OmniTek PC Requirements

OmniTek products may be purchased pre-installed into a suitable PC, or the PCI card may be purchased for installation into your own PC. This gives the user complete flexibility as to how to use/package the card.

This document briefly outlines the required specification for choosing your own PC.

PC Specification – Essential requirements

Motherboard
It is essential that the motherboard in the pc provides 3.3V onto the pci connectors. This is guaranteed if the motherboard is pci2.2 compliant. We have found that not all motherboards that are pci2.1 compliant provide 3.3V. However, most recent motherboards appear to be pci2.2 compliant.

Space
The OmniTek PCI card is manufactured to the maximum size allowed in the PCI specification. This card format is often described as a full length PCI card. The card is 31.3cm long (excluding the BNCs that protrude beyond the end of the card, and 10.6cm high, measured to include the PCI connector.

Operating System
OmniTek products are designed to run in conjunction with Windows 2000 Professional, Windows XP Home, or Windows XP Professional. OmniTek products will not run on Windows 95/95, or Windows ME. There is no support for LINUX, or Apple computers.

Direct X 8.1 or later is essential for all products.

PC Specification – Performance requirements

The actual processing of the video is carried out in the hardware on the card. The PC is used to control the OmniTek card, and to display the data from the OmniTek card. Thus there are a few main requirements, which depend on which application you intend to use.

Some of the PC requirements are intertwined. For example, in order to achieve a certain level of graphics performance, one could use a modest graphics card with a very powerful processor, or a better graphics card with a modest processor. For that reason, this document can only provide outline advice.

Processor
A reasonable processor is required. For example, a 1.8G Pentium 4 gives adequate performance for the OmniTek LAB product range, and a 2.4G Pentium 4 gives adequate performance for the XR product range. If you are only using the Gen module (part of the OmniTek LAB range), then a 1G Pentium 4 would be adequate. A Pentium M at 1.7G may give adequate performance for OmniTek LAB and XR, although it will depend on the remainder of the motherboard configuration. For example, a Pentium M (400) with the 855 chipset would require a graphics accelerator for use with XR. However a Pentium M (533) with the 915 chipset works well with XR.

Memory
Our application will run in 256MB system memory. However, as usual, more is better, and we fit 512 MB minimum in our current systems.

Graphics/Monitor
Decent graphics performance is important to get a smooth update of waveforms etc. Any system that uses a PCI graphics card will perform very badly. This is due to the reduction in bandwidth available to the OmniTek application caused by sharing the bus with the graphics card.

Integrated graphics can give reasonable results, in particular with newer chipsets. For example, the integrated graphics available with the Intel 915 chipset will provide good performance with all

products. However the Intel Extreme integrated graphics available with the 855 chipset will not be suitable for XR, although it is sufficient for OmniTek LAB, and PQA.

The VGA monitor and adapter must run at a resolution of 1280 * 1024 or greater, at a pixel depth of either 16 bits, or 32 bits. We strongly recommend using 16 bit colour depth, and this provides the best possible performance. Note that 24 bits will not work. A high refresh rate will provide a more pleasing display, and we recommend 60 Hz or faster.

Mouse
There are no special requirements for the pointing device. However, OmniTek applications can make use of three mouse buttons.

Keyboard
There are no special requirements for the keyboard.

Disk
Each OmniTek application requires around 5MB of disk space. If you wish to install the complete Test Sequences that we supply with the Motion/Capture option, these occupy approximately 4.5 GB when uncompressed. The sequences are supplied on CD compressed into zip files, and you will need a suitable utility to unzip these if required.

When loading or saving sequences, the speed of the disk will usually be the limiting factor. Use of a 7200 RPM disk can give sequence loading times of 50% of less of the time required when loading from a 5400 RPM disk. For this reason, we recommend using 7200 RPM disks, or better.

PC Noise
Although not a requirement in terms of making the OmniTek applications work, it is worth considering noise before purchasing a new PC to use with OmniTek products.

Depending on your application, noise may be an important consideration. If so, then the following may help.

Pentium M processors provide very good levels of performance for OmniTek applications, yet only produce around 25W of heat. So get a good Pentium M, eg 1.7GHz, 533 FSB, and you will only need a tiny and nearly silent fan.

You can also consider laptop technology. OmniTek can supply a small chassis containing only our PCI card and a power supply, which overall generates very little heat, and noise. This can be controlled from a laptop via a special PCMCIA card, making an almost quiet solution, and also quite portable.

Tested configurations.
Pentium M running at 1.7GHz, 400 MHz FSB, 512MB DDR RAM, with the Intel 855 chipset.
Works fine for PQA and OmniTek LAB. Not suitable for XR without the addition of an AGP graphics card.

Pentium M running at 1.7GHz, 533MHz FSB, 512MB DDR RAM, with the Intel 915 chipset.
Works fine for all applications.

Pentium 4 running at 2.4GHz, 512 MB DDR RAM with integrated Intel Extreme graphics.
Suitable for OmniTek LAB or PQA. Not suitable for XR. With an AGP graphics card, this system would probably suit XR as well.

Athlon 64 systems – all of these produce good performance for all OmniTek products.

Athlon XP (32 bit)
1900+ including AGP card – suitable for the Gen module (part of LAB range). Probably not suitable for all HD video formats. Would recommend 2500+ minimum.