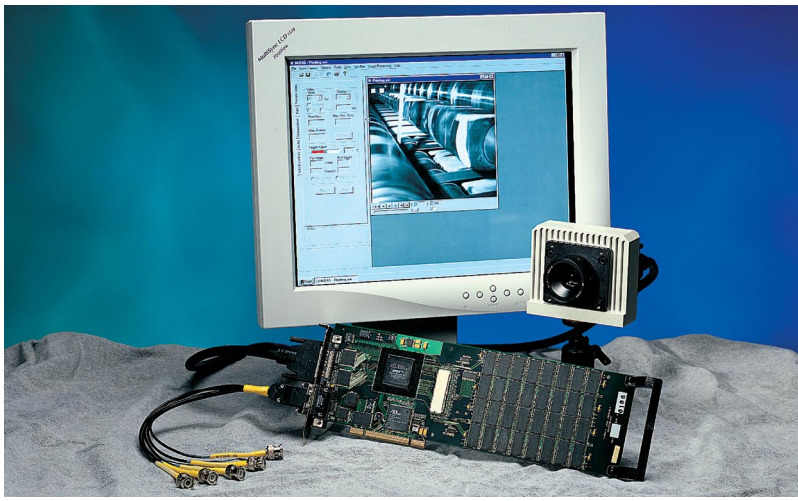
MotionPro®

High-Speed CMOS PCI Camera

Redlake's *Motion*Pro high-speed CMOS PCI camera combines an advanced highspeed, mega-pixel resolution CMOS camera with the features you need for meaningful high-speed motion analysis on your PC. Designed as a peripheral for capturing high-speed digital images directly into the PC, the *Motion*Pro system consists of a high-speed camera, full size single-slot PCI camera control and frame storage board (with up to 6 GB onboard memory), user interface, and easy-to-use analysis software. Up to four *Motion*Pro systems can be operated in a single PC, providing multiple synchronous views of a high-speed event.

Video capture using *Motion*Pro cameras may be initiated via software or a wide variety of external triggers including optical, acoustic, electrical, and motion-controlled devices, as well as simple hand-held switches. Flexible recording options offer several recording modes allowing the user to either use the memory as a circular buffer into which specified numbers of pre- and post-trigger frames may be recorded, or to divide the memory into a segmented buffer for multiple session operation.

Motion analysis software completes the system functionality with many valuable features including angular, linear, velocity and rotational measurements as well as tracking multiple points over multiple frames. The *Motion*Pro also has a lens calculator tool that computes lens selection, depth of field, magnification factor and motion blur for any setup.



SNAPSHOT

- **High-speed, high-resolution CMOS Sensor with full-frame resolution of 1280 x 1024 pixels**
- **Recording rates up to 10,000 frames per second**
- **Color or monochrome**
- **Flexible triggering and recording options**
- **Intuitive Camera Control and Motion Analysis Software to control up to four MotionPro cameras**

APPLICATIONS

- **Vehicle impact testing (VIT)**
- **Airbag deployment**
- **Research, design and test**
- **Production line diagnostics**
- **Range, aerospace and ballistics**

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PERFORMANCE SPECIFICATIONS

Sensor Array	Ten Channel 1280 x 1024 pixel CMOS Sensor
Image Resolution	Up to 1280 x 1024. Pixel depth is 8 bits (mono), 24 bits (color)
Sensitivity	User-accessible gain controls allow sensitivity and linearity control
Models	500 - up to 500 frames per second 2000 - up to 2,000 frames per second 10000 - up to 10,000 frames per second
Shutter	Global Electronic Shutter with exposure times from 2µ seconds to 1/frame rate in increments of 2µ seconds
Lens Mount	Standard C-mount, optional F-mount
Camera Head Size	4.15"W x 3.60"H x 1.67"D (105.4 x 91.44 x 42.42mm)
Controller Board	Full size PCI 2.2 board (occupies one slot)
Cable	5 meter length
Trigger	
Electrical Properties	TTL (5V-tolerant) compatible signal User selects logical high, low, positive edge, negative edge or switch closure
Variable Positioning	The trigger position (i.e. the number of pre- and post-trigger frames) is selectable in 1% increments between 0 and the frame capacity -1
Frame Sync	Any number of cameras may be synchronized either to a "master" camera or to an external source Accuracy of synchronization between cameras is within 2µ seconds
Exposure Out	An exposure out signal is available for synchronizing a strobe or another device This signal remains high (3.3V) while the shutter is open
Recording Modes	
Circular Buffer	Records images into circular buffer until triggered, then user- selected number of post-trigger frames (from 0 to total number of frames in buffer -1) are recorded
Multiple Session	
Burst on Trigger	User-selected numbers of frames are recorded every time the camera receives a trigger until memory is full
Record on Trigger	Records whenever the trigger signal is "true" until the memory is full
Frame Storage	
Standard	Up to 2 GB: 1635 full frames
Enhanced	Up to 4 GB: 3273 full frames
Maximum	Up to 6 GB: 4912 full frames
Playback Rates	User selectable variable playback
Multi-Camera Control	Up to four cameras may be operated on one PC
Operator Environment	Point & click environment for Windows 2000 and Windows NT 4.0 SP6
Reticle	Pixel coordinates of the reticle position are always displayed on screen
Analysis Features	Microsoft Excel compatible features including angular, linear, velocity and rotational measurements Track multiple points over multiple frames. Also has a lens calculator tool that computes lens selection, depth of field, magnification factor and motion blur.
File Formats	AVI, BMP, JPEG, TIFF
PC Minimum Platform	Celeron 800 MHz, 1024 x 768 display resolution, 128 MB RAM, 10 GB Hard Drive, 64 MB video RAM, CD-R Drive, 3.3V PCI 2.2 compliant motherboard, at least one empty full-length PCI slot, Windows NT or Windows 2000

Note: Specifications are subject to change.

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