SWINGER
WEBBsoft TECHNOLOGIES

Digital Vs Analog Capture

Swinger Information Sheet No. 100

Introduction

The cost of digital and analog capture devices is similar. However, when you look closely at the captured image quality, the performance/cost ratio comes out heavily in favor of digital capture. This page shows single frame examples of both digital and analog capture. These images have not been modified in any way. To clearly see the differences enlarge the images on this sheet by zooming the page.

Digital Video Capture (Firewire)

Digital video cameras allow the digital transfer of video through the IEEE-1394 interface (also called Firewire or iLink). This is a huge advantage because unlike analog capture, digital transfer is lossless. To take advantage of this technology, your computer needs Firewire hardware. Whilst some computers have this built-in, for those that don't the necessary hardware is quite inexpensive and available for both desktop and notebook computers. Every version of Windows from Windows 98 second edition onwards has Firewire drivers built in.

Typical digital capture from Firewire interface- 720 by 576 pixels.

Typical analog capture with good capture card– 384 by 288 pixels.

Analog Video Capture

Until recently, video capture has required the use of an analog capture card. This card takes the composite or S-video output from a video camera and converts it into a digital form that a computer can understand and process. Even the best capture cards (which can be quite expensive) degrade the image to some extent. Because of the technical difficulties involved, many analog capture cards only capture one of the available video fields. This results in a frame size of only 384 by 288 pixels, about a quarter of the 720 by 576 pixel frame delivered by Firewire.

USB Capture

Most video cameras are capable of producing high image quality. To preserve this quality when transferring the data to your computer, the data rate of the interface used needs to be adequate. Some cheap capture devices employ the USB interface which is supplied on most computers. However, this interface is simply not fast enough to transfer quality video. To compensate, either the image size has to be reduced, the frame rate has to be reduced, or the color quality has to be compromised. Often it is a combination of all three. If you want to take advantage of the high image quality available from your video camera, a USB capture device is not a real option.

Typical analog capture with poor capture card– 208 by 240 pixels.

5 MacGregor Street East Malvern, Victoria, 3145, Australia
Phone: +61 3 9571 9679 Fax: +61 3 9571 6591
www.swinger.com.au info@swinger.com.au