

FlashBusTM MV^{PRO}

PCI VIDEO FRAME GRABBER

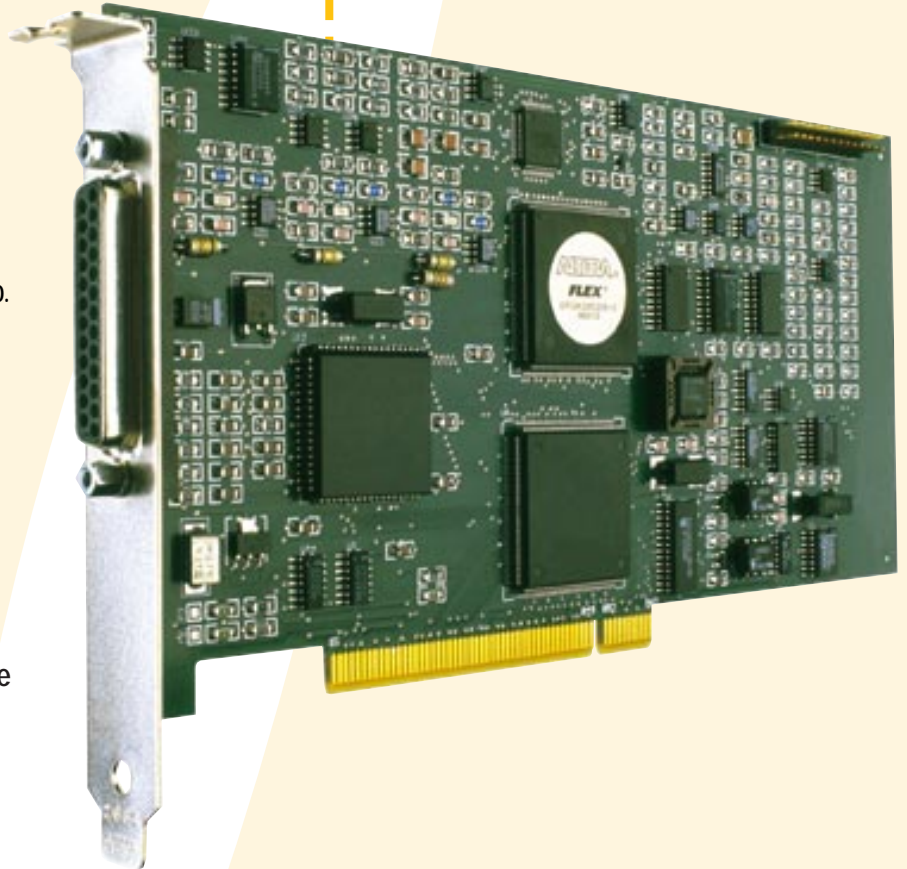
Integral Technologies' ambition was to give OEMs a competitive advantage in the machine vision industry with a PCI video frame grabber that combines affordability, versatility and the highest quality. The result is the FlashBus MV Pro.

Dual simultaneous video inputs, usually an expensive option, are a standard feature on FlashBus MV Pro. Integral's frame grabber then goes even further. It handles composite, RGB, S-Video and RS 170 sources.

Creating crystal clear images is the mission of FlashBus MV Pro. It supports 60 fps **progressive scan cameras** and virtually eliminates the blur of moving objects.

Maintaining the Integral tradition of excellence in both hardware and software, FlashBus MV Pro is **easy to install and operate**. Integral continues its industry-leading quest for **full compatibility** — this bus-mastered board works with nearly any machine. The Software Developers Kit is designed for Microsoft Windows 3.1, 95, 98, NT and for OS/2. Should technical support be needed, Integral's team of software engineers gives you immediate attention.

Quality, versatility and affordability — the distinguishing characteristics of FlashBus MV Pro.



APPLICATIONS

- Machine Vision
- Scientific Imaging & Image Analysis
- Law Enforcement
- Security & Access Control
- Biometric Identification

ALSO AVAILABLE:

FlashBusTM MV^{lite}
FlashBusTM MV^{lite}

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FlashBus™ MV PRO

PCI VIDEO FRAME GRABBER

FlashBus MV Pro is a high-speed, low-cost, PCI bus-mastering frame grabber designed to capture 8 bits-per-pixel monochrome and 24 bits-per-pixel color video in real time to system memory. FlashBus MV Pro was specifically developed for applications requiring very high quality, high-speed image capture such as machine vision, inspection, scientific imaging, medical imaging and other business applications.

Bus Mastering Performance

Taking advantage of its high-speed PCI-based bus-mastering capabilities (up to 132 Mbytes/s), FlashBus MV Pro delivers consecutive frames of video in real time into system memory while the CPU is free to operate on other applications.

Dual Stream Video and Programmable Input MUX

FlashBus MV Pro has two channels that support the DMA transfer of dual real-time video streams directly to the system or VGA memory. Both streams of video can be transferred and captured simultaneously into memory, enabling very high-speed image acquisition and processing by the host CPU. A programmable video MUX enables selecting the desired video input from a wide variety of RGB, Composite, S-Video and RS170 sources.

High Quality Video Capture

FlashBus MV Pro separates the RGB and RS170 video path from the composite and S-video circuits to produce extremely accurate, high-quality imaging. The superior analog circuits provide wide bandwidth, high contrast and extremely sharp detail. Very low pixel jitter ensures accurate representation of horizontal detail. Input LUTs provide maximum video control.

Progressive Scan Camera Support

FlashBus MV Pro has support for the capture of non-interlaced video from progressive scan cameras, which eliminates blur seen in images of moving objects captured and transferred by standard CCD cameras. FlashBus MV Pro supports progressive scan, dual channel progressive scan, long-term integration, asynchronous reset and other unique and standard camera features.

External Triggers

FlashBus MV Pro accepts up to eight input triggers so that image acquisition can be synchronized to external events. Interrupt and polled input triggers are available to control external events in a technique best suited for application execution. FlashBus MV Pro also provides up to eight TTL level output triggers for controlling external devices. It contains an on-board programmable sync generator for external camera genlock and AVR support.

Programmable Intelligence

FlashBus MV Pro incorporates on-board, programmable intelligence to guarantee accurate strobe synchronization and robust trigger and serial I/O. Programmable intelligence relieves the host CPU of the details of counting sync or servicing serial interrupts. Bit level control of the I/O triggers and the serial port provides real-time control. FlashBus MV Pro supports hardware video capture with no CPU intervention.

Software Developers Kit

A comprehensive Software Developers Kit provides programmable access to the features of the FlashBus MV Pro hardware architecture. The kit includes DLLs for Microsoft Windows 3.1, 95, 98, NT, IBM OS/2 DLLs, TWAIN and MCI drivers, a Video-for-Windows driver and sample applications with source code.

Included with FlashBus MV Pro is FBG™, a Windows-based application that automates the capture of video images with full software control of most industry-standard video cameras.

CPU and Software Compatibility

FlashBus MV Pro provides a PCI 2.1 interface having both slave and master mode compatibility. FlashBus MV was designed to be fully compatible with Pentium, Pentium Pro, MMX and Pentium II computers. FlashBus MV Pro is fully software compatible with the entire line of FlashBus products and runs all of FlashBus software.

SPECIFICATIONS

Analog Video Inputs

- (6) Composite, (2) RS170 with LUT, (1) RGB, (3) S-Video
- 25 pin connector
- NTSC and PAL software selectable

I/O Control

- 4 programmable 12 bit D/A outputs (0-10 volts DC)
- 2 optically isolated output triggers for flash interface
- 8 TTL input triggers
- 8 TTL output triggers
- On-board programmable sync generator for external camera genlock and AVR support.

Video Decoder

- Accepts NTSC and PAL RGB, Composite, S-Video and YUV
- Genlocks to any NTSC/PAL video source including cameras, VCRs, laser discs and still video players
- 24/16/15/8 bit video digitizing
- Programmable digitizing resolutions for RGB, CV, S-Video and YUV (from 10 MHz to 15 MHz)
- Square pixel digitizing resolutions for NTSC (12.27 MHz at 640 x 480) and PAL (14.75 MHz at 768 x 576)
- Digital control of offset, gain, brightness, contrast, hue and saturation
- Software programmable offset and gain independently on R, G and B
- EEPROM for storing configuration and calibration settings
- Dual channel 60 fps progressive scan camera support

Video Format

- 24/16/15 bit RGB (or) YUV 4:2:2 software selectable
- Y8 monochrome

RGB Video Pixel Format

- 888 - 16.7 million colors
- 565 - 65 thousand colors
- 555 - 32 thousand colors
- 8 - 256 level monochrome

Video Throughput Performance

- Full size, full speed video delivery to and from system or VGA memory
- Full bandwidth PCI bus master read and write (up to 132 Mbytes/s)
- Two simultaneous video DMA channels

Video Scaling Processor

- High quality still frame video capture
- Smooth, high quality interpolated scaling is performed on video in X (horizontal) and Y (vertical) directions
- Supports hardware cropping

Video Output Display

- Video-in-a-window screen resolution to 640x480 (768 x 576 for PAL)
- 24/16/15-bit video displayed, up to 1600x1200 VGA desktop
- Selectable refresh rate: 30 frames/second, 60 fields/second, or 30 fields/second

External Camera Control

- Software controllable, optically isolated, universal strobe interface
- On-board serial interface for camera/external device control
- 12 volt DC fused power output, resettable and on/off control
- H,V, PCLK camera inputs

Software Developers Kit

- MS Windows™ 95, 98 and NT display drivers
- MS Windows™ 95, 98 and NT DLLs
- MS Windows™ MCI and Video for Windows (AVI) drivers
- Microsoft® DirectDraw™ support
- OS/2 display drivers and DLLs
- TWAIN driver
- Sample applications with source code
- MS Windows™ FBG video capture application

Video Input Cables

- Standard RGB, Composite, S-video and RS170 cables
- Optional I/O header cables and connector brackets
- Custom cables and connector pinout available upon request



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