

Windows System Recommendations for Frontier Design Cards

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At Frontier Design Group, we're often asked what kind of computer system we recommend for use with our PCI cards. Our answer has changed somewhat over the years, as systems have become faster and more affordable. The suggestions in this document are listed in priority order, and may be helpful if you're purchasing a new system or if you're improving an existing one. You can check the configuration for many of your current system components in the Windows Device Manager (Start > Settings > Control Panel > System > Device Manager).

Hard drive and adapter

One of the most important parts of a digital audio workstation is its hard drive and adapter. It used to be that you had to have a high-performance SCSI system in order to get enough bandwidth for digital audio work. Many of our high-end customers still use a SCSI system, and enjoy its flexibility. Almost all of them have an Adaptec 2940 U2W SCSI/PCI adapter (U2W = Ultra2 Wide), which performs excellently. Some other SCSI adapters also work well, but make sure you get a solid bus-mastering adapter, rather than a slave device.

SCSI subsystems are now rivaled in raw performance by "Ultra-DMA" IDE/ATA drives and adapters. Most new systems and motherboards come with at least a 33MHz version, which might be labeled ATA-33 or EIDE33 or UDMA33. There are also faster versions available (UDMA66 models).

The spindle rate of the hard drive significantly affects how quickly it can transfer data. Most inexpensive systems have a hard drive with a spindle rate of 5400rpm or slower. We strongly recommend using a hard drive with a spindle rate of at least 7200rpm. For maximum performance, you may want to consider a 10,000rpm drive, such as the Seagate Cheetah or IBM DeskStar. Standard Quantum and Seagate SCSI drives have been quite good. For IDE/ATA drives, many of our customers like their 7200rpm Maxtor IDE drives.

Regardless of which drive you have, check the manufacturer's web site regularly to make sure you're using the latest software drivers for your hard drive.

If you're using an IDE drive, make sure it is enabled for DMA:

1. Navigate to the Device Manager (Start > Settings > Control Panel > System > Device Manager).
2. Click the "+" next to "Disk drives."
3. Double-click on the listing for your hard drive.
4. Go to the "Settings" tab, and make sure that "DMA" is checked under Options.
5. If you changed the setting, you'll need to reboot the computer for the change to take effect.

Video card

Many video cards hog the CPU or the PCI bus in order to improve their own performance. This can be at the expense of good real-time performance, which is critical for digital audio workstations. Our trusted friends at Sonic Foundry have done extensive testing, and strongly recommend the Matrox Millennium G400 series. These video cards are well-behaved in an audio environment, and also support "Dual Head" (two monitor) operation.

Again, frequently check the manufacturer's web site to make sure you're using the latest drivers for your video card. We've had several customers who've seen problems disappear and performance dramatically improve, due solely to updating the drivers for their video card.

Monitor

For monitors, quite simply, more bits is better. With audio applications supporting more and more tracks and effects, there is more to watch than ever, so a large screen is useful. The 17" monitors have become quite affordable, and now seem to be the norm. Some 19" monitors are attractively priced as well. The light-weight LCD monitors are also worth considering, especially if you're ever going to be lugging the monitor around.

CD-ROM/DVD drive

All PCI audio cards from Frontier Design Group support direct real-time digital input from CD-ROM or DVD drives, but not all drives support this feature. If you'll want to transfer digital audio from the CD-ROM or DVD drive in your PC, make sure it has a fully-functional 2-pin digital audio output. Some drives don't have a 2-pin digital output; others have the connector but it isn't wired to anything inside the drive! The Dakota FAQ section of our website has a list of CD-ROM and DVD drives that we know have a fully-functional 2-pin digital audio output.

RAM

For audio production on your PC, you shouldn't need tons of DRAM, although more doesn't hurt. We record and play lots of tracks on 64MB systems, and don't see a big need for more, even though many systems come stacked with more by default. Your audio is streamed on and off the hard drive. The DRAM is only needed to store program contents (fairly small) and to buffer audio data that is actively going on or off the drive. Limitations in the number of audio tracks you can record are most always due to the hard drive, not the DRAM.

CPU

Generally, faster is better, but mostly for audio effects and other computer-intensive items. The number of tracks you can record/play is usually determined by your hard drive subsystem, *not* your CPU. If you buy a new system that's somewhat slower than the fastest available, you can get good performance without paying an extreme price.

Unlike some audio cards from other manufacturers, Frontier Design Group products work well with all Pentium-compatible CPUs including Cyrix chips and AMD's K-6 and Athlon chips.

Operating system

Currently, our audio cards support Win95, Win98, and Win98 SE. Although we've heard several stories regarding the stability or instability of each of these, we've had good success in-house with all of them. Of course, the latest version gives you fewer old bugs, better support for new features like USB, and so on.

System vendor

There are several vendors who sell pre-configured computers with great components such as those mentioned above. Some of the best are resellers of Frontier Design Group gear, and they're listed on the Purchase page of our web site (www.frontierdesign.com). You can also buy systems from Dell or Gateway that will work well, even if they aren't custom-tuned for audio.

You can also build a system yourself, but this can lead to trouble. In an effort to save some money, people often forget the hidden costs of time and frustration when they discover that their "no name" motherboard doesn't work or needs some bizarre configuration settings to work properly.