

Information about hardware and software requirements for PCs used with current Cognex Vision Software (CVL and VisionPro) and hardware.

Category	Minimum Requirements <input checked="" type="checkbox"/> Required <input checked="" type="checkbox"/> Supported but not required <input checked="" type="checkbox"/> Not supported	Cognex Recommends <input checked="" type="checkbox"/> Recommended for best performance <input checked="" type="checkbox"/> Avoid for best performance	Configuration Notes <input checked="" type="checkbox"/> Information
CPU	<input checked="" type="checkbox"/> 1 GHz Pentium Processor <input checked="" type="checkbox"/> Multi-core processors	<input checked="" type="checkbox"/> At least a 2 GHz Multi-core processor <input checked="" type="checkbox"/> 512KB or more L2 cache	<input checked="" type="checkbox"/> Using a PC with a high-speed front-side bus (800 MHz or better) can improve system performance.
Memory	<input checked="" type="checkbox"/> 1 GB for Windows 7 <input checked="" type="checkbox"/> 4 GB for DS1000 Series Sensors	<input checked="" type="checkbox"/> At least 4 GB memory (64-bit OS) <input checked="" type="checkbox"/> Avoid PCs with DDR1 memory; DDR2- or DDR3-equipped PCs provide better performance. <input checked="" type="checkbox"/> If using a line scan camera, system memory should be at least 4X image size (per camera)	
Disk space	<input checked="" type="checkbox"/> 2 GB prior to installation	<input checked="" type="checkbox"/> >2 GB of storage	
Video	<input checked="" type="checkbox"/> 2X or better AGP video card <input checked="" type="checkbox"/> 32MB video RAM <input checked="" type="checkbox"/> 1024x768 resolution (800x600 for CVL) <input checked="" type="checkbox"/> 96 DPI display setting <input checked="" type="checkbox"/> PCIe x16 video card	<input checked="" type="checkbox"/> PCIe x16 video card <input checked="" type="checkbox"/> 32MB or more video RAM <input checked="" type="checkbox"/> 32-bit desktop color <input checked="" type="checkbox"/> 1280 x 1024 resolution <input checked="" type="checkbox"/> Avoid using 15-bit or 24-bit desktop color <input checked="" type="checkbox"/> Avoid integrated video for best performance <input checked="" type="checkbox"/> Avoid PCI video cards	<input checked="" type="checkbox"/> Use 64MB or more video RAM for multi-camera applications requiring live display, large desktop size, and graphics overlays or with 32-bit desktop color.
Peripherals	<input checked="" type="checkbox"/> DVD-ROM drive or network access to one to install software <input checked="" type="checkbox"/> Gigabit Ethernet adapter (GigE Vision) that supports jumbo frames <input checked="" type="checkbox"/> USB or parallel port for security key	<input checked="" type="checkbox"/> PCIe Gigabit Ethernet adapter recommended	<input checked="" type="checkbox"/> Use of GigE cameras requires a dedicated Gigabit Ethernet adapter for the camera network. <input checked="" type="checkbox"/> The Intel Single Port and Dual Port Gigabit Ethernet adapter EXPI9402PT is known to provide good performance.
Expansion Slots	<input checked="" type="checkbox"/> PCI 2.1 or greater compliant slot <input checked="" type="checkbox"/> PCI Express x4 slot (MVS-8602e) <input checked="" type="checkbox"/> PCI Express x1 slot (MVS-8500Le/8504e) <input checked="" type="checkbox"/> PCI Express x1 slot (Cognex Communication Card)	<input checked="" type="checkbox"/> PCIe over PCI for frame grabbers that support both <input checked="" type="checkbox"/> 66 MHz or higher; PCI slot recommended for MVS-8504 (MVS-8504 operates in 32-bit mode) <input checked="" type="checkbox"/> 66 MHz or higher 64-bit PCI slot recommended for MVS-8601/8602	<input checked="" type="checkbox"/> When considering the number of expansion slots required take into consideration the number of frame grabbers, Gigabit Ethernet Adapters, I/O adapters and graphic adapters the system requires.
Operating System	<input checked="" type="checkbox"/> Windows 7 version, and service pack as specified for product version	<input checked="" type="checkbox"/> Windows 10 64-bit only <input checked="" type="checkbox"/> Windows 8.1 64-bit <input checked="" type="checkbox"/> Windows 8 Embedded 64-bit for Cognex Vision Controllers <input checked="" type="checkbox"/> Windows 7 Premium, Professional and Ultimate 64-bit <input checked="" type="checkbox"/> Windows 7 Standard Embedded 64-bit	<input checked="" type="checkbox"/> Windows 7 64-bit acquisition support only for GigE Vision and third-party Imaging Device Adapters <input checked="" type="checkbox"/> See product documentation for specific operating system, service pack, and other system software requirements.

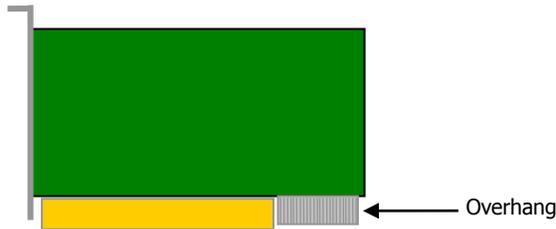
PCI Slot Types

PCI slots can support either 3.3V or 5V PCI cards. A key in the slot determines the slot's voltage. Additionally, PCI slots may be 32-bit or 64-bit:



PCI cards may be 3.3V only, 5V only, or they can be *universal* cards which operate at either voltage.

Compatible 64-bit PCI cards such as the MVS-8601/8602 can be placed in either 32-bit or 64-bit slots. When placed in a 32-bit slot, these cards overhang the end of the slot:

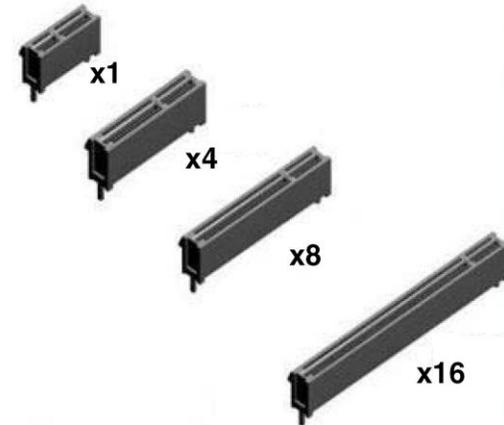


Do not confuse PCI slots with PCI Express. PCI Express is a newer high-speed serial interconnect. PCI cards cannot be placed in PCI Express slots.

Do not confuse the PCI bus width (32-bit or 64-bit) with the Microsoft Windows Operating System type.

PCI Express Slot Types

PCI Express slots are available in x1, x4, x8, and x16 sizes. The MVS-8602e fits in x4, x8, and x16 slots, Cognex recommends using an x4 slot for the MVS-8602e. The MVS-8500Le and MVS-8504e are x1 cards and may be used in any PCI Express slot.



Frame Grabber	Supported Expansion Slots	Recommended
8601 / 8602	PCI (3.3 or 5 volts; 32 or 64-bit) PCI-X (3.3 or 5 volts; 32 or 64-bit)	PCI or PCI-X slot 64-bit / 66 MHz or higher.
8602e	PCIe x4, x8, x16	PCIe x4
8704e	PCIe x4	PCIe x4

PCI Speed

The MVS-8504 and MVS-8601/8602 can operate at 66 MHz when the placed in a 66 MHz-compatible slot *and* no 33 MHz devices are installed on the same PCI bus segment. The MVS-8501 always operates at 33 MHz. Both the MVS-8501 and MVS-8504 always operate in 32-bit mode, even when installed in a 64-bit PCI slot.

Optimizing System and Software Configuration

This section lists recommended system configuration settings for a PC running Cognex vision software.

Disable Anti-Virus Software

Configure your anti-virus software so that it does not perform any automatic or real-time scanning or threat detection. If you enable a periodic virus scan, make sure that it only runs when your vision application is not running.

Disable Remote-Access Software

Disable remote system-management software such as SMS, pcAnywhere, Remote Assistance, and Remote Desktop access.

Disable Power Management and Screen Savers

The default Windows settings for power management may cause inconsistent or unpredictable results when the system enters or exits reduced power or sleep states. The use of a screen saver (other than a blank screen) can also cause inconsistent performance. Cognex recommends that you configure your system to never enter power saving mode and that you do not use a screen saver.

Disable Automatic Updates and SQL Services

Cognex recommends that you disable the following Windows services:

- Automatic Updates
- SQL Server (SQLEXPRESS)

To disable a service, follow these steps:

1. Right click on **Computer** (Windows 7) and select **Manage...**
2. Expand the **Services and Applications** item in the **Computer Management** window and click on **Services**.
3. Select the service to disable in the list, right-click and select **Properties** from the pop-up menu.
4. Click on the **General** tab, and set the **Startup Type** to **Disabled**.
5. If the service is currently running, click **Stop** to stop it.
6. Click **OK** and close the **Computer Management** window.

For Consistent Performance, Disable Intel "Turbo Boost"

If your PC uses an Intel Core i5 or Core i7 processor, the processor may support Turbo Boost, where the CPU runs at higher than nominal clock rate under certain conditions. The use of Turbo Boost mode may lead to inconsistent or unpredictable execution time for your application. Cognex recommends that you use your PC's BIOS settings to disable Turbo Boost.

Disable CPU-Intensive Display Features

Under Windows 7, select **Control Panel->System**, click **Advanced System Settings**, click **Performance->Settings**, click the **Adjust for best performance** option button, and then click **OK**.

Tune your Application's Working Set

As described in the Microsoft MSDN documentation, you may be able to improve your application performance by tuning its Working Set (the set of memory pages used by the application). Refer to the MSDN documentation for more information.