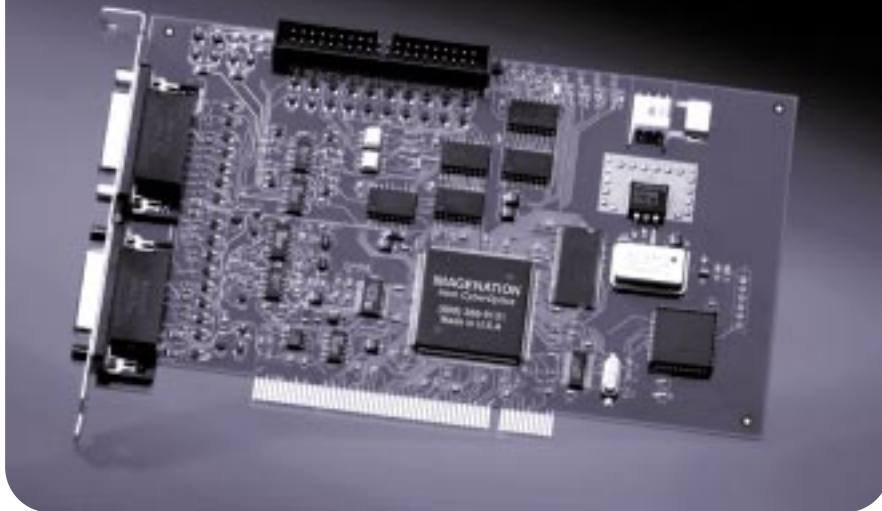# Imagenation PXR800 Real-time Control Frame Grabber

The Imagenation PXR800 provides everything you need to grab the exact image you're looking for, at the precise moment you want, and deliver it safely to system memory. That gives you the kind of real-time control and imaging accuracy essential to so many applications.

Imagine. A precision monochrome frame grabber focused on real-time control.

Meet the Imagenation PXR800: a premium standard analog, monochrome frame grabber offering real-time control – the ability to deterministically synchronize events associated with image acquisition for timely, totally reliable system performance. Superior input/output control makes it possible, enabling the ability to trigger camera reset and also to direct separate strobes and exposure. General purpose input/output lines enable control of application components outside of image acquisition, while flexible memory allocation and large on-board memory assure reliable image grab.

The image you want is the image you get. With the Imagenation PXR800, precision timing and synchronization between camera, lighting and grabber assures predictable, problem-free image acquisition. The ability to switch cameras on a trigger or to skip certain fields permits the selection of distinct images from a video stream. Another exclusive feature, ImageInfo, enables you to "stamp" images with key status information, so you can confirm you've gotten what you want, on the spot. Dual-mode direct memory access with 8MB of on-board memory virtually guarantees image grab: burst DMA enables acquisition and transfer of an entire image across the PCI bus in about 4 milliseconds, and incremental DMA provides access to data the instant it is available. Double or continuous buffering options allow for the capture of a new image without destroying the previous captured image.

Better control, greater flexibility. The Imagenation PXR800 supports RS170, CCIR, interlace, progressive scan and resettable cameras, and is capable of working with up to 4 multiplexed cameras, each able to use an optically isolated trigger to monitor discrete events in different locations along the process. A separate camera extender board enables implementation of 3- and 4-camera applications, simplifying system set up by requiring the use of only a single cable per camera.

Total support gets you up and running, fast. The Imagenation PXR800 includes a variety of sample applications that allow users to quickly grab and display images in real-time, use multiple cameras or boards, handle the LUT, control offset and gain, and set a region of interest. Plus, our technical support engineers are on hand to provide assistance throughout your development process. Current software and examples are also available at the Technical Support page of the Imagenation product web site at www.imagenation.com.

Imagenation PXR800 Specifications

Bus	PCI bus master design for real-time image capture
Input composite video format	Monochrome, RS-170 (NTSC), CCIR (PAL), progressive scan and resettable
Capture time	RS-170 (NTSC): 1/30 second per frame; CCIR (PAL): 1/25 second per frame
Input video	Software selectable termination (75Ω or 10K Ω)
Resolution	RS-170: 640 x 480 pixels (maximum 768 x 486 pixels); CCIR: 768 x 576 pixels; 256 gray level, 8 bits
Sampling jitter	± 2.6 ns with 1-line resync from reset; 0 using pixel clock input
Video noise	≤ 0.5 LSB (least significant bit)
Video multiplexing	Up to four video inputs (switch on trigger)
Color expansion	8-bit monochrome expanded to 16 and 32-bit gray-scale for direct transfers to display memory
Camera timing engine support	Inputs: Vsync, Hsync, WEN, Pixel clock Outputs: Vdrive/Standard/Programmable, Hdrive, Exposure1, Exposure2, Strobe
External trigger	Four optically-isolated trigger inputs
Strobe and exposure output	One strobe output, two exposure outputs (up to four pulses, up to 59.99 min)
General purpose input/output (I/O)	Four TTL inputs, four TTL outputs
Image acquisition triggering	Wait m fields (allows synchronization of image capture with strobes and exposures); Video (continuous vertical sync trigger); Hardware; Software; or logical combinations of Video, Hardware and Software triggers
On-board memory	8MB image FIFO memory
Software programmable look up table (LUTs)	256-byte programmable
Power	+ 5 VDC, PCI, 700 mA
Camera power	+ 12V at 1A for four cameras
Operating temperature	0° C to 60° C
Warranty	One year limited parts and labor
Supported operating systems	Win 98, 98-SE, 2000, ME, NT4, XP
Supported languages	Visual C++
Third party image processing support	Halcon, Common Vision Blox

Imagenation PXR800 Ordering Information

PXR800	Analog Monochrome Frame Grabber
PXR801	Camera Extender Board (for 3 - 4 camera applications)
CB-081	Full Use Cable for PXR800
CB-082	Video/Trigger Only Cable for PXR800

Contact us for more information or to discuss your application.

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Key Features

Supports RS170, CCIR, interlace, progressive scan and resettable cameras

± 2.6 ns pixel jitter and ≤ 0.5 LSB (least significant bit) of video noise for precise image digitization

Superior I/O control for precise synchronization of cameras, strobes, triggers and exposure

4-channel camera timing engine plus pixel clock input

Flexible image acquisition engine includes 8MB of on-board memory, dual mode DMA and continuous buffering that enables guaranteed grabs, full (30 fps) frame rates and enhanced real-time performance by reducing dependencies on system latencies

ImageInfo feature "stamps" images with complete image acquisition status information

User-friendly camera interface with 4 identical high-density DB-26 connectors (2 on board, 2 on camera extender board), each containing all camera-specific signals including video input, Hsync/Hdrive, Vsync/Vdrive, pixel clock input, 2 exposure outputs and common signals (4 TTL general purpose inputs and outputs, + 12V camera power)

Separate camera extender board for easy, cost-effective cabling and set-up for 3- and 4-camera applications

Flexible memory allocation through scatter/gather technology

Programmable linear input offset and gain

Third party image processing software support

Verified to FCC Part 15 Class A requirements. Full compliance to CE EMC standards (EN-55022, EN-55024, CISPR-22)

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