

Quick Start

Note: these instructions are particular to the 8500 on my desk, but should probably work with any AV-capable Power Macintosh.

1. Plug a cable into the Video Out on the back of your Power Macintosh. Either the S-VHS or RCA plug works fine.
2. Restart your computer. On the 8500 series, this puts the machine into a dual-screen mode where the video out jacks are treated as extended desktop space. I have been told that the G3 series work differently, although I do not have access to one. One option is to use video mirroring: whatever you see on your main screen will go out to the video out jack. Just be sure that the refresh rate and resolution are compatible with your intended video/TV format. For PAL, this pretty much means anything with a 50Hz refresh rate. For NTSC (the USA, Japan, and some others), a 60Hz refresh rate is what you need. If you can confirm or deny any of the information regarding the G3 systems, please contact me at mwarner1@ix.netcom.com
3. Start Matt's Hack TV.
4. Go to the Monitor menu and select "Video Settings..." In the dialog that appears, change your Source information as appropriate (PAL, NTSC, SVHS, RCA, etc.). You can pretty much ignore the compression settings since Hack TV doesn't store information on your computer—it just plays through. Set your Image settings as desired. Click OK.
5. Go to the Monitor menu, and this time select "Sound Settings..." Here too, the compression settings do not affect the play through image. However, the sound sample rate, stereo, and bit size all have an impact. I recommend setting them to: 44.1KHz, Stereo, 16 bit.
6. Go to the Monitor menu and select "Output Alignment..." This floating dialog will allow you to select the monitor onto which the digitized information will be displayed. Select the monitor with the popup menu in the dialog box. If you get confused, select Monitor and then "Screen Info..." to see what screens are available.

If you get stuck: well, you can always read the rest of these instructions!

Output Alignment Dialog

Use this dialog to set such options as the digitizing window size and location.

Location—Screen Choice

Matt's Hack TV can display the digitized video in a window on either the main screen or, if your computer supports it, on a different monitor, including the “virtual” monitor that represents the video output jacks. The screen on which the window is displayed is controlled by the popup menu.

Location Within A Screen

Once you have selected the monitor on which to display the digitizing window, you may then align the window within that screen. The options are Center, Top Left, Top Center, and Left Center. These options become especially significant when converting from a video standard that is larger than the destination standard. Specifically, standard PAL resolution is 768 pixels wide by 576 pixels tall. NTSC (the standard in the US), however, is only 640 by 480. This means the PAL image has 44% more pixels than what a US-standard television can display. Using the location within the screen, you have some options on how to deal with the difference. See the discussion on PAL to NTSC conversion, below.

Image Size

The image size buttons are pretty self-explanatory: full size is the full video input signal. For NTSC, this is 640x480 pixels. For PAL and SECAM, it is 768x576. Half and Quarter sizes are half and quarter of the full size image.

Blackout Background

With this option, you can hide the underlying desktop with a black color. This becomes especially useful when the video input signal is smaller than the destination video size, such as when converting NTSC to PAL or SECAM.

Hide Menu Bar

Hides the menu bar. This is useful when the output screen happens to be the same screen as the one with the menu bar. For example, you can preview the video on your main screen and get more of a “television” feel, without that darn menu bar. To get it back, press the command key and click the mouse. Or, if the Output Alignment box is open, uncheck the box and click Apply.

Notes on converting from PAL or SECAM to NTSC

The difference between NTSC and PAL or SECAM is significant. NTSC is 128 pixels narrower, and 96 pixels shorter than either PAL or SECAM. In percentages, this means that full-size PAL or SECAM images have 44% more pixels than NTSC. So, how do you deal with the difference? You have two choices. One, you can uniformly shrink the input image to match the NTSC resolution. Depending on your tastes, this can be a very successful method since none of the image is lost. However, it will tend to introduce “jaggies” into the image (diagonal lines look somewhat staggered). Two, you can cut off portions of the image. Which portions to cut off depends on your needs. Matt's Hack TV gives you the option to shift the image without scaling.

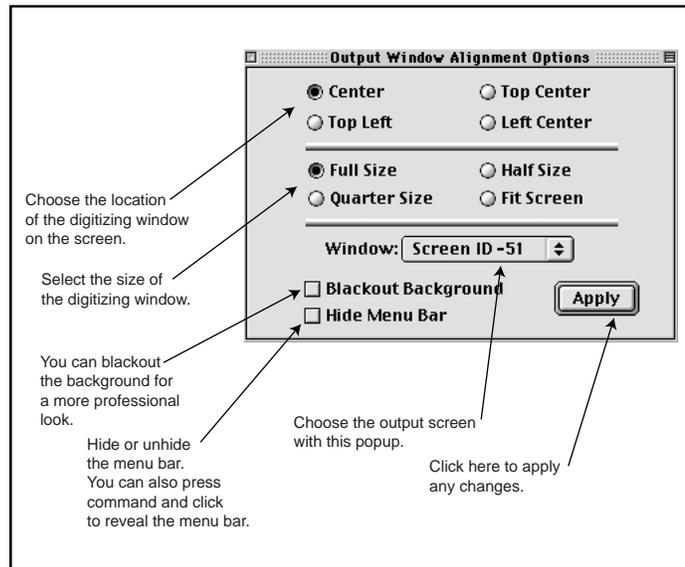


Figure 1. The Alignment Dialog Box

This cuts off different parts of the image, depending on how you shift the image. Image shifting is just image location on the screen. See the section entitled, *Location Within A Screen*. The following graphics give examples of the options.

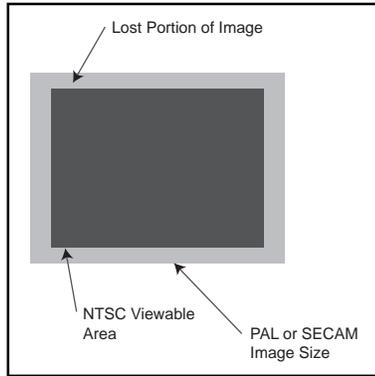


Figure 2. A uniform crop by setting the alignment centering the screen.

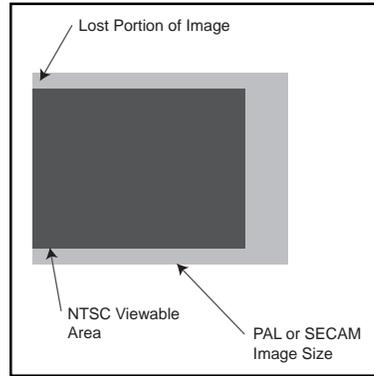


Figure 3. Crop results when the image alignment is set to Left Center.

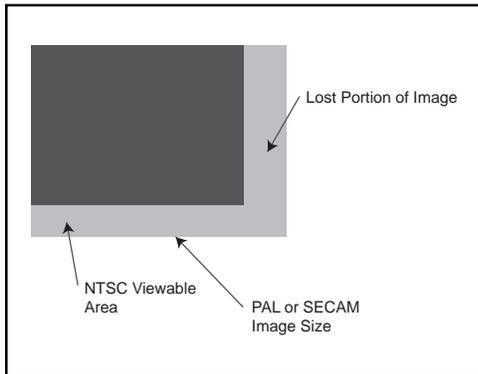


Figure 4. Crop results when the alignment is set to Top Left.

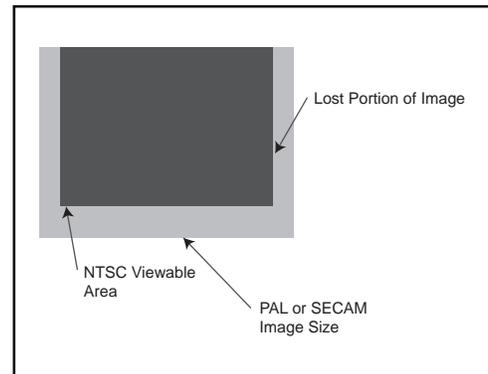


Figure 5. Crop results when the alignment is set to Top Center.

The Clipping Dialog Box

The clipping box allows you to trim the edges from the video image. This is especially useful at the top of the image, where ugly, non-coherent image data is often displayed. The quantities on the boxes are in pixels from the maximum outside edge of the image.

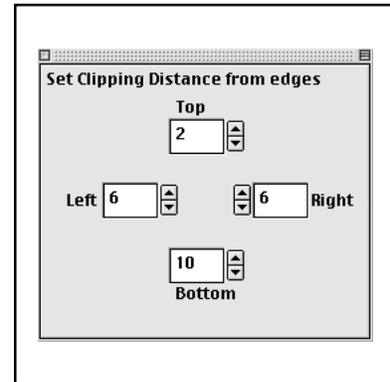


Figure 6. The Clipping Dialog.

The Screen Information Box

This window is purely informational. It tells you how many screens you have attached and their ID numbers. It also tells you where the screen is located with respect to the main screen. If you think something is wrong, this is the first place to check since it will tell you what Matt's Hack TV is seeing on your system.

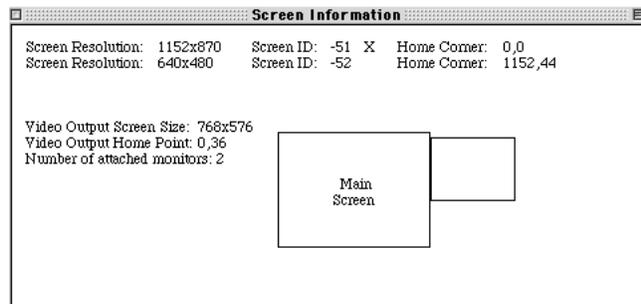


Figure 7. The Screen Information Box.

Adjusting The Video Output Options

The video output screen size that shows up on the video-out jacks at the back of your Macintosh is actually adjusted with the Monitors & Sounds control panel. When you open that control panel, you will see the familiar settings window for your main screen. However, what you may not know is that there is a very similar window that appears on your output screen. But, unless you have a television or monitor attached to your video out jacks, you won't normally see or be able to change the settings.

Here's how to do it: connect you video in directly to your video out and start Matt's Hack TV. Change the video settings to PAL. Now open the Monitors & Sounds control panel and go to the arrangement section where you can see the arrangement of the main screen with respect to the video out screen. Note the location of the video out screen (probably just to the right of the main screen). Collapse the main window for the control panel by clicking its window shade button (top right). In the Hack TV window, you should see another window with settings. Move your mouse off the main screen in the direction of the video out screen (again, probably to the right). Watch the Hack TV window—it's the only way you'll be able to see what you're doing. Change your output settings here to whatever you'd like and close the control panel windows when you've finished.