

ImpactVCB

Video capture board with live video overlay

The ImpactVCB is a new low cost family of video capture boards which can be used as the heart of a live video display, video capture, streaming video or video conferencing solution.

ImpactVCB Specifications

Overview

The ImpactVCB board provides image capture from a desk top CCD camera or other analog input. Impact VCB board is a small 1/3 height PCI board based on the Brooktree 878A video digitizer chip. It requires a bus-master PCI slot. A VGA card with Direct Draw 3 (or later) capability is required for Live Display. Operating system must be Window 95, Windows 98, Windows ME, NT 4.0, Windows 2000. Drivers are provided with the video capture card. Incoming image is digitized using high quality 4:2:2 video sampling and displayed in a window on the PC's VGA screen. The image is transmitted directly by the ImpactVCB into main system memory or the memory of the VGA adapter for high performance results.

The ImpactVCB comes in several different I/O configurations, with up to two composite video inputs, an s-video input, power output (primarily to drive a CCD camera) and an optional audio input.

A Programmers Toolkit is available for the ImpactVCB which provides both DLL and OCX support for applications requiring the ImpactVCB's video capture or video display. Applications can be developed in C or Visual Basic.

To the right is a picture of one of the many ImpactVCB configurations, showing the attachment to an analog video camera.



Video Capture

Video from any analog source (composite or S-Video) can be captured as either still frame video images or motion video. Composite video inputs are provided as female RCA jacks, while S-Video uses standard 4-pin DIN connectors. The ImpactVCB comes with a VFW capture driver (Video for Windows) and a WDM driver for use in Windows95, 98, Me, 2000 and NT 4.0 Typical capture rates range from 15 to 30 fps depending on system configuration.

Live Video Display

The ImpactVCB can display live video from NTSC or PAL video sources in a resizable window on the PC screen. The digitizing of the analog video signal and the resizing of the video image is performed by hardware on the ImpactVCB, thereby not slowing down the CPU. After video is digitized and resized, the digitized video image is drawn by the ImpactVCB directly into the memory of the PC's VGA card. This uses a feature of Windows called Direct Draw, and the ImpactVCB can be used with most VGA cards which support Direct Draw 5 or higher. This technique is used on Windows95, Windows98, WindowsME, Windows2000 and WindowsNT 4.0

Serialization

Some ImpactVCB models have a unique serial number burnt into an EProm on board. The serial number is read either through the Hauppauge WinTV Programmers Toolkit or can be read via Windows Control Panel. In addition to the serial number, these models of ImpactVCB have its I/O configuration burnt into the EProm.

Hardware requirements

The ImpactVCB capture board is designed for all Pentium PCs that are 100 MHZ (or faster), running Windows 95, Windows98, WindowsME, Windows2000 or Windows NT 4.0 with Service Pack 3 installed. A 90MHZ Pentium processor is recommended for optimum performance.

The ImpactVCB requires a bus-mastering PCI bus slot.

Your PC's VGA graphics adapter must have WINDOWS Direct Draw support. All NVidia, 3DFX and ATI graphics cards have this support. Some common adapters are: S3 Trio64+, Trio 32/64, Vision 968 and ViRGE Cirrus Logic 5446, Matrox Millenium and Mystique, ATI Mach 64 and Rage series of graphics display adapters, Hercules Dynamite 128 (and other ET 6000 based VGA cards) work well.

The capture board also requires 2MB of free hard disk space, and 2 MB of RAM (Windows 95 or Windows98) or 4 MB of RAM (Windows NT 4.0).

For Audio Capture

Audio is not processed on the board. Audio can be input directly to the sound card for digitizing and further processing. On ImpactVCB model 64402 (which includes audio input), the audio is routed to an on-board analog/digital converter, and the digitized audio output is routed to the I2S port on the 878A chip. The digitized audio can be read via software.

For Video Conferencing

The ImpactVCB can be used for Internet video conferencing using the supplied Microsoft NetMeeting. Also, most other video conferencing applications which require a Video for Windows capture driver to digitize video can be used with the ImpactVCB. Since all of the digitizing and image movement are done by the ImpactVCB without requiring the systems CPU, you get the maximum performance from your PC.

Hardware required for video conferencing:

In addition to the ImpactVCB, a video camera, NTSC or PAL (power is available from the board or optional AC power adapter), is required. A 16 bit, 8 KHZ full duplex codec sound card is required for digitizing the audio. A microphone and speakers are also required.

The ImpactVCB driver CD-ROM includes:

Drivers: Video for Windows capture drivers for Windows 95, Windows98, Windows NT 4.0 with Service Pack 3. In addition, a Windows98 WDM driver for Windows98, Windows2000 and WindowsME is included. The drivers have been WHQL certified for Windows 98SE, Windows2000 and WindowsXP.

The ImpactVCB driver CD-ROM comes bundled with Microsoft's NetMeeting for Internet videoconferencing. It functions with the Video for Windows capture drivers. NetMeeting software enables interactive white board and file sharing in addition to video conferencing. It is compatible with H.323 (telephone over Local Area network).

Accessory applications included: Hauppauge's SnapShot (single image frame grabber program) and Hauppauge's Capture application for creating AVI movies. On-line Installation Guides and Quick Start Guides are also available.

Compliance:

EMI treatment for FCC Class B and European CE (EN55022, EN55013 and EN55024) and is UL listed.

Product Availability:

Hauppauge has a variety of ImpactVCB boards, cameras and kits available to support your image capture, video image display, industrial image processing and video conferencing applications worldwide. Please note that our technical support organization is available to provide technical information you require to support your applications. Special models are available which use BNC connectors.

All ImpactVCB models Support both PAL and NTSC compatibility (referred to as "dual crystal").

Here are some common models (please order by model number):

| Product code | Model # | Composite video inputs | S-Video inputs | 5V power output | Audio input |
|--------------|---------|------------------------|----------------|-----------------|-------------|
| 64405 | 00558 | 3 | 1 | none | none |
| 64041 | 00556 | 1 | 0 | 1 | none |
| 64241 | 00581 | 1 | 1 | 1 | none |
| 64201 | 00453 | 1 | 1 | none | none |
| 64402 | | 2 | 1 | none | 1 |