WinTV USB®

Installation and Reference Manual

Hauppauge!®

WinTV-USB®

Installation and Reference Manual

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FCC Statement

Radio Interference Statement:

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

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

FCC ID: H90WINCAST MADE IN USA

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance to the FCC Rules could void the user's authority to operate the equipment.

CE Statement:

This equipment has been tested and complies with EN 55013, EN 55020 and IEC 801-3 part 3 standards.

CE

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Introduction

This manual covers all of the **WinTV USB** models:

WinTV-USB

WinTV-USB FM

References to the **WinTV USB** apply to all models. The Windows98 driver for all of the **WinTV USB** models will be referred to as the **WinTV-USB driver**, and the installation CD-ROM will be referred to as the **WinTV Installation CD-ROM**.

The **WinTV** application, which is referred to in this manual as the **WinTV application,** will show your TV or video in a window on your PC screen. There are two versions: the **WinTV32** and the **WinTV2000**. Both applications have the same features, but have a different "look and feel".

For models which have particular features (such as the chapter on the Radio application), we will note which models these features are available on.

For a description of how the **WinTV USB** displays video on your VGA screen, see the chapter entitled **How WinTV USB Works**.

Installing the WinTV USB

Note: DO NOT PLUG THE WinTV-USB into your PC until your PC has fully booted..

To install **WinTV USB** under Windows 98 or 2000, you will follow these steps:

- ✓ Plug the **WinTV USB** into your PC or laptop's USB port(After booting intoWindows)
- ✓ Install the drivers with the **WinTV USB Installation CD-ROM**
- ✓ After the **WinTV USB** driver is installed, you will then install the **WinTV** application software from the **WinTV Installation CD-ROM**

Diagram

The following diagram shows the main functions and connectors of the **WinTV-USB.** Since there are several different models with different features and functions, your board may not have all of the components installed.

Board connections

FM: FM radio antenna connection (on some models)

TV: TV antenna or cable TV connection

Audio LineOut: Audio output 1/8" minijack (connects to sound card LineIn jack)

Video In: S-video input with composite adapter.

Audio Line In: Audio input 1/8" minijack

Contents of the WinTV-USB package.

WinTV-USB or **WinTV-USB-FM** unit

1 meter audio cable - sound cable for connecting between the **WinTV-USB** and your sound card

S-Video to composite adapter

FM radio antenna (on WinTV USB-FM models equipped with FM radio)

WinTV-USB Warranty registration card

WinTV-USB Installation CD-ROM with:

WinTV2000 application

WinTV driver for Windows98 and Windows2000

Microsoft NetMeeting for video conferencing

Installing the WinTV-USB

Note: DO NOT PLUG THE WinTV-USB into your PC until your PC has fully booted..

Turn on and boot into Windows98 and/or Windows 2000.

Then plug the **WinTV-USB** into one of the USB connectors on the back of your PC, not a USB hub or keyboard.

Installing the driver under Windows98 or Windows2000

After the **WinTV-USB** is installed, the **Add New Hardware Wizard** will appear.

Select **Search for the best driver for your device (Recommended)**.

Click **NEXT**.

When you see this dialog box, insert the **WinTV USB Installation** CD-ROM into your CD-ROM drive.

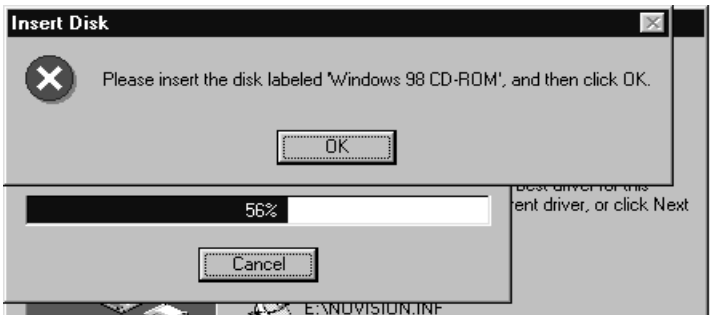
Select **CD-ROM drive** and click **NEXT**.

Once the Hauppauge **WinTV-USB** video driver has been detected, click **NEXT**.

You will see a number of files copied to your hard disk.

Click **FINISH** to reboot Windows.

After (rebooting), you may be asked to insert your **Windows98 CD ROM**.



Note: Be sure to use the exact version of Windows 98 CD-ROM that is installed on your system. If you are using Windows98 SE, do not use a Windows98 Gold CD-ROM. Also if Plug-n-Play does not correctly load the driver, you may manually load the driver from the WinTV-USB CD-Rom. Open the USB folder and double click the file "USB98.exe" to manually install the driver. Once the driver is finished, you must manually run the SETUP.EXE on the WinTV-USB root directory to install the WinTV viewing application.

Connecting the WinTV-USB to a VCR, Video Camera or Camcorder

Most VCR's or camcorders have a female RCA jack labeled "Video Out". Most also have a jack labeled "Audio Out". Most video cameras simply have one output connection labeled "Video Out".

To connect the video to the **WinTV-USB**, use shielded video cables (not supplied) with male RCA connectors on both ends:

- connect from the **"Video Out" jack** on your video camera, VCR or camcorder to the **Composite Video input jack** on the **WinTV-USB**.

Note: USB has a high quality S-Video input jack, which requires an S-Video to Composite video Adapter (supplied) to connect to your Camcorder or VCR.

To connect the audio from your VCR or camcorder, use an 1/8" stereo minijack extension cable (1/8" male minijacks on one end, and RCA onthe other end) and connect the "Audio Output" RCA" on the VCR or camcorder to the Audio Line In jack on the **WinTV USB**.

Note:. If you need a female RCA to 1/8" minijack adapter, these adapters can be found at most Radio Shack stores.

Connecting the WinTV-USB to a Sound Card

The board's audio output should be connected to a sound card using the supplied **Audio Cable**:

- plug one end of the **Audio Cable** into the jack marked **LineOut** (**Audio Line Out jack J4**) on the USB unit
- plug the other end of the **Audio Cable** into your soundcard's **LineIn** jack.

Note: Most sound cards have three round jacks on the outside of the PC. They are: Microphone Input, Audio Output and Line Input. The Audio Output would go to your speakers, while the Microphone input might go to a microphone (if you are using one). The LineIn jack is normally indicated on the sound card by the words IN or LineIn stamped into the metal bracket on the outside of your PC. This is where you would plug your Audio Cable, Also Some Laptops do not have a Line in and you would have to connect the USB device to the Mic input on the Laptop, or to a seperate set of powered speakers.

Adjusting the Audio Volume

Once the audio cable is connected to your Sound Card, the **WinTV** application can change the audio volume coming from the **WinTV USB** by adjusting the **LineInput** sound volume of the **VolumeControl** program in Windows.

The **VolumeControl** program is normally installed with Windows or by the sound card installation program, and allows the control of volume from the various sound sources. If you cannot hear sound when running the application, you might need to check the volume level of **LineInput** in **VolumeControl**.

The VolumeControl application is started by clicking either:

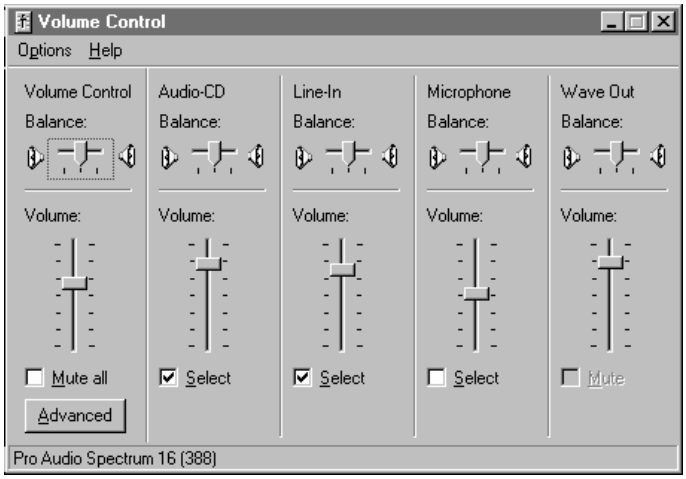
Start/Programs/Accessories/Multimedia/VolumeControl

or

Start/Programs/Accessories/Entertainment/VolumeControl

or

Double click the speaker icon in Systray



You should see **Line-In** balance as one of the selections. If not, then click on **Options/Properties** and under **Show the following volume controls** check **Line-In**. Then click **OK**.

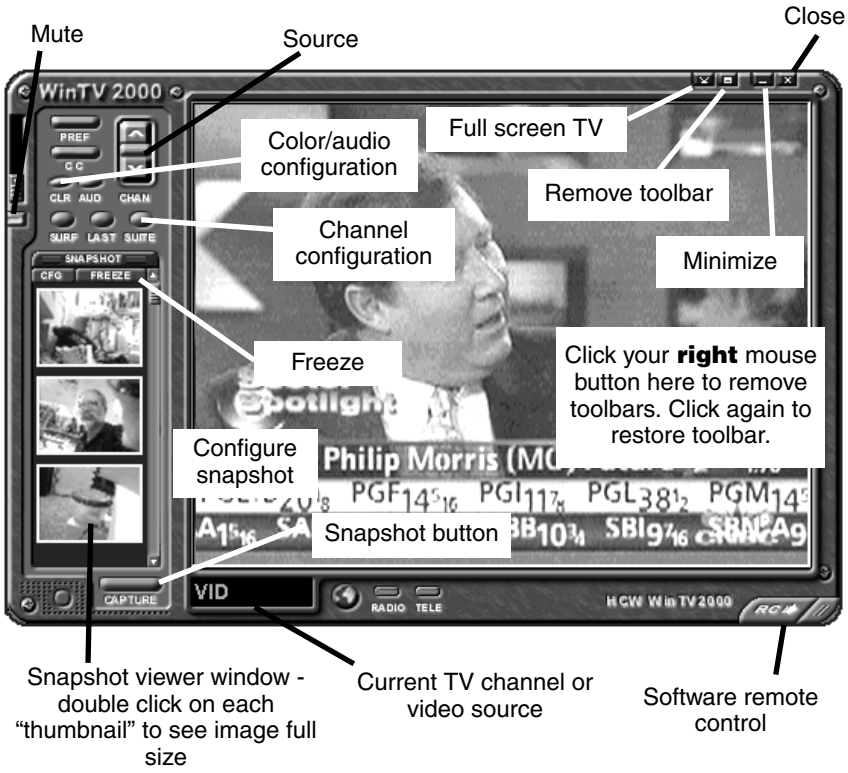
You should now see a selection for **Line-In**. Make sure the **Select box** is checked, then raise the volume to about 1/2 of the way to the top. This should be a good starting point for the volume control.

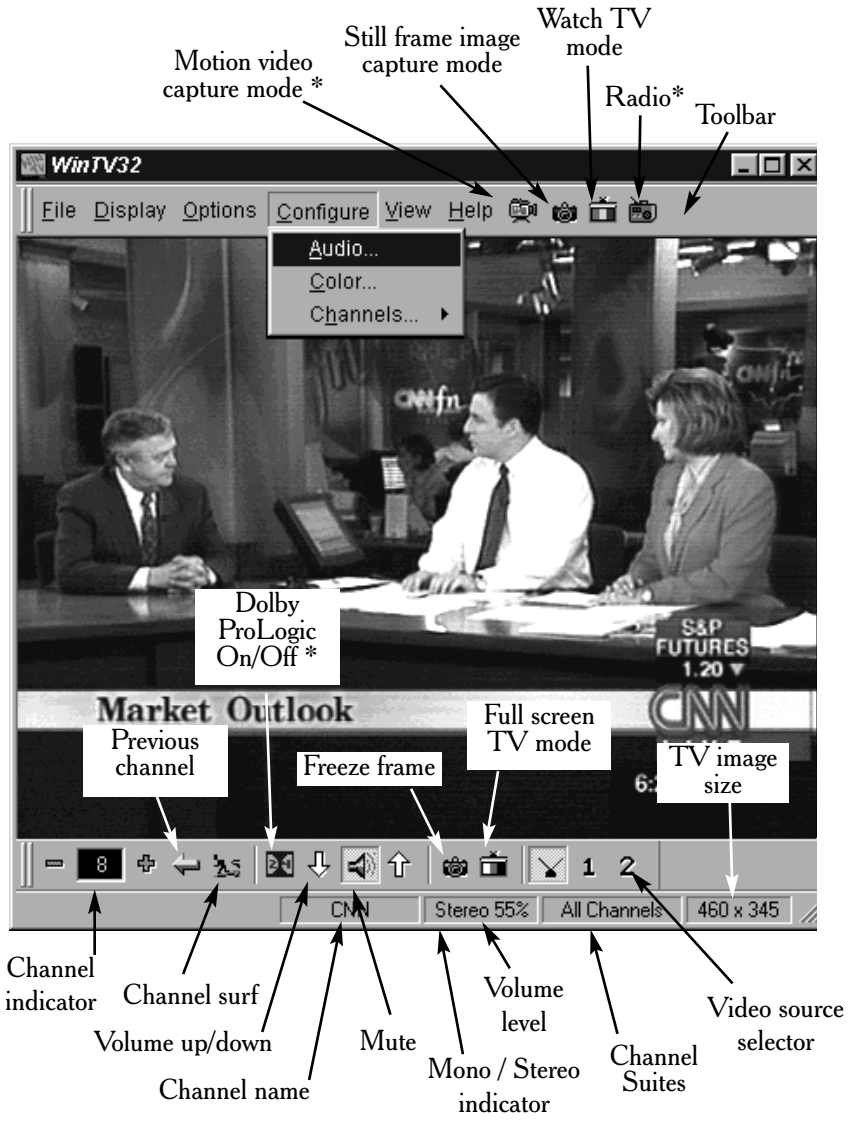
If **LineIn** is muted or not selected, **unmute** or **select** it to hear audio from the **WinTV USB**.

In the **WinTV** application under the **Configure/Audio** menu, the Mixer ID should be set at **Line-In**.

As you adjust the audio volume in the application, you should see the slide bar in the **Volume Control** window rise and fall.

The WinTV2000 Application





*** on some model 's**

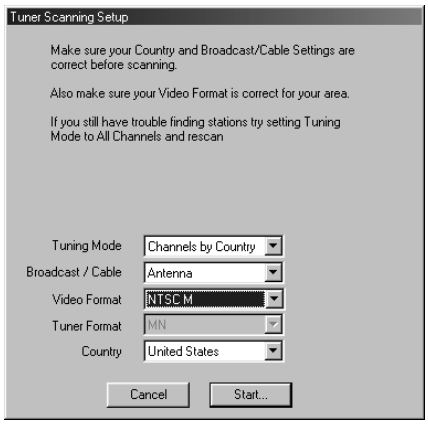
Running the WinTV application

After installing the **WinTV** application from the **WinTV USB Installation CD-ROM**, you will see icons on your Windows background. Start **WinTV32** by double clicking on its icon.

Once the Application is initialized, you should see the RED light illuminate on the **WinTV USB.**

You can also click on **Start/Programs/HauppaugeWinTV** and then click on the **WinTV32** icon.

The first time you run **WinTV**, you will be asked to scan for TV channels. Click **OK**.

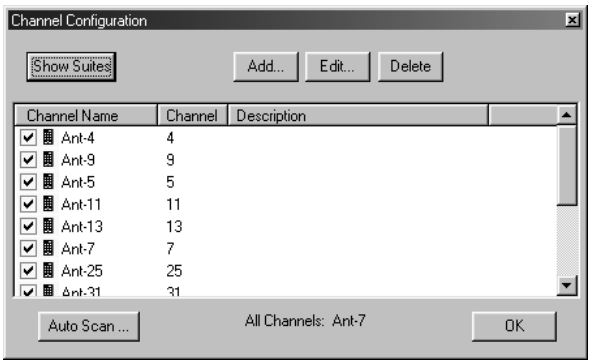


If you are using a cable TV connection, in the **Broadcast/Cable** menu item, select **Cable**.

In **Video Format**, in North America choose **NTSC M**. In **South America**, choose **PAL M** or **PAL N**.

After the scan is complete, you will have a list of TV channels which are active in your area.

To set up a External video source: go into suite manager and click on INPUT Sources. Highlight COMPOSITE and click ADD. Pick your video format and give it a name, then click ADD. Now you have a external video channel.

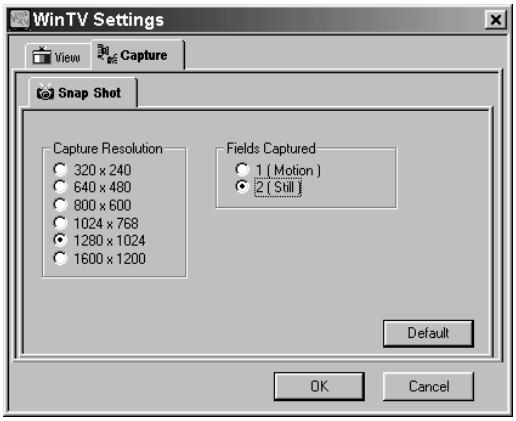


You can modify the channel names by single clicking on the channel, then clicking **Edit**. Change the **channel name** to the name that you would like to have displayed in the 32 toolbar.

Still Frame Image Capture mode

You can switch the 32 application into the high quality image capture mode by clicking on the **Still Frame Image Capture Mode** button on the toolbar. When you click on this button, you will see the **Image Capture Toolbar**.

Click on the **Configure** icon in the **Image Capture Toolbar** to set the image capture configuration.



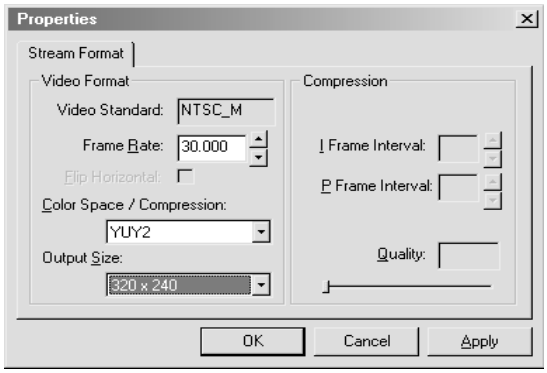
You can capture images up to 1600x1200 pixels.

To reduce the effects of motion in the video image, but with lower image resolution, in the **Fields Captured** option choose **1 (Motion)**.

Motion Video Capture mode

You can switch the 32 application into the motion video capture mode by clicking on the **Motion Video Capture Mode** button on the toolbar (see page 3-1 for its location).

To setup for motion image capture, click the **422/YUV** button:



For best performance when capturing, set the **Image Format** to **YUY2** or **RGB** , and the **Image Dimensions** to **320x240**. Although you can capture larger than **320x240**, the file size will be larger and the video capture quality will be down graded.

The number of Frames per second captured (up to the limit of 30 fps) is set in the **File Folder** icon in the **Motion Video Capture toolbar**.

Using the mouse in WinTV

The Windows mouse is used to move the TV window, resize the window, select menu options and make the window appear in full screen or adjustable screen size. Use the left and right buttons, the middle mouse button (if your mouse has one!) is not used.

Single click TitleMode/NoTitleMode makes easy to use!

The left button is used for all control and select functions. ***The right mouse button is clicked inside the video window to hide or display the tool and menu bars and to turn off the full screen TV mode.***

These modes are called **TitleMode** and **NoTitleMode.** You can toggle back and forth between **TitleMode** and **NoTitleMode** by simply clicking your right mouse button when your mouse is inside the video window.

The window is moved in **NoTitleMode** by clicking and holding your left mouse

button in the middle of the **WinTV** window and moving it to the new position. Then let it go! Move the **WinTV** window in **TitleMode** by clicking and holding your mouse button on the Title Bar (where it says Hauppauge WinTV32), holding it down and dragging it to the new position.

You can set a different size and a different place on your VGA screen for the **WinTV** window in **TitleMode** and **NoTitleMode**. Then by simply clicking with the right mouse button, the window will switch from one saved size and place on the screen to the other! Try clicking your right mouse button several times in the middle of the TV window and see what happens.

To set the window size, "grab" a corner of the **WinTV** window with your mouse (hold down the left mouse button when it is on one of the corners of the window) and then drag it to the preferred size, then release the mouse button.

For example, if you would like to watch without the tool/menu bars in a small corner of the Windows screen, click the right mouse button inside the video window and the tool/menu bars will disappear. Then drag the window to its preferred size and location on the Windows screen. Now click the right mouse button inside the window and the application will now save the correct size and location on screen for **NoTitleMode**. Every time you select the **NoTitleMode** by right clicking in the window, the window will resize and move to the saved position.

To select which bars and indicators are shown when in the **TitleBar** and **NoTitleBar** modes, click on **View**. You can eliminate the status bar and the toolbar in the **TitleMode** or add the status bar in the **NoTitleMode.**

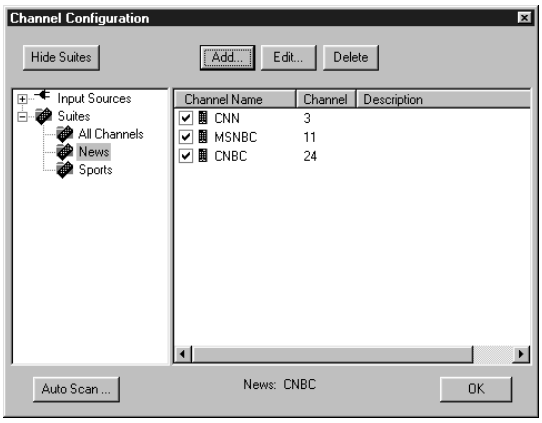
Setting up your TV channels

To set up the TV channels in the application, click on **Configure/Channels/SuiteManager:**

You'll see the **Channel Manager**. From the **Channel Manager**, you can Add, Edit or Delete channels.

You can also create channel suites, which are subsets of the **All Channel** suite. For example, you can have a suite of just TV news channels, and name this suite "News".

Channel Suites allow you to create a subset of all the channels, so that you can channel surf through only those channels. To set up a new Channel Suite, click on **Show Suites**. Then click on **Suites** (in the left column), then click **Add**. You can then name the suite and add channels to the suite.



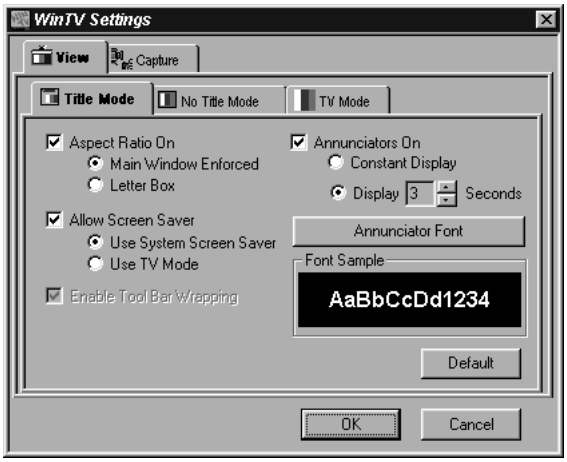
To change to a suite, in the 32 toolbar, right click your mouse button in the **Channel Suite** area (the default is All Channels). You will then see a list of suites. Click on the one you would like to switch to.

Setting preferences in Title mode

Click **Display/Preferences/View** and then click on the **Title Mode** tab.

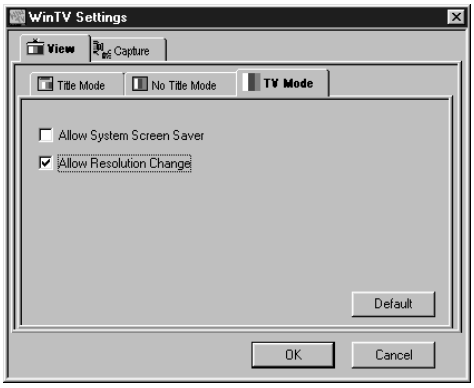
Aspect Ratio On forces the viewed aspect ratio to 4:3. When turned off it will allow arbitrary aspect ratios.

Annunciators On display the TV channel on screen when you change channels, and display the volume when you adjust the volume.



Setting full screen TV mode

Click **Display/Preferences/View** and then click on the **TV Mode** tab.



Set **Allow Resolution Change**.

If you then click on the TV icon on the 32 Toolbar, the application will switch the VGA mode to the chosen size (using the Windows Quick Res feature), allowing the image to be viewed full screen.

Image Save, Print and Copy to Clipboard

The process to save, print or copy an image starts with the digitizing of a single video frame. When one of these functions are clicked on, the next video frame is moved into your PC's main system memory instead of the VGA display. Your PC's processor then converts the digitized video image into a 24-bit DIB image (a format which is used internally in Windows), and then copied back into the VGA memory so that you can see the image which will be printed or saved. This becomes a "frozen" image in the window.

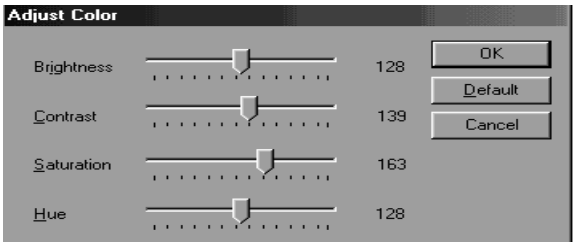
The video images which are digitized can be saved to disk, printed to a color or black/white printer or copied to the clipboard. These functions can be viewed from the File menu:

There are a few things which need to be noted. First, because a video frame is composed of two "fields", an odd field with the odd lines in the image and an even field composed of the even lines, there might be a distortion in the frozen image if there was rapid motion while the image was being moved into main system memory. This distortion is called "interlaced artifact".

Another item to note is that the video image, when converted into a 24-bit DIB image, will look lighter than it did when it was in motion. You can adjust the image's brightness, contrast and color saturation and hue by clicking on **Configure/Color**. These adjustments are made during the digitizing process on the board and will affect both the "live" image and the frozen image.

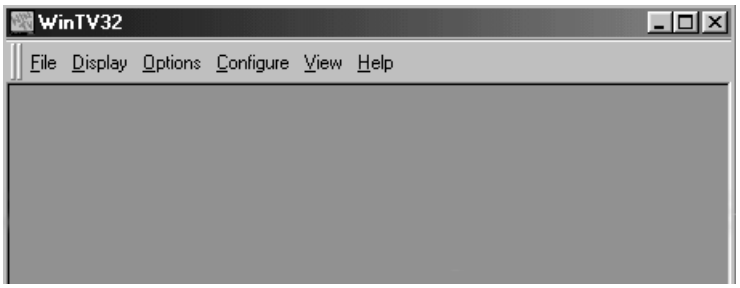
Adjusting the video image's color

You can adjust the brightness, contrast saturation and hue of the live TV image by using the color adjustment menu. Click on **Configure/Color** to get the adjustment menu:



Options Menu

The Options Menu has settings for Always-on-Top mode and Aspect ratio mode plus duplicates buttons found on the toolbar for operation without a mouse.



Always-on-Top mode

The Always-on-Top mode conveniently puts the TV window "on top of" other Windows windows. In this mode, you can easily move the TV window to the No-Title mode by clicking the right mouse button in the middle of the TV screen.

Aspect ratio

The natural TV window size has a 4:3 aspect ratio. By unclicking the **Aspect Ratio** setting in the Options menu, you can change the TV window to any size you want! Make it tall, short or any size. With **Aspect Ratio** turned on, the window size will always be forced to a 4:3 ratio.

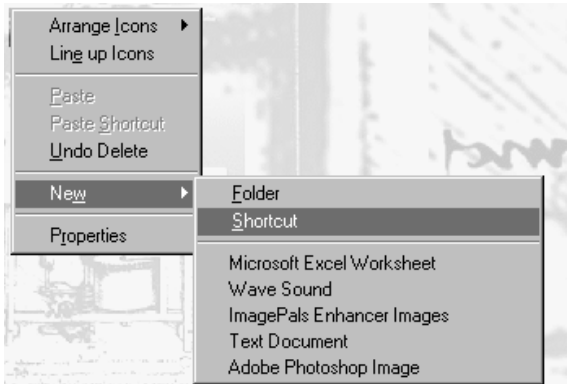
Keyboard control of the 32 application

Convenient keyboard controls duplicate the functions of the toolbar.

Volume Up	=	Page Up
Volume Down	=	Page Down
Mute	=	Ctrl+M
Channel Up	=	Plus (+)
Channel Down	=	Minus (-)
Print a Frame	=	Ctrl+P
Copy to Clipboard	=	Ctrl+C
Copy from Clipboard	=	Ctrl+V
Freeze Frame	=	Ctrl+F
Full screen TV mode	=	Ctrl+T
Reset tool bar	=	Alt +M
Take a snapshot	=	Space bar
Right mouse button	**=**	***Title mode/No title mode/Turns off TV mod***e

Setting up a shortcut

You can set up a shortcut to the application at any time. To do this, click your right mouse button on your Windows background. Then click on **New**. You should see the following dialog box:



Then click on **Shortcut**.

Click on **Browse**, then look in the **Program Files**/ directory. Select **WinTV 32.exe**.

Then click on **NEXT**to finish to set up the shortcut.

Creating Digital Video movies with WinTV-USB

Overview of Video Clip Capture

Live video which is digitized by the video digitizer (see "How **WinTV USB** works") can be "captured" as a video sequence (or "video clip") by using the **WinTV Capture** program. This program is provided in the **WinTV Application** and uses Microsoft's WDM for Windows capability which is built into Windows 98 and 2000.

WinTV-Capture creates a file type called AVI (Audio/Video Interleaved) on your hard disk. This file contains digitized video and, optionally, audio.

WinTV USB gives high quality captured video by storing uncompressed digitized video in an AVI file. This compares with compression methods such as JPEG and MPEG, where some loss of video quality is accepted in order to reduce the amount of data stored. Uncompressed video capture creates high quality digital video movies, but requires optimized system performance to avoid lost video frames (called "dropped frames".)

To create the best quality digital videos, use the following steps:

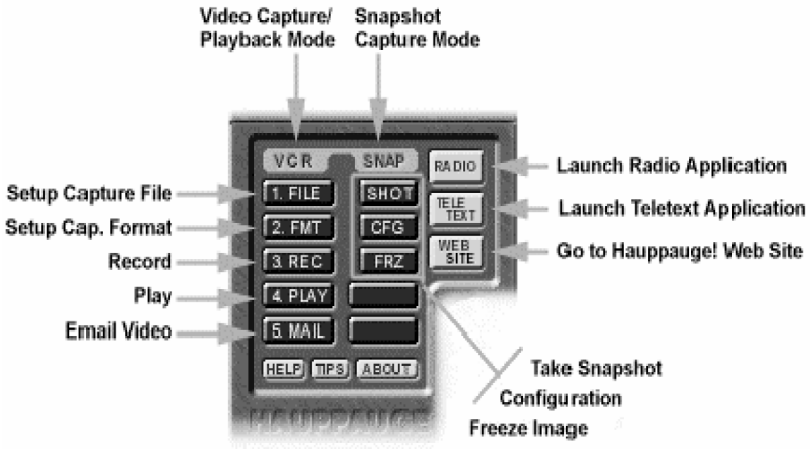
- Compress/Edit, etc. by using the appropriate 3rd party software with these functions
- Edit the raw video. Add special effects, cut, paste, etc. using one of the popular digital video editing programs such as Adobe Premiere, MGI VideoWave or U-Lead MediaStudio.
- After editing the video, compress the video for the playback target. For example, if you are creating a video to be used in a multimedia presentation, compress with either Intel's Indeo or Supermac's Cinepak. If you are creating a CD-Video, use MPEG compression to get up to 74 minutes of video on a CD-ROM.

Using WinTV Capture

The **WinTV-Capture** program is an easy-to-use program that previews live video, captures an AVI file to disk, and plays back the AVI file to your VGA screen. **WinTV-Capture** can capture and playback video clips, but does ***not*** provide video editing capabilities. Digital video editing programs such as Adobe Premiere or U-Lead MediaStudio can be used to edit your digital videos.

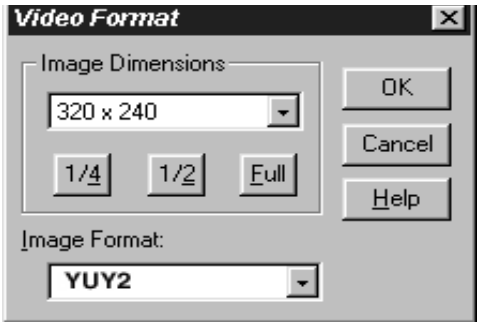
With **WinTV-Capture** you can set the number of frames per second that are captured and the size of the video image. You need to experiment to determine how much video your PC can store to the disk (in terms of image size and frames per second) because capturing video clips is very CPU and hard disk intensive.

-Software Remote Capture window: Found in WinTV 2000



Setting the video image size

The maximum suggested video image capture size is 320x240. When playing back the video on slower PC's, a smaller image size might be needed. To set the image size, click on **FMT Button:**



The **WinTV-Capture** program can use several different types of color formats when capturing video clips. For highest capture performance, choose the **YUY2 OR RGB** formats. These give excellent capture image quality and frame rate, but will give slow performance on playback of **320x240** image size videos.

YUY2 OR RGB formats are also good if you plan to edit your video clips with Adobe Premiere or MediaStudio, and plan to compress the digital videos using Cinepak or Indeo. If you do not plan to edit your videos and want good playback performance, choose a smaller image size (160x120). Capture and playback performance is determined by your system configuration, including CPU and hard disk speed.

Setting the number of frames per second captured

To set the number of frames per second captured, click on **File/CaptureSetup**:

The number of video buffers will depend upon how much RAM you have in your system. The maximum number of buffers is 1000.

After setting the video format, the number of frames per second and possibly creating a new file name (by clicking on **File/SetCaptureFile**), you can start capturing video by clicking on the Capture Video icon.

Using Audio with -Capture

To capture audio along with video, the **WinTV USB** must be connected to a sound board capable of saving sound clips. To connect the **USB** to a sound board do the following:

a) Make sure the audio output of the card is plugged into the **LineInput** of the sound board.

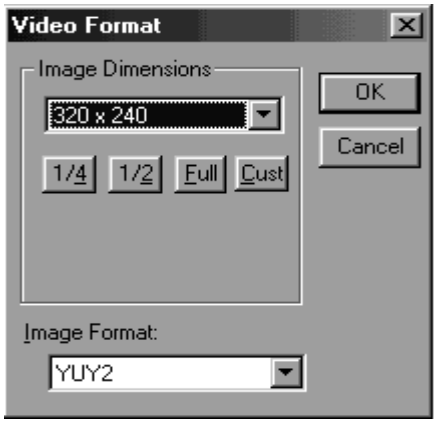
b) Make sure the LineInput volume for recording is set correctly and not muted. Open the Volume control panel, then click on **Options/Properties**. In the panel **Adjust volume for recording** set for **Recording**. Make sure LineInput is checked under **Show the following volume controls** and that the volume for LineInput is not muted and is set at an appropriate level**.**

Note: ***Capturing audio along with video puts a greater strain on your PC than capturing video alone. If your PC drops many frames while capturing audio and video together, then capture the audio separately with the audio capture utility from Windows. The audio can be merged with video later on during the video edit stage.***

Suggestions on capturing video

Captured image sizes can be either 160x120 or 320x240 pixels.

For the best trade off between image size and captured frames per second, use a 320 x 240 image. With a 166MHz processor MMX (or better) and a reasonably fast hard disk drive, you should be able to capture 30 frames per second using the YUY2 OR RGB format.



The consumption of hard disk space is dependent upon the size of the video image while capturing, the image format plus the number of frames/second. Using the YUY2 OR RGB image format, the following chart shows hard disk space consumed:

image size	frames/second	bytes per second	1 minute video
160x120	15 frames/sec	425 Kbytes/sec	26 Mbytes
320x240	15 frames/sec	850 Kbytes/sec	52 Mbytes
320x240	30 frames/sec	1.7 Mbytes/sec	104 Mbytes

Video consumes quite a bit of hard disk space! At 320x240, you will only be able to store about 10 minutes of video on a 1 Gigabyte hard disk!

To reduce the amount of hard disk space used by your digital videos, you can edit the video using one of the popular 32-bit digital video editors (such as Adobe's Premiere or U-Lead's MediaStudio). After editing, you can compress the video using a software playback format such as Indeo or Cinepak (both of these are supported by Windows98). Typical compression achieved by these formats is 30:1.

Tips on improving capture performance

Do not use DoubleSpace or any other disk compression scheme! This severely slows down your hard disk.

Turn off screen savers and do not connect to a local area network.

Most professionals capture video and audio separately. This allows them to "lay down" the audio track on top of the video tracks while editing. Capturing video separately will increase the performance of your video captures.

There are several hard disks on the market which are designed for higher performance video captures. These drives use 1:1 interleaving and track caching to eliminate gaps caused by a hard disk drive seeking to the next track. They are available with both IDE and SCSI interfaces.

Teletext Data Reception using VTPlus (In Europe ONLY)

Teletext is used in Europe and other parts of the world to transmit digital data along with a television picture. Teletext data is transmitted in an invisible part of the TV picture called the "Vertical Blanking Interval" or VBI.

Teletext data is normally formatted into pages. A master index is also transmitted which lists the various categories that can be received, and which Teletext page they are being transmitted on. Teletext data must be inserted into the VBI by your TV broadcaster, and can only be received on the **WinTV USB** if the Hauppauge Teletext decoder is installed.

An example of a Teletext page follows. Each Teletext page has a page number, a date and the current time in the right hand corner:(The time shown in a selected page will only Update if "Update Continuosly is selected- see later, in this section).

VTPlus for **WinTV USB** is a sophisticated Teletext software application which runs exclusively on the Hauppauge **WinTV**. VTPlus allows you to view multiple Teletext pages, save or print Teletext pages and create Dynamic Data Links so that Teletext data can be used in other Windows applications. The **WinTV** application does not have to be active while the VTPlus Teletext application is running.

Starting VTPlus

If the VTPlus application is provided on CD-ROM, then it will automatically be installed from the **Installation CD-ROM.**

To start VTPlus, click on the VTPlus button in **WinTV32** or click on the **TELE** button in **WinTV2000**. this will close the TV application and launch VTPlus. The **WinTV USB** cannot run the application and VTPlus at the same time.

You need to create a VTPLUS suite within the **WinTV 32** or **WinTV 2000** applications.

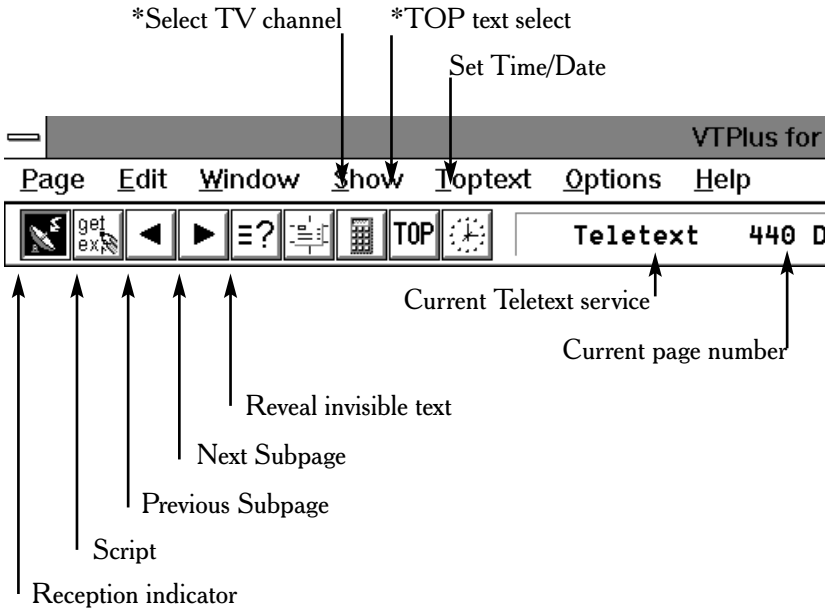
(Go to configure-channels, Suite manager, Suites) and choose ADD suite and name the new suite "VTPLUS".

Configuring VTPlus

The first time that you run VTPlus, it is recommended that you first check the following configuration setting:

Go to **Options**, **Program options**, and make sure that in the General tab, **Multiple Channel Mode** is selected but not **Background Memory Active.** If **Background Memory Active** is selected and **greyed out** then, temporarily, you will need to de-select the Multiple Channel Mode option.

VTPlus toolbar



***Note:** These fuctions are not applicable in the UK.

1. **Reception indicator:** when this symbol is red, your requested page is being received.
2. **Script:** shortcut for **Options/Script**. See **Help** for information on programming the Script.
3. **Select previous Subpage:** indicates, when dark, that there are subpages before the current subpage. When a light grey, there are no subpages before the current page.
4. **Select next Subpage:** indicates, when dark, that there are subpages after the current subpage. When light grey, there are no subpages after the current page. For example, if the current page is 100 and there are no subpages in page 100, the **Select next Subpage** icon will be light grey.
5. **Reveal button:** shortcut for **Show/HiddenCharacters**. When you use this button you might see hidden text, such as VPS time codes or answers from a Quiz.

Quickselect Teletext pages

By using the **Ctrl+N** key a Create and Receive page pops up requesting a page number. Type the requested page number. If this page is to be received continuously (every time the page is received, the page is automatically updated), click the **Update Continuously** box.

Many Teletext pages have a reference to other pages. For example, the TV guide section has a number of page referrals to movie background information which is being transmitted in other pages. Quickselect allows you to select these pages directly. Double click the left mouse button on the desired page number in the current Teletext page, and a new Window appears with the selected page.

If you do not want to open a new Window, but simply change to the new page, push the **Shift-Key** while double-clicking on the page number in the current Teletext page, and the new selected page will appear in the original window.

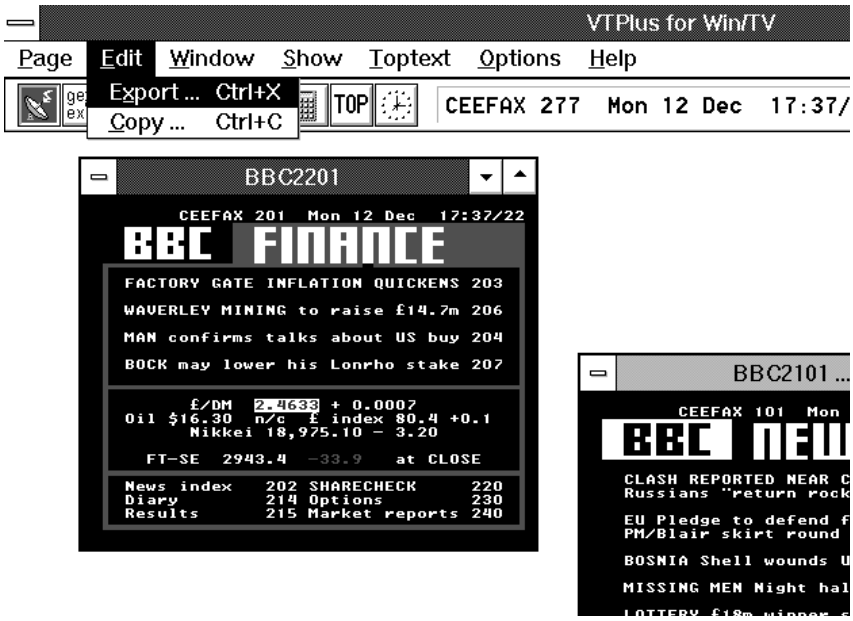
With Quickselect, several pages can be called at once. If a Teletext page refers to a page sequence such as "Share Prices: 500-505", mark the first page number with a single mouse click, click a page number and start the reception with a left Doubleclick on the end page. The distance between the selected pages must not be more than 11.

Example: "News from Page 300-303" are selected with by a single click on 300 and a Doubleclick on 303. The multiple page reception will open individual windows for each of the pages within the selected page numbers.

Dynamic Data Exchange with Teletext

DDE links can be created between the Teletext pages and any Windows program supporting DDE. Programs supporting a live DDE link from a Teletext page include the Microsoft EXCEL spreadsheet and Microsoft WORD.

To create a link, use your mouse to highlight the section of the Teletext page of interest. For example, if the current Teletext page has financial data, highlight with the mouse the financial item of interest by click on the beginning of the field on the Teletext page, holding your mouse button down, and releasing the mouse button at the end of the field.



Then click on **Edit/Copy** option from the Edit menu and click the left button mouse. The information is now in the PC memory. To create a link to the DDE supported applications (such as your spreadsheet), select "**edit past special**" in your application and choose the **past link** option. VTPlus will now create a direct link to your program.

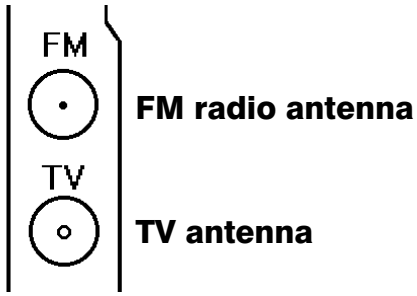
When the data changes in the selected field on the Teletext page, VTPlus will deliver the data automatically to your DDE supported program. Updates through the DDE occur when all subpages are being received and at every update, when the option **Update Continuously** is marked.

Note: For DDE to operate it is necessary for the VTPlus program to be running and for the specific page to be shown.

Using the Radio Application

If you have purchased the **-radio** device, in addition to watching TV you can also tune in radio stations on the FM band.

The **radio** device has two aerial inputs, one for TV and one for FM radio. If your TV antenna (or cable TV network) carries both TV and FM radio, you can connect to the TV antenna connector only:



Running the Radio Application

Click on **Start** / **Programs** / **Hauppauge WinTV** and then **Radio** to run the radio application.

The radio window

Using the Radio Buttons

Volume: The audio volume is adjusted by setting the LineIn level in the Volume Control applet.

Tune: Fine tune the current radio channel.

Seek: Search for the next active FM radio channel.

Mem: Sets a FM radio channel preset. To assign the current station to a preset, click on **Mem** and then on one of the **Preset** buttons (**1-10**).

Mute: Turn off the sound.

Mono: Force mono reception.

Scan: Searches for new stations until you click on Stop. Click the RIGHT mouse button anywhere on the -radio window to set the Scan mode.

Min: Minimizes the -radio window.

CD: Starts the Audio CD-Player for playing back Audio-CD´s.

TV: Closes the radio application and starts the application.

OFF: Closes the radio application.

1 - 10: Preset 1 - 10

Programming the Presets

To assign a radio station to a special Preset button do the following:

1. Tune in the desired station with the **Seek** button (or by using **Tune**).
2. Click on the **Mem** button. It will change to red.
3. Click on one of the **Preset** buttons (**1-10**).

Using the right Mouse button

When you click the RIGHT mouse button in the -radio window, this menu comes up:

1. **Scan Mode: Presets -** When **Presets** is chosen and the **Scan** button is clicked, -radio tunes in only the stations which are assigned to the Preset buttons.
2. **Scan Mode: All -** When **All** is chosen and the **Scan** button is clicked, -radio tunes in all radio stations.
3. **Frequencies -** A list of all frequencies assigned to the preset buttons is shown.
4. **Tool Tips -** Turn on/off bubble help.
5. **Minimize -** Minimizes the -radio application window.

How WinTV-USB Works

Video Overlay mode of operation

Live TV can be displayed on your VGA screen by using either the **Video Overlay** or the **Primary Surface** mode. The mode which is used is dependent upon your PC's hardware and software. If your PC:

- has a VGA display adapter which supports Windows98 Direct Draw,
- and your VGA has a **Video Port** which is designed to accept digital video,
- and your VGA has enough **display memory** to hold the digitized video image

then 's Video Digitizer "pushes" YUV 4:2:2 video pixels for temporary storage into an off-screen part of the VGA memory called a **Secondary Surface**. This method is called **Video Overlay and DIB draw**. The VGA display adapter will then convert the video image from YUV 4:2:2 into RGB video and continuously overlay the VGA screen with the video image. Using Video Overlay, the VGA 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 be able to display full screen TV at all VGA resolutions.

VGA chips which have **Video Port**s include: the S3 Trio 64V+, S3 ViRGE 3D, Cirrus Logic 5446, ATI Rage II, Tseng Labs ET6000.

Primary Surface mode of operation

If your VGA display adapter has a Direct Draw driver but does not have either a Video Port or enough memory to hold the video image off-screen, then the board converts the YUV 4:2:2 video pixels into an RGB format which is compatible with your VGA display adapter's operating mode (8 bits per pixel, 16 bits per pixel or 24-bits per pixel) and then moves the pixels directly into the display memory or **Primary Surface** of your VGA.

VGA chips which can support Primary Surface mode include: the S3 Trio 64, S3 Vision 968, Matrox Millennium and Mystique and Tseng ET6000.

This results in a high quality video image whose color depth is dependent upon your VGA display adapter's operating mode. For example, your TV image when running in a 256 color mode will not be as good as when running your VGA in 16-bit per pixel mode.

Also, because 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.

Troubleshooting

This chapter includes troubleshooting help for solving common problems.

Problem: Bad colors in the TV window

If your VGA display is running in 256 color mode, the TV picture will be displayed with only 256 colors. This compares with the 16 million different colors which are in the original TV image. The colors in the TV window will change depending upon which Windows programs are being run, and what color palettes are being used.

To fix this problem, first try running your VGA adapter at a minimum of 16 bits per pixel. If you do not have enough memory on your VGA adapter to run at 16 bits per pixel in the current resolution, either lower the resolution (example: from 1024x768 to 800x600) or add more VGA memory to your VGA display adapter.

Error message: “could not find "ksclock.dll" or other files on the WIN98 CD”

Be sure that the directory is correct where windows is looking. Your cd rom drive(D:\ for example). in some cases D:\win98 if the windows 98 files are located on your harddrive(preinstalled on the system), it should be looking for c:\windows\options\cabs

Error message: “error code 69 during installation of drivers.”

Cancel and browse the CD rom. double click on the USB98.EXE file located in the WIN98 Folder. after installing, the system will reboot.

System locks or does not shut down correctly with the USB pluged in:

Look in your systems BIOS for **Legacy USB support** and set it to **ENABLED**. A bios update may be necessary if this setting is not present.

Problem: Poor TV picture quality

A poor TV image could be caused if your VGA display adapter does not have

enough video RAM to hold the TV image. In this case, resorts to Primary Surface mode, which lowers image quality. A memory upgrade on your VGA display adapter might fix this problem.

Another possible cause of this problem could be that your VGA display adapter does not support Windows 98 Direct Draw. In this case, you might consider an upgrade to a new Windows VGA accelerator which has Direct Draw support and is compatible with the USB.

A poor video picture might also indicate a bad signal. To verify a bad signal, try one or more of these:

Move your antenna or check your 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.

Problem: TV picture displays a black screen

The TV picture might display a black screen under the following conditions:

Momentary loss of signal

A weak video signal

Channel changing

A scrambled channel

Note: ***Changing channels may cause a temporary black screen. To fix the problem, switch the channel up or down, then return to the original channel.***

The audio might continue to broadcast, even though the video picture displays a black screen. This indicates a strong audio signal and a weak video signal.

A scrambled channel is not a valid channel: Set Primary.exe to DIBDRAW Mode!

Problem: Snapshots don't display correctly

When using a 256 color palette, snapshots display incorrectly. To correct the problem, try one or both of these:

Change your Windows color palette to 16-bit.

Copy the image to a graphics program and save the image as a 24-bit image.

Primary Surface mode & DIB Draw

It is sometimes useful to use a mode of operation of your VGA card known as **Primary Surface mode** or **DIB Draw**. This can be helpful in eliminating VGA compatibility problems, or improving picture quality on some VGA boards when used in some resolutions.

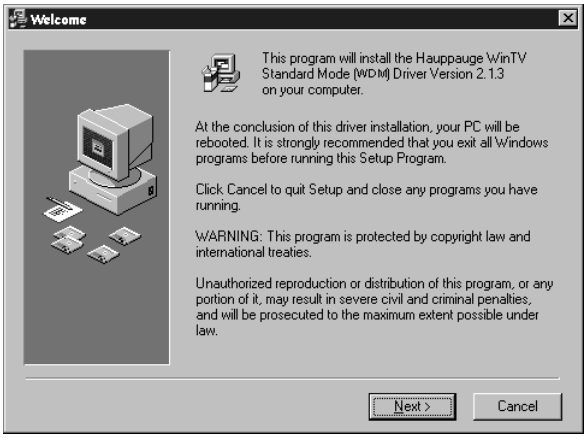
To use Primary Surface mode, run the program "PRIMARY", which is installed with the **WinTV** application. Click **Start/ Programs/WinTV** and then, Click on **Primary**. Click on **Force Primary** or **DIB Draw** then close the program by clicking on the **X**. The Primary program simply makes a setting in the Windows Registry that tells the application to use the Primary mode or DIB Draw mode of operation.

This can be changed at any time to "Allow Overlay" by re-running Primary and clicking **Allow Overlay** or **DIB Draw**.

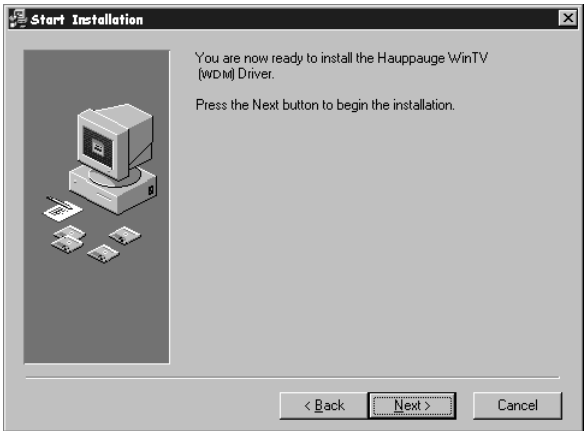
Updating the driver

From time to time, there might be a new **WinTV USB driver** which is an improvement over the existing driver. Driver updates can be downloaded from the Hauppauge Internet Web site (see the front page of this manual for the URL).

The **WinTV USB** update is combined with the driver uninstaller and the driver installer. Once you have downloaded the updated **WinTV USB** driver, you can install the update simply by running the downloaded program. You will see the following message:



Click **Next**.



Click **Next**.

The **Update** program now uninstalls the existing **WinTV-USB** driver, then copies a number of files to your hard disk:

After the Driver installation program has copied all of the files over to your disk drive, you will be asked to reboot:

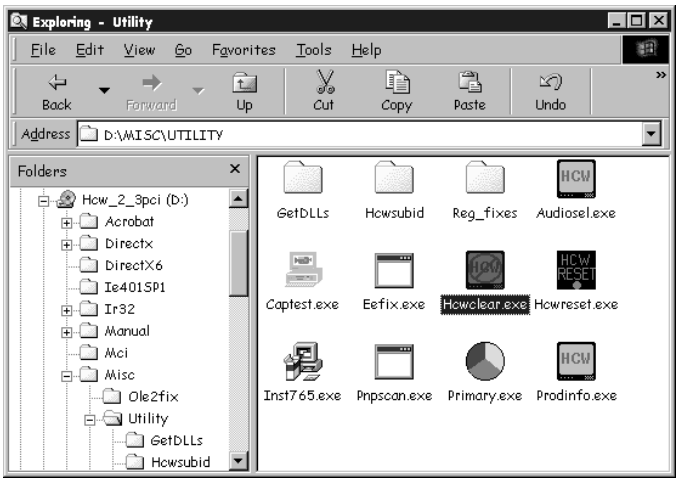
Click **OK** to reboot your PC.

After rebooting Windows98, an automatic installation of the new **driver** takes place. You will see the **New hardware Found** message. After installing a new driver, it is advisable to install the latest applications, including the **WinTV32**,**WinTV2000** and the **radio** applications (if your board has these features).

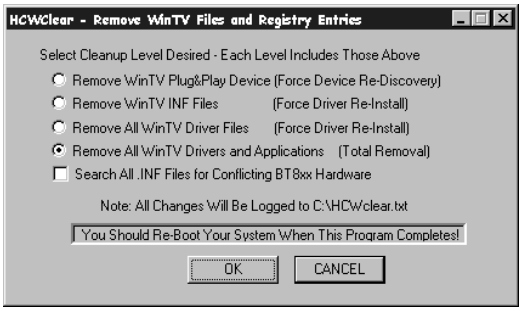
Removing the driver with HCWCLEAR

On occasion, it might be necessary to remove all traces of the driver on your PC's hard disk. To do this, there is a program on the **Installation CD-ROM** called **HCWCLEAR**.

The HCWCLEAR application can be found in the **MISC/UTILITY** directory:

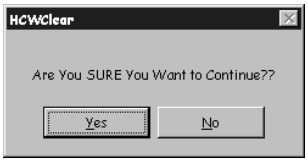


Run **HCWCLEAR** by double clicking on its icon:



Click **OK**.

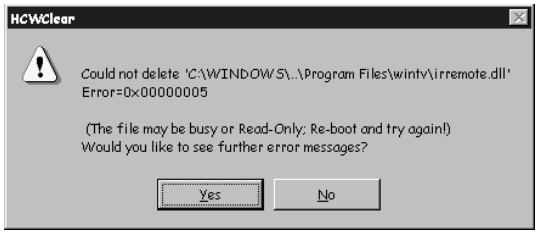
You will then see the following message:



Click **Yes**.

If there are any errors which come up during the running of **HCWCLEAR**, then

it means that there is an application running which is using the drivers. For example, if you see the following error:

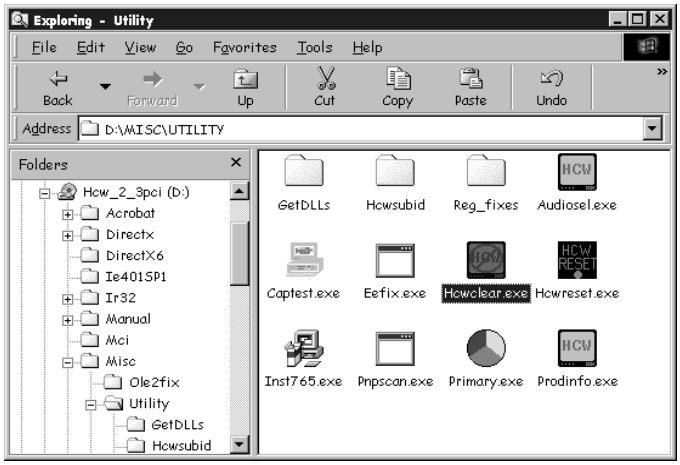


it means that one of the **WinTV USB** driver files in use . You can either ignore the error, or can can double check to make sure there are no applications running in the system that might be using the **WinTV USB** driver. In general, to make sure the re-installation is done correctly, all applications using the **WinTV USB** driver should be stopped before **HCWCLEAR** is run.

Restarting the driver with HCWRESET

A program is included on the **USB** Installation CD-ROM which resets the **WinTV USB** driver. This program can be run if some program has become "hung up" and the **USB** no longer is responding.

The **HCWRESET** application can be found in the **MISC/UTILITY** directory:



Simply double click on the **HCWRESET.exe** icon and the **WinTV USB** driver will be reset.

Technical Support

Technical support telephone

If you have questions regarding installation or compatibility, please contact our technical support staff at:

(631) 434-3197
(631) 434-3198 Fax

USB FAQ-URL

www.hauppauge.com/html/faqusb.htm

Service

If you should need assistance with the installation, operation, or application of your Hauppauge **WinTV USB**, there are several options available to you. Your primary source for information and problem assistance is always your dealer. Should the need arise, contact your dealer for on-site or repair service.

Hauppauge's Technical Support and Customer Service staff can aid in solving many problems. Our service department is available to repair any Hauppauge product. For completion of repair, the product must be returned to our factory.

If this **WinTV USB** is not in working order, your only recourse is repair or replacement, as described above. UNDER NO CIRCUMSTANCES will Hauppauge be liable for consequential damages, including any lost savings, lost profits, or any other damages, caused by the use of the **WinTV USB** or inability to use it, even if the dealer or Hauppauge has been advised of such liability or other claims.

The Hauppauge Limited Warranty

Warranty

Hauppauge Computer Works, Inc. warrants the **WinTV USB** to be free from defects in material and workmanship for a period of 2 years from date of initial retail purchase. We will, at our option, repair or replace a defective product. The limited warranty does not cover any losses or damage that occur as a result of:

- Improper installation
- Misuse or neglect or operation with faulty equipment
- Repair or modification by anyone other than Hauppauge Computer Works or an authorized repair agent

Please complete and return the Warranty Registration Form inserted in this manual. To obtain service under this warranty, contact Hauppauge Computer works at (631) 434-3197, or fax "RMA Department" at 631-434-3198. Please see the return procedure in the "Technical Support" chapter.