

High-speed PCI Frame Grabber for PC-based Machine Vision

The Cognex MVS-8504 machine vision frame grabber is designed for support of up to four independent high-speed analog cameras that utilize the latest progressive scan CCD sensor technology. In addition to supporting the new generation of high-speed analog cameras, this half-slot frame grabber offers backwards compatibility with standard speed analog interlaced and progressive scan cameras. As a result, the MVS-8504 is ideally suited for equipment builders and factory automation engineers currently migrating to the new generation of 60 frame-per-second standard resolution analog cameras. The MVS-8504 is equipped with the highest performance machine vision software to meet the speed, accuracy and reliability requirements of the most demanding applications.

Fast Image Transfer in Parallel with Acquisition

The MVS-8504 frees up the host processor of the PC for image analysis by providing high-speed image transfer to system memory. A 32-bit/66 MHz bus architecture allows the frame grabber to meet high-bandwidth requirements even in time critical applications, while also maintaining compatibility with standard PCI 32-bit/33 MHz as well as higher-speed 64 bit/66 MHz or PCI-X busses. Independent Direct Memory Access on each acquisition channel allows processing of one image while other images are being captured.

Support of Mixed Camera Formats

Four completely independent channels allow the MVS-8504 to manage asynchronous or simultaneous acquisitions from up to four analog cameras that differ in format. As a result, the MVS-8504 supports any mix of high-speed, high-resolution, progressive-scan, rapid-reset and legacy interlaced cameras.



The MVS-8504 frame grabber supports up to four standard or high-speed analog cameras in a variety of formats.

In addition, the MVS-8504 was designed to meet a wide range of high-performance acquisition requirements in OEM and system integrator applications. Flexible acquisition configuration options allow users to mix progressive scan and interlaced cameras, utilize dual-tap and color acquisition, or even accommodate independent color and monochrome channels.

High-Performance Vision Tools

The MVS-8504's software tools are based on Cognex vision technology deployed in over 175,000 vision systems worldwide. These vision tools are designed to locate objects or patterns, measure their geometric properties, detect defects, and read characters and codes — with reliable, accurate, and repeatable results. Additionally, these tools have been optimized to take advantage of the processing power of the host CPU.

Advantages

- ▼ Independent channels provide mixed camera format support for asynchronous or simultaneous acquisitions
- ▼ Highly configurable analog acquisition system ensures the highest performance for a wide range of applications
- ▼ 32-bit/66 MHz bus architecture and 16MB FIFO provides fast and reliable image transfer
- ▼ Cognex software tools provide the most reliable, accurate, and repeatable results

Choice of Software Development Environments

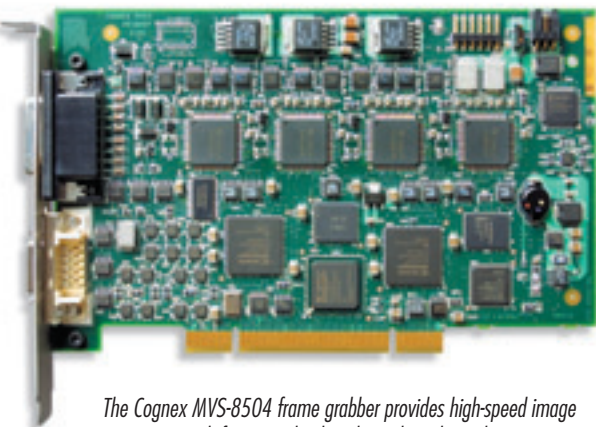
Because there are a wide range of experience levels and development preferences among machine vision developers, Cognex offers a choice of software development environments with which to build vision applications.

VisionPro Machine Vision Software Suite

VisionPro™ is a suite of COM/ActiveX-based machine vision software tools for the Cognex MVS-8504 with the power and flexibility of advanced programming, and the ease of development provided by graphical programming environments such as Visual Basic. This enables OEMs and system integrators to quickly develop and deploy powerful machine vision applications. Additionally, the COM/ActiveX-based architecture enables VisionPro applications to easily include third-party components for process control, I/O, and machine control.

CVL Software Developer's Kit

The CVL® (Cognex Vision Library) Software Developer's Kit enables users to develop powerful, fully customized C++ solutions for a variety of machine vision applications. With CVL, users can modify the sequence of vision processing operations, define custom tools, and link vision tools together. The Developer's Kit also enables users to perform a variety of specialized vision functions such as pixel-level processing and complex image buffering.



The Cognex MVS-8504 frame grabber provides high-speed image acquisition with four completely independent channels.

Hardware Specifications	
Physical Configuration	<ul style="list-style-type: none"> • Half-slot 32-bit/66 MHz PCI card (PCI short card) • 4.2 x 6.6 inches (106.7 x 167.6 mm) width x height
PC Requirements	<ul style="list-style-type: none"> • 166 MHz Pentium class CPU or greater • An AGP-based video card with at least 8MB of memory, operating in a minimum of 256 colors • One available +5V or +3.3V PCI expansion slot • Microsoft Windows XP or 2000 operating system
PCI Bus	<ul style="list-style-type: none"> • 32-bit/66 MHz PCI card • Operates at 66 MHz in a 66 MHz slot • Operates at 33 MHz in a 33 MHz slot • Compatible with 3.3V and 5V PCI slots
Memory	<ul style="list-style-type: none"> • 16MB FIFO
Video Input	<ul style="list-style-type: none"> • 4 independent analog camera channels • Supports standard and high-speed analog • Supports high resolution, rapid reset, progressive scan, and interlaced cameras • Supports mixed camera formats • Supports gray scale and color acquisition • Master-slave capability • Selectable anti-aliasing filter for higher image quality • Supports external sync • Single tap or dual tap acquisition
PC-based Display	<ul style="list-style-type: none"> • PCI bus master • Four independent DMA channels • DMA to PC memory in parallel with acquisition • Color graphics overlay • Image decimation for display
Parallel I/O	<ul style="list-style-type: none"> • 16 bi-directional TTL I/O • 4 lines can be configured as trigger inputs • 4 lines can be configured as strobe outputs • Opto-isolation available via a breakout box
Power Consumption	<ul style="list-style-type: none"> • 5V@ 2.5 A normal operation (4 A max. instantaneous) • +12V@ 0.1 A normal operation (0.2 A max. instantaneous) • -12V@ 0.1 A normal operation (0.2 A max. instantaneous) • Dissipates approximately 14 watts
Environmental	<ul style="list-style-type: none"> • Operating temperature: 0 to 50 degrees C • Humidity: 10 to 90%, non-condensing