Troubleshooting & Streamlining Your PC For Use With Digital Audio

In the world of computer hardware and software, most computer systems are not designed with professional audio recording in mind – and it's nearly impossible to find a system identical to another. So in order to get the best performance possible out of your computer, it's a good idea to properly allocate the resources on your machine for the task at hand. This guide offers a number of suggestions to best accomplish this goal.

If you're having issues getting your audio interface (such as Spike or Onyx FireWire) working, noise problems, or poor performance from your interface, read on. If you're NOT having any problems with your system and you're completely happy with its performance, just close this window and get back to mixing. As the saying goes: If it ain't broke, don't fix it!

Software Tips: Dealing with Latency

If your audio is "glitchy" and seems to break up every once in a while (especially when you increase the number of tracks), you might have some issues with latency. Latency is the time it takes for sound to travel from an input on an audio device to its output. Evidence could be a delay between the time you play a sound and the time it takes for that sound come out of your speakers. The greater the latency, the longer the delay, and the harder it is to record (overdub) along with your recording. Thus, you need the lowest latency possible.

But with low latency comes higher demands on your processor. The ASIO buffer size is one factor in many when considering your total amount of latency. Try adjusting these settings in your DAW or your ASIO driver. In Tracktion, this can be done under the Settings tab by clicking on "Show ASIO Control Panel". If you have a Spike or Onyx FireWire, this will launch their own control panel, allowing you to adjust latency. NOTE: Be sure to hit "Restart Device" after making any changes.

Installation Tips: Dedicated Audio System

To achieve the best results with your computer system, it is highly recommended that you use your computer system solely for audio and nothing else. You need all the resources you can get to ensure your recordings are not affected other programs. That doesn't necessarily mean you can't run other programs and connect to the net while recording audio; it just depends on your computer hardware. If you're having performance problems with your computer or if you're building a new machine, try the following:

1. *If you can, start with a clean installation of the operating system – if you just purchased/built the computer, then you're good. If you're running the same operating system for the past few years, it might be good to reformat and reinstall your system to eliminate hidden "bugs" acquired from years of installing various programs.*

2. *With Windows XP, you'll probably want to upgrade to Service Pack 2. You can get this directly from Microsoft (www.microsoft.com). It's also recommended that you run any patches associated with SP2.*
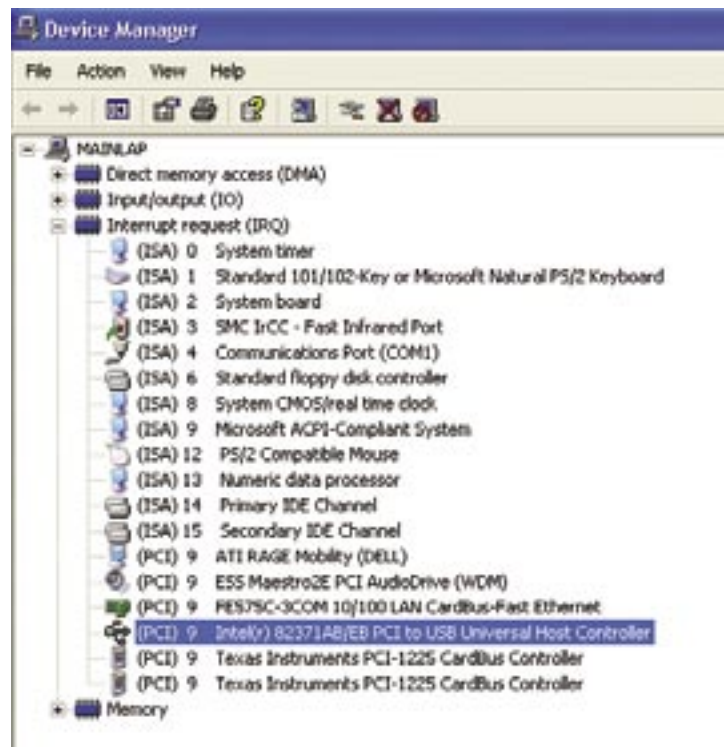
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3. Disconnect any network and Internet connections by removing the cable from the network port (you may have to disable to them in your settings if you're using a wireless network).

4. Disable any anti-virus software and software firewalls (in Windows XP this can be found in your Control Panel).

Configuration Tips: Preventing Resource Conflicts

Once you've installed the drivers, software, and hardware for your audio interface, you can go further into your system settings to ensure optimum performance. Resource conflicts can cause you to hear clicks and pops in your audio, as well as loud noises including "skipping" sounds and buzzing.

1. Check your IRQ settings for conflicts: Go to Control Panel -> System -> Hardware -> Device Manager. Once that is open, go to View and select "Resources by Type". This will show you all the IRQ's by number – you want to look for multiple devices sharing the same number. For example, you don't want your USB sharing the same IRQ as your video card. If you find a conflict, you can resolve it by performing the following:

   a. The first and easiest thing to try is to disable any devices that are either not being used, or that are sharing with audio devices that you are concerned with. Do not disable a device you are unfamiliar with. To disable a device, right-click on the IRQ and select "Disable". USB can conflict with PCI and FireWire even if there is nothing connected to the USB port. Disable any USB controller sharing with others or not being used.

   b. Try moving your PCI USB/FireWire card to different slots; particularly open ones. If you don't have any open PCI slots, you might want to trade different cards around or remove one from your system.

   c. If you're using a FireWire or USB port built into your motherboard, try purchasing a PCI FireWire or USB card, install it in an empty slot and connect your interface to that port instead. We recommend against getting "all-in-one" PCI FireWire/USB cards – get one dedicated to one or the other.

   d. In a situation where your laptop is sharing an IRQ with the video card and your USB/FireWire card slot, there is little you can do to resolve this (due to the nature of Windows XP and IRQ assignments; see Advanced IRQ right). If you have an IRQ conflict that cannot be resolved, it might be best to contact your laptop manufacturer for more options.

Advanced IRQ (above)

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An example of an IRQ conflict (notice the USB bus is shared with other devices, including the video card):

2. *Sometimes conflicts between drivers can cause performance issues. Make sure you've updated your FireWire or USB drivers to the latest that your PCI card or motherboard accepts. You should be able to find drivers on your hardware manufacturer's website. Updating drivers for seemingly unrelated devices could sometimes resolve issues as well. If needed, try updating the drivers for your Ethernet card, Modem, Video Card, etc.*

3. *Conflicts can also arise when using more than one sound card at a time. Try disabling your built-in soundcard (if your motherboard has one), and any other audio interfaces. You can do this by going to Control Panel -> System -> Hardware -> Device Manager -> Sound, video and game controllers. Right click the mouse over the device in question and hit "disable".*

Battery Power: Preventing Resource Conflicts (Laptops only)

Since PC laptops are designed to be portable and efficient, you can run into a number of resource conflicts.

1. *First check to see if you experience glitches/noise in your audio when the laptop is plugged into an AC outlet. If so, this could be the result of either a ground loop or noise generated by a charging battery. Unplug from the wall and try running just on your laptop's battery power. Laptops can vary from one to the next on how they handle power. In some cases, the opposite can be true: glitches/noise can occur when the laptop runs on batteries, but not when plugged in. Consult your laptop documentation for further details on its power handling.*

2. *Some laptops offer dual-battery power. Try removing one of the batteries and simply running on just one.*

Advanced IRQ: Manually Reconfiguring IRQs

NOTE: *The following is only for the bravest customers; try at your own risk! Certain situations exist where you can manually reconfigure your IRQs (may not be possible with laptops). This would allow you to fix IRQ conflicts by manually assigning your devices on their own IRQs. Full details on IRQ settings and workarounds can be found on www.microsoft. com by searching for the keywords, "IRQ sharing XP".*

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