setup oversight. Check the video source setting in the video property dialog(s). When connecting local cable to your PC-TV card, you must set the video source setting for “Cable.” If you select “Antenna,” the tuner stops at channel 13.

SYMPTOM 50-27 **The PC-TV picture suffers from poor quality** This is usually because of inadequate video board support. A poor TV image is usually the result when your video adapter does not have enough video RAM to hold the TV image. In this case, the PC-TV board usually resorts to a lower-quality mode (such as primary surface mode), which lowers image quality. A memory upgrade on your video display adapter might fix this problem. Another cause of this problem could be that your video

TABLE 50-2 ALTERING MEMORY ALLOCATION FOR A PC-TV BOARD

ORIGINAL CONFIGURATION	INCREASE BY 4	DECREASE BY 8
80000000-80000FFF	84000000-84000FFF	78000000-78000FFF
FFFA0000-FFFA0FFF	Can’t do	F8FA0000-F8FA0FFF

adapter does not support Windows 95/98 DirectDraw. In this case, you should consider an upgrade to a new video accelerator that has DirectDraw support (and perhaps upgrade to the very latest version of DirectX from Microsoft).

A poor video picture might also indicate a bad signal. To verify a bad signal, move the antenna or check your local cable connection. Move possible interference sources (such as other computers or television sets) away from your PC. Contact the cable company to check your signal quality.

SYMPTOM 50-28 The TV picture displays a blue screen There are several conditions when the TV picture might display a blue screen: a momentary loss of signal, a weak video signal, changing the channel, or a scrambled channel. A momentary loss of signal is beyond your control and sometimes cannot be avoided. A weak video signal can be due to weak reception from a distant station using the antenna. Weak cable signals should be addressed by the local cable company. Changing channels can sometimes cause momentary blue screens. (Switch the channel up or down, and then return to the original channel.) A scrambled channel is not a valid channel—you'll need to contact your local cable company and obtain a descrambler (and pay the required premium for that channel).

SYMPTOM 50-29 Snapshots taken from a PC-TV board don't display correctly This usually happens when using a 256 color mode in the video adapter. Colors often corrupt when displaying an image with 16 or 24 bits per pixel (bpp). Try changing the Windows video mode to 16-bit color (or higher). Otherwise, copy the image to a third-party graphics program and resave it as a 24-bit image; then display the image again.

SYMPTOM 50-30 The display flickers when using a PC-TV device This often happens with devices such as the Diamond DTV 1100. The DTV 1100 is designed to run at a 60Hz refresh rate, so your graphics card will automatically switch its refresh rate to 60Hz no matter what refresh rate you have currently set under Windows 95/98. The refresh rate is then switched back to the original setting once the DTV 1100 is no longer in use. (You may see your screen go blank momentarily while this happens.) Also, you'll notice that the flickering will probably be more noticeable at higher resolutions. Unfortunately, there is very little that can be done about this because TV signals must be reproduced at their natural frequency of 60 frames per second (60Hz). The best way to get around this problem is to lower the display resolution.

SYMPTOM 50-31 Only channels 5 and 6 are available, and they are only in black and white This is a problem with the PC-TV software. You're using an old version of the PC-TV software. Contact the PC-TV device maker and obtain a patch or update driver that will correct this problem. For example, this is a known problem with the Diamond DTV 1100 when using driver versions prior to 1.02.

SYMPTOM 50-32 The television picture is green This sometimes happens with PC-TV cards like the Diamond DTV 1100 card and is usually the result of poor or faulty cabling. For the DTV 1100, make sure that the ribbon cable is connected between the "Scenic Highway Local Peripheral Bus" connector on the video card and the DTV1100 "Scenic Highway Local Peripheral Bus" connector. Also make sure that pin 1 (usually designated by a red stripe or dots at the edge of the cable) is connected to pin 1 on the video hardware.

SYMPTOM 50-33 All channels except 14 and 15 are available This is almost always a problem with the PC-TV software. Chances are that you're using an old version of the PC-TV software. Contact the PC-TV device maker and obtain a patch or update driver that will correct this problem. For example, this is a known problem with the Diamond DTV 1100 when using driver versions prior to 1.02.

INTERCAST SYMPTOMS

SYMPTOM 50-34 **You can't start the Intercast viewer** If the viewer can't detect a valid signal source, it tries to locate a valid signal source. If a valid signal exists, the software asks if you want to make it permanent. Click OK to make the setting permanent, or click No to repeat the same process the next time you run the program. If no valid signal exists, an error message appears and the software shuts down. To correct the problem, ensure that the cable or antenna connection to the PC-TV card is secure, and have the local cable company check the signal quality.

SYMPTOM 50-35 **You only receive incomplete Intercast broadcast Web page displays on the PC-TV card** This happens most often when you change channels quickly. You might interrupt the reception of "billboards" and Web pages sent by the broadcaster. In those instances, the default billboard or a partial Web page might display. Make sure you remain on any given channel for a few minutes to allow enough time to receive complete Web pages or billboards.

SYMPTOM 50-36 **You encounter missing Intercast broadcast Web pages** When tuned to a channel that broadcasts Intercast content, the Intercast channel indicator animates. If no Web page displays (even with the animated channel indicator), be sure you're not actively browsing (using the Web browser). Double-click the desired Web page title or icon in the Media Library. The broadcaster may send many Web pages connected by hypertext links before signaling the main Web page to display. If part or all of the pages are missing, you can still view the existing pages through the Media Library. Unless the broadcaster resends the pages, you cannot view pages sent *before* you tuned to the channel, and any links referring to those pages are also not valid. Finally, check with your local cable company. The cable company may have blocked the portion of the signal that sends Intercast content.

SYMPTOM 50-37 **TV images move only very slowly in an Intercast viewer** This will occur without an updated DirectDraw driver in the PC. If an updated DirectDraw driver is not installed, the Intercast viewer will still work with some VGA video adapters, but the video image is moved to the Intercast viewer window through a Video for Windows preview window (which displays at roughly 4fps). This problem can be fixed by installing an updated Direct Draw driver—usually along with updated video adapter drivers. In most cases, you'd simply upgrade to the very latest version of DirectX from Microsoft.

WEBTV AND WAVETOP SYMPTOMS

SYMPTOM 50-38 **Folders remain on the hard drive after installing WebTV under Windows 98** When you uninstall WebTV for Windows using the Add/Remove Programs tool in Control Panel, the (Program Files)\TV Viewer and (Program Files)\Webcast folders may remain on your hard disk. To work around this issue, manually delete the (Program Files)\TV Viewer and (Program Files)\Webcast folders from your hard disk:

- 1 Click Start, highlight Find, and then click Files or Folders.
- 2 In the Named box, type **tv viewer** and **webcast**, and then click Find Now.
- 3 In the list of found folders, right-click each folder, and then click Delete.
- 4 Close the Find window.

SYMPTOM 50-39 WebTV does not display any active content under Windows 98

When you use WebTV for Windows, you may not see active content with a television program, closed captioning, the electronic programming guide (EPG), or software subscriptions. This problem can occur if the “closed captioning” feature on your PC-TV card is disabled. To work around this issue, set the jumper to enable the closed captioning feature on your PC-TV card. WebTV for Windows uses the information contained in the vertical blanking interval (or VBI) broadcast on the television channel you’re viewing to display closed captioning and other content. When the jumper for the closed captioning feature on your PC-TV card is disabled, all information broadcast through the VBI cannot be used.

SYMPTOM 50-40 WebTV stops its program guide download when you change the channel

If you change channels in WebTV for Windows while the program guide is being downloaded under Windows 98, the download is not completed. This happens because the program guide data is available on only one channel. Changing channels interrupts the download process. Do not change channels while the program guide is being downloaded. Wait until the guide download is completed before you change channels. You can also change the scheduled program guide download to a later time. When the program guide is being downloaded, a “Guide Loader” icon appears on the right side of the task bar. Do not run WebTV for Windows or attempt to change the channel until the icon disappears.

SYMPTOM 50-41 The incorrect network protocol is installed for the TV data adapter under Windows 98

Suppose you install Windows 98 on a system that only has DOS and a Novell network client (such as Netx or VLM) installed. If you choose to install the WebTV for Windows optional component, the correct network protocol is not bound to the TV data adapter that is installed in Network properties. Setup does not install TCP/IP for the TV data adapter when you install Windows 98 over a network using the IPX/SPX protocol, which is used by the Novell network clients Netx and VLM. Install TCP/IP and bind it to the TV data adapter:

- 1 Click Start, highlight Settings, and then click Control Panel.
- 2 Double-click Network, and then click the Configuration tab.
- 3 Click Add, click Protocol, and then click Add.
- 4 In the Manufacturers box, click Microsoft.
- 5 In the Network Protocols box, click TCP/IP, and then click OK.
- 6 Click OK. Restart your computer when you’re prompted to do so.
- 7 Click Start, highlight Settings, and then click Control Panel.
- 8 Double-click Network, and then click the Configuration tab.
- 9 Click TV Data Adapter, and then click Properties.
- 10 On the Bindings tab, click the IPX/SPX check box to clear it, and then click OK.
- 11 Click OK. Restart your computer when you’re prompted to do so.

SYMPTOM 50-42 There’s a “black screen” error running WebTV for Windows under Windows 98

When you run WebTV for Windows, you may see a “black screen” with the following error message:

Cannot display this channel. Check your TV tuner card and make sure the other video applications are not running.

This problem can occur if the Hardware Acceleration setting in your Display properties is set to No Accelerator Functions or Basic Accelerator Functions. If you need to set the Hardware Acceleration setting to a low setting for another program, change it to a higher setting before running WebTV for Windows:

- 1 Click Start, highlight Settings, and then click Control Panel.
- 2 Double-click Display, and then click the Settings tab.
- 3 Click Advanced, and then click the Performance tab.
- 4 Move the Hardware Acceleration slider to the setting you want.
- 5 Click OK, and then click OK.
- 6 If you're prompted to restart your computer, click Yes.

SYMPTOM 50-43 You see an error such as “Cannot display this channel” When you attempt to start WebTV for Windows under Windows 98/SE, you may receive an error message such as:

Cannot display this channel. Check your TV tuner card and make sure other video applications are not running.

This problem can occur when Windows Media Player is started *before* WebTV for Windows, and the Media Player continues to run in the background. You may need to reboot the system to clear this problem. To prevent this problem from occurring, start WebTV for Windows first, and *then* start Windows Media Player (if necessary). You can also check with Microsoft for a patch or update that may correct the compatibility between Media Player and WebTV for Windows.

SYMPTOM 50-44 You cannot download the WebTV program guide under Windows 98/SE When you attempt to download the WebTV for Windows program guide listings from the Internet, you may receive an “Unable to connect” error message when you click Get Listings. This fault happens most frequently after upgrading to Windows 98/SE when you do not configure the Dialing Properties for your modem. The Dialing Properties information is only needed if you're downloading the program guide information directly from the Internet. If you're retrieving the listings using the VBI data through your cable system, you do not need to configure the Dialing Properties. To fix this problem, run the Internet Connection wizard or manually update the appropriate dialing settings:

- 1 Click Start, highlight Settings, and then click Control Panel.
- 2 Double-click Modems, and then click Dialing Properties.
- 3 Enter the appropriate dialing information for your particular location.
- 4 Click OK, and click OK again to save the information.
- 5 After you configure the Dialing Properties, restart the WebTV wizard and try downloading the program guide again.

SYMPTOM 50-45 The WaveTop 2.0 software doesn't detect your PC-TV card When you run the WaveTop 2.0 configuration wizard in Windows 98/SE, you may receive an error message such as:

No compatible Tuner Card was detected

This is a common issue when you install WaveTop software after you install Windows 98 SE on a computer. The software is expecting to see an ATI All-in-Wonder (or ATI All-in-Wonder Pro) display adapter, but chances are that your display adapter is different. To fix this issue, you'll need to reinstall Windows 98 SE. After you reinstall Windows, run the WaveTop 2.0 configuration wizard again to detect and configure your PC-TV card.

SYMPTOM 50-46 You see a "pink" icon when receiving a broadcast enhancement

When you receive a broadcast enhancement using WebTV for Windows under Windows 98/SE, a pink Interactive TV icon may appear. This is a driver problem that is commonly caused when an ATI All-In-Wonder video adapter is installed with the default Windows 98/SE display drivers. To resolve this issue, install the latest ATI All-In-Wonder video adapter drivers, which you can obtain directly from the ATI Web site. If the drivers are self-extracting, you can simply run the self-extracting (EXE) file. Otherwise, try the following steps:

- 1 Right-click the My Computer on your desktop, click Properties, and then click the Device Manager tab.
- 2 Double-click Display Adapter, and then double-click the All-In-Wonder entry.
- 3 Click the Driver tab, and then click Update Driver.
- 4 Click Next, click "Display a list of all the drivers in a specific location, so you can select the driver you want," click Next, and then click Have Disk.
- 5 Click Browse to locate the folder where you downloaded the new drivers, and then click OK.
- 6 Click the appropriate video adapter driver, click Next, and then click Finish.
- 7 Click Yes to restart your computer.

Further Study

ADS Technologies: <http://www.adstech.com/>

ATI: <http://www.atitech.com>

Diamond Multimedia: <http://www.diamondmm.com>

Hauppauge: <http://www.hauppauge.com>

Intercast: <http://www.intercast.com>

Matrox: <http://www.matrox.com>

Phoebe: <http://www.phoebemicro.com/>

RDS Forum: <http://www.rds.org.uk/index.htm>

WaveTop: <http://www.wavetop.net>

WebTV: <http://www.webtv.com/home/index.html>