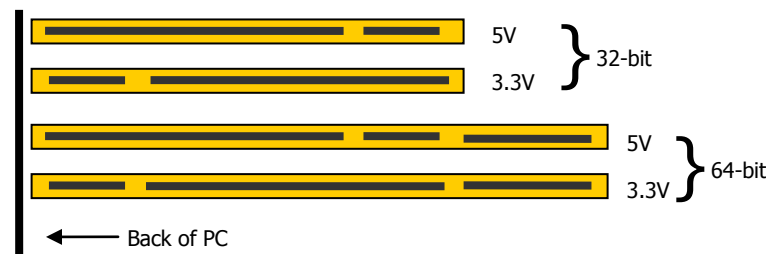


Information about hardware and software requirements for PCs used with current Cognex Vision Software (CVL and VisionPro) and hardware (MVS-8100L/8100M, MVS-8501/8504/8504e, MVS-8500Le, MVS-8601/8602, MVS-8602e, FireWire IEEE 1394a/b, GigE Vision and DS1000 Series Sensors).

Category	Minimum Requirements ☒ Required ☒ Supported but not required ☒ Not supported	Cognex Recommends ☒ Recommended for best performance ☒ Avoid for best performance	Configuration Notes ☒ Information
CPU	☒ 1 GHz Pentium Processor ☒ Multi-core processors ☒ 32-bit/64-bit CPU	☒ At least a 2 GHz Multi-core processor ☒ 512KB or more L2 cache	☒ Using a PC with a high-speed front-side bus (800 MHz or better) can improve system performance.
Memory	☒ 512 MB for Windows XP ☒ 1 GB for Windows 7 ☒ 4 GB for DS1000 Series Sensors	☒ At least 2 GB memory (32-bit OS) ☒ At least 4 GB memory (64-bit OS) ☒ Avoid PCs with DDR1 memory; DDR2- or DDR3-equipped PCs provide better performance. ☒ If using a line scan camera, system memory should be at least 4X image size (per camera)	
Video	☒ 2X or better AGP video card ☒ 32MB video RAM ☒ 1024x768 resolution (800x600 for CVL) ☒ 96 DPI display setting ☒ PCIe x16 video card ☒ PCI video card not supported with MVS-8100L	☒ PCIe x16 video card ☒ 32MB or more video RAM ☒ 32-bit desktop color ☒ 1280 x 1024 resolution ☒ Avoid using 15-bit or 24-bit desktop color ☒ Avoid integrated video for best performance ☒ Avoid PCI video cards	☒ 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	☒ DVD-ROM drive or network access to one to install software ☒ Gigabit Ethernet adapter (GigE Vision) that supports jumbo frames ☒ USB or parallel port for security key	☒ PCIe Gigabit Ethernet adapter recommended	☒ Use of GigE cameras requires a dedicated Gigabit Ethernet adapter for the camera network. ☒ The Intel Single Port and Dual Port Gigabit Ethernet adapter EXPI9402PT is known to provide good performance.
Expansion Slots	☒ PCI 2.1 or greater compliant slot ☒ PCI Express x4 slot (MVS-8602e) ☒ PCI Express x1 slot (MVS-8500Le/8504e) ☒ 3.3V-only PCI slots not supported by MVS-8100L/8100M ☒ PCI 2.3 not supported by MVS-8100L/8100M	☒ PCIe over PCI for frame grabbers that support both ☒ 66 MHz or higher (32-bit or 64-bit) PCI slot recommended for MVS-8504 (MVS-8504 operates in 32-bit mode) ☒ 66 MHz or higher 64-bit PCI slot recommended for MVS-8601/8602	☒ When considering the number of expansion slots required take into consideration the number of frame grabbers, Firewire adapters, Gigabit Ethernet Adapters, I/O adapters and graphic adapters the system requires.
Operating System	☒ Windows type (XP or 7), version, and service pack as specified for product version	☒ Windows 7; 32-bit and 64-bit ☒ Windows XP Home and Professional (32-bit SP3) ☒ Windows 7 Standard Embedded 32-bit and 64-bit as specified for product version ☒ 64-bit OS for DS1000 Series Sensors	☒ Windows 7 64-bit acquisition support only for MVS-8602e, GigE Vision and third-party Imaging Device Adapters ☒ See product documentation for specific operating system, service pack, and other system software requirements. ☒ FireWire-B (IEEE-1394b) cameras when used on Windows 7 will operate using 1394a bandwidth.

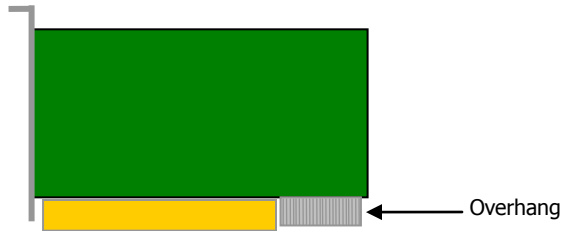
PCI Slot Types

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:

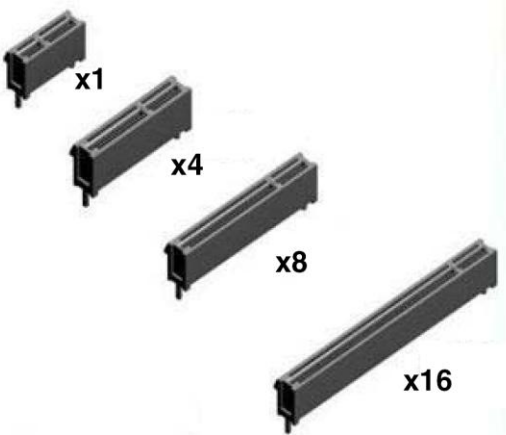


Do not confuse PCI slots with PCI Express. PCI Express is a newer high-speed serial interconnect. PCI cards cannot be placed in PCI Express slots.

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.
8100L / 8100M	PCI (5 volts only; 32 or 64-bit)	PCI 5 volts; 32-bit
8501	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 33 MHz or higher.
8504	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 66 MHz or higher.
8504e / 8500Le	PCIe x1, x4, x8, x16	PCIe x1
8602e	PCIe x4, x8, x16	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 system's 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 **My Computer** (Windows XP) or **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 XP, select **Control Panel->Display**, click the **Appearance** tab, click **Effects...**, and then apply the following settings:

- Uncheck **Use the following transition effect for menus and tooltips:**
- Uncheck **Show shadows under menus**
- Uncheck **Show window contents while dragging**

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.