

# SONICport & SONICport Optical Manual

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- Consult the dealer or an experienced radio/TV technician for help.

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We, Opcode Systems, Inc.,  
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Mountain View, CA 94043 USA  
(650) 429-2400

declare under our sole responsibility that the products

Opcode SONICport  
and  
Opcode SONICport Optical

comply with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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### Declaration Of Conformity

We, Opcode Systems, Inc., of  
365 East Middlefield Road  
Mountain View, CA 94043 USA

declare under our sole responsibility that the products

SONICport and SONICport Optical, digital audio interfaces  
for PC compatible computers,  
to which this declaration relates  
is in conformance with the following standards:

EN55022:1987  
EN50082-1:1992  
IEC 801-2:1984  
IEC 801-3:1984  
IEC 801-4:1988

following the provisions of the 89/336/EEC Directive.

## ACKNOWLEDGMENTS

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# CHAPTER 1: Introduction to the SONICport

Thank you for purchasing the Opcode SONICport, an easy to install USB digital audio interface for your PC compatible. With it, you can transfer digital audio between your computer and S/PDIF digital audio devices such as DAT recorders, MiniDiscs, and digital multitracks. In addition, the analog inputs and outputs provide for more general purpose audio recording and playback.

## What's Included

Your SONICport package includes the following:

- SONICport;
- 2-meter USB cable;
- PC disk with SONICport Config software;
- SONICport Manual;
- Technical Support Information booklet;
- User registration card.

## System Requirements

To use the SONICport, you must have the following:

- Pentium 133 or faster, with Windows 98 installed;
- USB port or USB hub;
- Windows 98 CD (for driver installation).

## About the SONICport

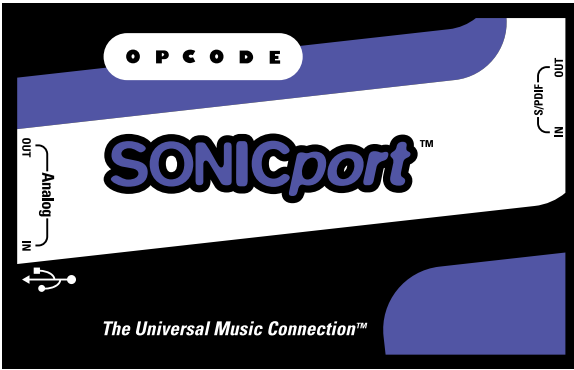


Figure 1.1: SONICport, top view

Because of its elegant design, the SONICport is very easy to install and use. Quite simply, the SONICport consists of a USB connector, a S/PDIF input and output, an analog stereo (minijack) input and output, and a green input LED.

The SONICport connects to your computer via the Universal Serial Bus (USB). USB provides high-speed communication with up to 127 devices, lets you plug and unplug devices without powering off your computer, and even auto-detects and configures hardware.

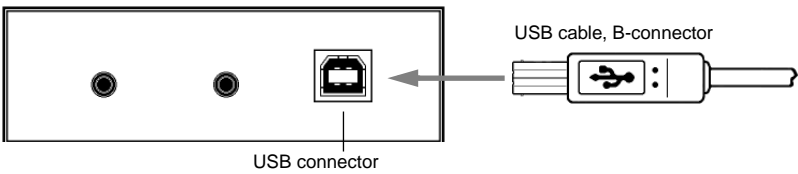


Figure 1.2: SONICport, left side

The SONICport's **USB connector** comes from the factory with a 2-meter USB cable already connected; the other end of this cable connects to your computer's USB port or hub. If desired, you can remove the provided USB cable and replace it with another longer one. It is not recommended, however, that you use USB extension cables with the SONICport.



**IMPORTANT:** *Never plug or unplug the SONICport from your computer's USB port while recording or playing audio (or when Instant Playback is on). This could in some instances cause your computer to crash.*

The SONICport's **S/PDIF IN** jack connects to and receives audio from the digital output of your audio devices. The **S/PDIF OUT** jack connects to and sends audio to the digital input of your audio devices.

The type of S/PDIF connectors you have depends on which version of the SONICport you own:

- SONICport:** The SONICport uses S/PDIF-COAXIAL (RCA-type) unbalanced connectors, white for the input and red for the output. Don't confuse these connectors with analog RCA connectors, commonly found on home stereo equipment (never plug the SONICport's S/PDIF jacks into an analog connector). Use high-quality RCA cables to connect to your digital audio devices.

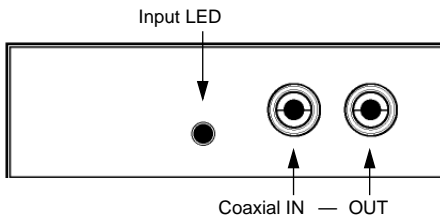


Figure 1.3: SONICport, right side

- SONICport Optical:** The SONICport Optical uses S/PDIF-OPTICAL connectors (often referred to as Toslink fiber-optic). For this unit, use fiber-optical cables to connect to your digital audio devices. The SONICport Optical ships from the factory with caps on both optical connectors; when not connected to a digital audio device, make sure to leave these caps plugged in.

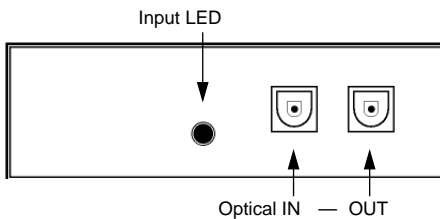


Figure 1.4: SONICport Optical, right side

The SONICport also has a pair of stereo minijacks for analog input and output. These 3.5mm stereo connectors (similar to the headphone jacks on portable cassette players) transmit and receive line level audio signals.

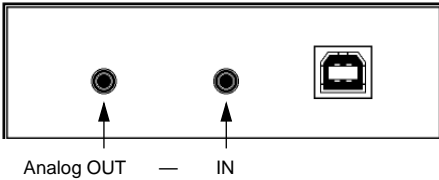


Figure 1.5: SONICport, left side

Use the SONICport's **Analog IN** to record a stereo analog signal, such as that from a home stereo. Connect the **Analog OUT** to an audio mixer to monitor or record the SONICport's audio signal—you can even plug a pair of headphones directly into this jack.

*NOTE: Many audio devices transmit and receive stereo audio signals via separate right and left jacks. To connect the SONICport to these devices, use a 3.5mm stereo minijack to dual RCA (or 1/4") cable.*

Whenever the SONICport transmits audio, it is sent to both the S/PDIF OUT and Analog OUT. However, the unit can only receive audio from one of its input ports: either the S/PDIF IN or Analog IN. The setting for Sample Rate/Type in the SONICport Config application determines which signal will be used (see *Analog Input* (pg. 10)).

The SONICport also has a green **input LED** that becomes lit whenever the unit receives digital audio via its S/PDIF input jack. Use this LED to monitor whether the unit is successfully connected to your PC and receiving digital audio from your signal source.

## CONNECTING TO A PC

Before connecting the SONICport to your PC you must first install the SONICport Config software. This software allows you to reconfigure the unit's sample rate and bit depth, put it in Analog mode, and enable "Instant Playback."

To install the SONICport Config software:

- ① **Disconnect all USB devices from your computer.**
- ② **Close all Windows applications.**
- ③ **Insert the PC disk included with your SONICport package and double-click the **Setup** program.**



- ④ **Follow the prompts within the Setup program as requested.**  
The SONICport Config software is copied to your computer, and will eventually appear in the Windows Taskbar.
- ⑤ **When finished, exit the installer and restart Windows for changes to take effect.**
- ⑥ **After restarting, reconnect your USB devices.**  
In recognizing your USB devices, Windows may take several seconds to rebuild its driver database.

When first connecting to your PC, the SONICport is automatically detected and you are prompted by Windows to install the necessary USB drivers. To complete the following installation procedure, you will need your Windows 98 CD.

- ① **Make sure all Windows applications are closed.**
- ② **If it's not already attached, connect the "B" end of the provided USB cable to the SONICport's USB jack (see Figure 1.2 on page 2).**

- ③ **Connect the other “A” end of the USB cable to your computer’s USB port or hub.**

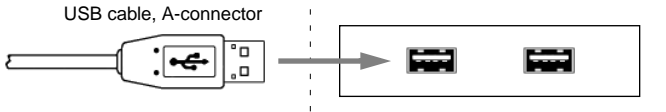
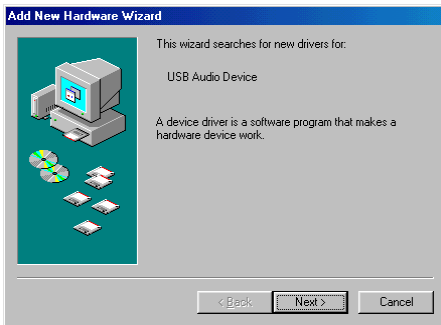


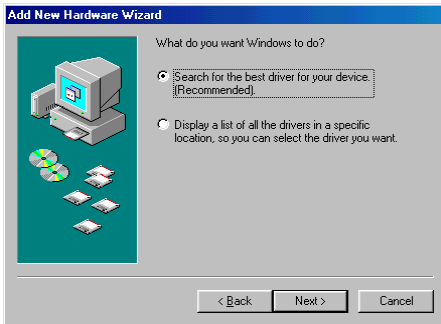
Figure 1.6: Connecting to a USB port

After several seconds Windows identifies the SONICport as a USB audio device and launches the Add New Hardware Wizard.



Click the **Next** button to continue.

- ④ **The following dialog prompts you to specify what “you want Windows to do.”**



Select the option for “Search for the best driver for your device,” then click the **Next** button.

- ⑤ In the following dialog you must specify where Windows will search for the necessary USB driver.



Uncheck the options for “Floppy,” “CD-ROM,” “Microsoft Windows Update,” and “Specify a location.” Then click **Next**.

*NOTE: If you check the option for “Microsoft Windows Update,” Windows will try to access its online drivers via the Web.*

- ⑥ When prompted, insert your Windows 98 CD and click **OK**.  
 ⑦ Once Windows has located the USB driver to be installed, click the **Next** button.

Windows installs the driver from your Windows 98 CD.

- ⑧ When completed, click **Finish** to exit.

*NOTE: The SONICport requires that three USB drivers be installed: USB Composite Device, USB Human Interface Device, and USB Audio Device. When first connecting the SONICport, you will have to perform the Wizard steps outlined above for each driver not already installed on your system.*

*In addition, Windows may in some instances prompt you to reinstall these drivers if you plug the SONICport into a different USB port, or if you reconfigure the SONICport (as described on page 9).*

## Connecting Multiple SONICports/DATports

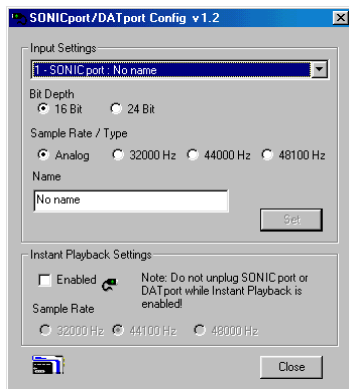
If you need even more audio inputs and outputs for your PC, you can connect additional SONICports or DATports (up to 4 total devices). Of course, you’ll need a USB port for each device. When adding a new device, you may be prompted by the Add New Hardware Wizard to install the necessary USB drivers.

## USING THE SONICPORT CONFIG SOFTWARE

Once the SONICport Config software is installed and the unit is successfully connected to your PC, an icon appears in the “task tray” section of the Windows Taskbar. Double-clicking this icon launches the SONICport Config program, where you can reconfigure the unit’s sample rate and bit depth, name individual SONICports, enable Analog input, and enable “Instant Playback” (discussed on page 12).



Double-click icon to open the SONICport Config app →



If using multiple SONICports, the Input Sample Rate, Bit Depth, and Name can be different for each unit. The Device menu at the top of the window determines which SONICport will be reconfigured when clicking the **Set** button. The Instant Playback Settings, on the other hand, are shared by all connected SONICports.

*NOTE: Disconnecting the SONICport from your PC’s USB port will cause the icon to go away in the Taskbar, reconnecting will make it reappear. In both instances, the icon’s LED will blink red for a few seconds, indicating a change in the connection status.*

*When Instant Playback is enabled, and the SONICport is connected, a green LED will continuously blink in the SONICport Config icon. When Instant Playback is off, the green LED will remain lit but not blink.*

## Sample Rate and Bit Depth

When recording digital audio with the SONICport via its S/PDIF IN, you must specify the Sample Rate and Bit Depth (so it matches the settings used by the digital audio source, and your recording software). The supported bit depths and sample rates, which are specified with the SONICport Config software, are as follows:

- **Bit Depths:** 16 or 24

Most users will likely stick with 16 bit, which is the bit depth used for audio CDs, DATs, and MiniDiscs. The higher bit depth of 24 is provided for those using high end digital audio hardware and software—check your manufacturer’s documentation to see if this bit depth is supported.

- **Sample Rates:** 32, 44.1 or 48 kHz

44.1 kHz is the sample rate used for audio CDs and MiniDiscs. Most DAT players use 48 kHz by default, but may also support 44.1 kHz. 32 kHz is often used in radio production.

While the Input Sample Rate and Bit Depth can be different for each connected SONICport, the Instant Playback Sample Rate (see page 12) is shared for all connected SONICports.

If playing audio from multiple audio applications at the same time, make sure that all files are using the same sample rate.

When Instant Playback is disabled, the SONICport will play back digitally (via the S/PDIF OUT) at any of its 3 supported sample rates; audio files with other sample rates will not successfully play. However, if using the SONICport’s Analog OUT, audio files with sample rates of 8-48k *will* play successfully.

When Instant Playback is enabled (see page 12), audio files of any sample rate will play back at the Instant Playback Sample Rate using on-the-fly sample rate conversion (as necessary).

*NOTE: The SONICport’s default configuration uses a Bit Depth of 16 with the input mode set to Analog. If you intend to use the SONICport’s S/PDIF input, make sure to switch the Sample Rate/Type setting to one of the three sample rate options. See Reconfiguring the SONICport (pg. 10).*

## Analog Input

While the SONICport always sends audio to both the Analog and S/PDIF outputs, it can only receive one or the other as its input source. The **Sample Rate/Type** option in the SONICport Config software determines whether the unit will receive digital or analog.

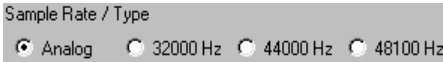


Figure 1.7: Sample Rate/Type, SONICport Config software

If you choose one of the three sample rates (32000, 44100, or 48000 Hz), the SONICport will record from its S/PDIF input. If, on the other hand, you choose **Analog**, it will record from its Analog input. For details on putting the unit into Analog mode, see the following section *Reconfiguring the SONICport* (pg. 10).

## Reconfiguring the SONICport

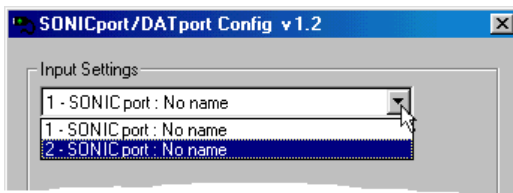
To reconfigure the SONICport's Bit Depth or Input Sample Rate, enable Analog input, or enter a unique name for the device:

- 1 Double-click the **SONICport Config** icon in the Windows Taskbar.



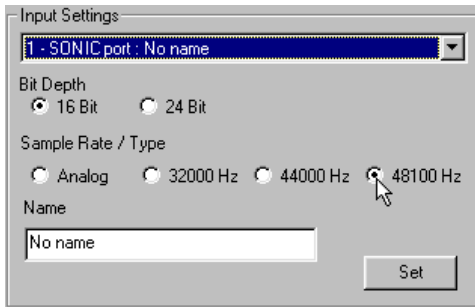
If there is no icon present for the SONICport Config software, you have either not installed it, or your SONICport is currently not connected to your PC. See *Connecting to a PC* (pg. 5) for additional information.

- 2 If using more than one SONICport, choose from the Device menu which device you will reconfigure.





③ **Specify the Bit Depth and Input Sample Rate.**



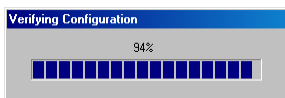
If you will be recording from the SONICport's Analog IN, choose the "Analog" option. When the SONICport is in Analog mode, the signal from the S/PDIF IN is ignored.

④ **If desired, type in a custom name for the SONICport in the Name field.**



⑤ **Click the Set button.**

The SONICport's configuration info is rewritten and then verified.



When prompted, restart Windows for changes to take effect. A reconfigured SONICport will not be available until after restarting.

## Instant Playback (for S/PDIF output)

To ensure the highest possible audio performance over USB (very low “jitter”), and allow compatibility with the widest range of S/PDIF devices, the SONICport waits approximately 3-5 seconds before playing digital audio.

If you want more immediate response times on playback for digital audio, enable “Instant Playback” mode from the SONICport Config software. Whenever doing a *final* transfer of digital audio to another device from the SONICport, make sure to use Instant Playback—otherwise, you’ll have to allow for a 3-5 second pre-roll time for the SONICport to cleanly enter play mode.

There are a few important things to keep in mind when enabling Instant Playback mode...

- Avoid unplugging the SONICport, this could in some instances lead to a crash.
- When playing audio, make sure the sample rate for the audio files matches that of the Instant Playback Sample Rate (as indicated in the SONICport Config program).

Failing to do so will likely cause the unit to enter into a state where it will use on-the-fly sample rate conversion for playback, resulting in reduced audio fidelity. If you find yourself in this state, open and close the SONICport Config software to reset the unit—this will ensure that the SONICport will play optimally at its own sample rate (unless, of course, it encounters a file at a different rate).

- The Instant Playback Sample Rate is used for all connected SONICports, which means that each device will play back at that rate.

Instant Playback also allows the SONICport to continually transmit S/PDIF information to connected audio devices, even when the SONICport is not playing. This is useful because some DAT players will not enter record mode until there is a S/PDIF signal present.

*NOTE: Instant Playback only affects the audio transmitted to the SONICport’s S/PDIF OUT. If you are only using the device’s Analog OUT, there is no need to enable Instant Playback.*

## Enabling Instant Playback

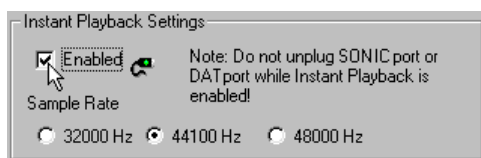
To enable Instant Playback for all connected SONICports:

- ① **Double-click the **SONICport Config** icon in the Windows Taskbar.**



If there is no icon present for the SONICport Config software, you have either not installed it, or your SONICport is currently not connected to your PC. See *Connecting to a PC* (pg. 5) for additional information.

- ② **Once the **SONICport Config Window** is open, place a checkmark next to **Enabled** to turn on Instant Playback.**

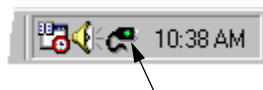


- ③ **Next choose one of the three Instant Playback sample rates (32000, 44100, or 48000).**

This sample rate should match that of the intended audio files you will play.

- ④ **Click the **Close** button to close the **SONICport Config Window**.**

Once Instant Playback is enabled, a green LED will continuously blink in the SONICport Config icon.



Flashing green LED indicates that Instant Playback is on

***IMPORTANT: Do not unplug your SONICport when Instant Playback is enabled. Doing so may in some instances cause your computer to crash.***

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# CHAPTER 2: Recording and Playing Audio

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## USING WINDOWS APPLICATIONS

Once the SONICport is connected and its drivers are installed, it appears in Windows applications as “USB Audio Device (1),” see Figure 2.1. The number in parenthesis may vary depending on whether other audio devices are installed. In fact, this number may even change for the SONICport device if you add or remove other audio hardware from your computer; or, in some instances, if you restart Windows. When using multiple SONICports, their drivers appear separately and are uniquely numbered.



Figure 2.1: SONICport selected in the Windows Sound Recorder

Whenever you disconnect a SONICport, its driver no longer appears as available in Windows. When reconnecting the unit, however, its driver automatically becomes available again.

To use the SONICport in a Windows audio application, simply make sure the appropriately numbered “USB Audio Device” is selected as the recording or playback device. This chapter contains some basic examples of recording and playing audio with the SONICport.

## Windows System Sounds and the SONICport

Whenever connecting the SONICport to your PC, it automatically becomes selected in the Multimedia Control Panel (see Figure 2.2). This means that your Windows system sounds will play through the SONICport, which is something you'll wish to avoid when performing digital audio transfers.

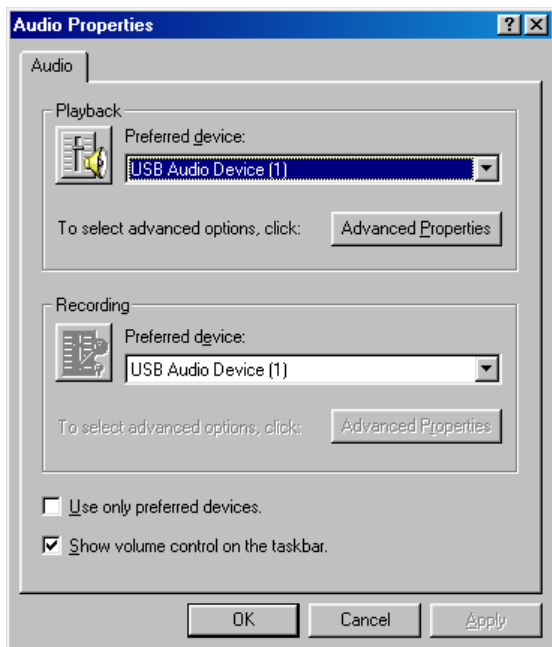


Figure 2.2: Multimedia Control Panel

In addition, since all system sounds are 22 kHz wave files and the SONICport uses a higher sample rate for digital output (32, 44.1, or 48 kHz), these sounds may not play back reliably.

It is therefore suggested that you deselect the SONICport's driver ("USB Audio Device") in the Multimedia Control Panel whenever the unit is connected to your PC.

## SOUND RECORDER

To configure the Windows Sound Recorder for use with the SONICport:

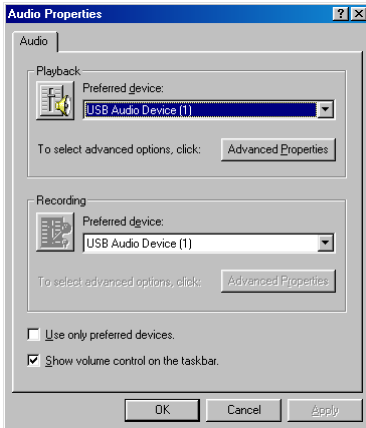
- ① **From the Window's Taskbar choose Programs>Accessories>Entertainment>Sound Recorder.**

The Sound Recorder application opens.



- ② **Choose Edit>Audio Properties.**

The Audio Properties dialog opens.



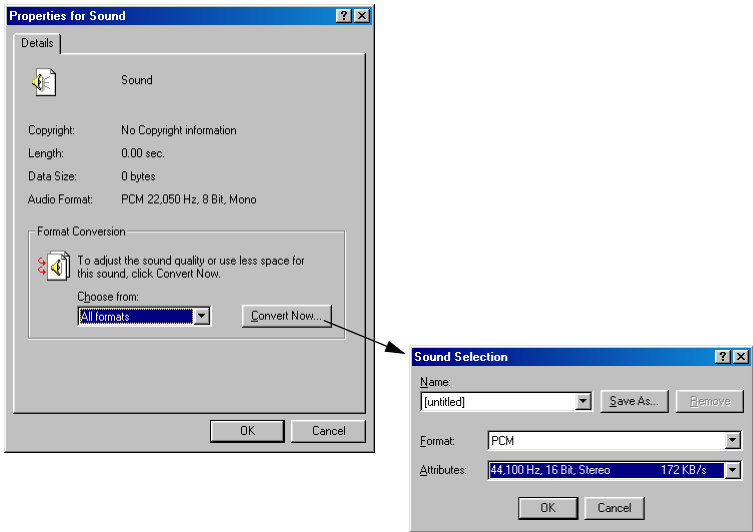
Set the Preferred Device for Playback and Recording to **USB Audio Device**. Then click **OK**.

*IMPORTANT: Configuring the Sound Recorder for use with the SONICport is the same as selecting the SONICport's driver in the Multimedia Control Panel. When finished with Sound Recorder, make sure to deselect the SONICport in the Multimedia Control Panel—otherwise the Windows system sounds will play through the SONICport.*

To record a new audio file in the Windows Sound Recorder with the SONICport:

- ① Choose **File>New** to open a new sound file.
- ② Next make sure the Sound Recorder is configured to record at the desired sample rate and bit depth. Choose **File>Properties**.

The Properties for Sound dialog opens. With the “Choose from” pop-up set to **All formats**, click the **Convert Now** button.



The Sound Selection dialog opens.

- ③ In the Sound Selection dialog, set the Format pop-up to **PCM** and the Attributes pop-up to **44,100 Hz, 16 Bit, Stereo**. Then click the **OK** button.
- ④ If recording from a digital source (DAT player, MiniDisc, digital multitrack, etc.), connect the source device’s S/PDIF output to the SONICport’s S/PDIF IN.

In addition, make sure the source device and SONICport are both configured for 44.1 kHz and 16 bit.

- ⑤ If recording from an analog source (like a home stereo), connect the source device’s audio output to the SONICport’s Analog IN.

In addition, make sure the SONICport is configured for 16 bit and Analog input. See *Reconfiguring the SONICport* (pg. 10) for details.

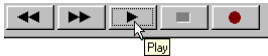
- ⑥ **Click the **Record** button in Sound Recorder to begin recording.**



- ⑦ **Initiate playback from your audio source.**  
If recording from a digital source, the SONICport's green input LED will become lit when receiving the audio.
- ⑧ **When finished recording, click the **Stop** button in Sound Recorder and stop playback from your audio source.**
- ⑨ **Choose **File>Save** to save the recorded file.**  
When prompted, enter a name for the newly recorded sound file.

To play an audio file in Sound Recorder with the SONICport:

- ① **Choose **File>Open** to open the desired sound file.**
- ② **Connect the SONICport's S/PDIF OUT or Analog OUT to the desired destination(s).**  
If you will be recording the output of the SONICport, place the external recording device in record mode.
- ③ **Click the Sound Recorder's **Play** button.**



Playback begins and the audio signal is sent to both outputs (S/PDIF and Analog) of the SONICport.

*NOTE: If using the SONICport's S/PDIF output, make sure to enable "Instant Playback" for immediate playback response times. See page 12 for details.*

- ④ **When finished, click Sound Recorder's **Stop** button.**



## COOL EDIT PRO 1.1

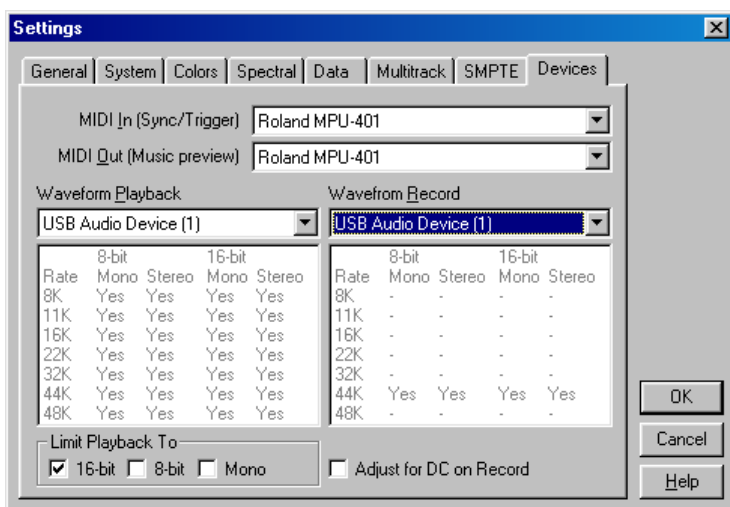
To configure Syntrillium's Cool Edit Pro for use with the SONICport:

- 1 Double-click the **Cool Edit Pro** icon to launch the application.



- 2 Choose **Options>Settings**.

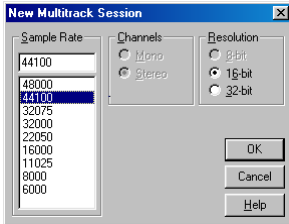
The Settings dialog opens.



Click the “Devices” tab and then set the Waveform Playback and Waveform Record to **USB Audio Device**. Then click the **OK** button.

To record a new audio file in Cool Edit Pro with the SONICport:

- 1 Choose **File>New Session**.



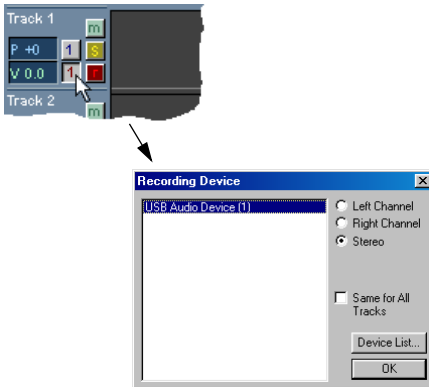
When prompted, specify a Resolution of **16-bit** along with a Sample Rate of **44100**. Then click the **OK** button.

- 2 Choose **View>Multitrack View**.

Cool Edit Pro switches from Edit Waveform View to Multitrack View.

- 3 In the **Track Console**, click the **Record Device** button for the desired track.

The Recording Device dialog opens.

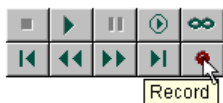


In the Recording Device dialog, make sure the SONICport is the selected device. In addition, click the **Stereo** option, then click the **OK** button.

- ④ **Next record-enable the desired track by clicking the **R** button in the Track Console.**



- ⑤ **If recording from a digital source (DAT player, MiniDisc, digital multitrack, etc.), connect the source device's S/PDIF output to the SONICport's S/PDIF IN.**  
 In addition, make sure the source device and SONICport are both configured for 44.1 kHz and 16 bit.
- ⑥ **If recording from an analog source (like a home stereo), connect the source device's audio output to the SONICport's Analog IN.**  
 In addition, make sure the SONICport is configured for 16 bit and Analog input. See *Reconfiguring the SONICport* (pg. 10) for details.
- ⑦ **Click the **Record** button in Cool Edit Pro to begin recording.**

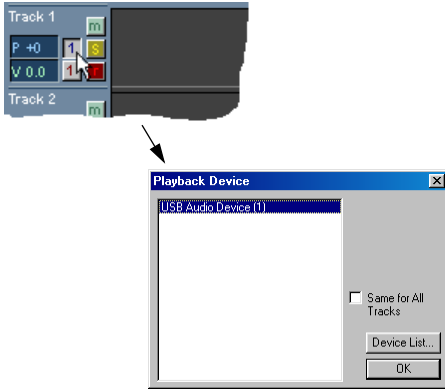


- ⑧ **Initiate playback from your audio source.**  
 If recording from a digital source, the SONICport's green input LED will become lit when receiving the audio.
- ⑨ **When finished recording, click the **Stop** button in Cool Edit Pro and stop playback from your audio source.**
- ⑩ **Choose **File>Save Session** to save the recorded file.**  
 When prompted, enter a name for the newly recorded sound file.

To play an audio file in Cool Edit Pro with the SONICport:

- ① **Choose **File>Open** to open the desired sound file.**
- ② **Make sure Cool Edit Pro is in **Multitrack View**.**

- ③ In the Track Console, click the Playback Device button for the desired track.



In the Playback Device dialog, make sure the SONICport is the selected device. Then click the **OK** button.

- ④ Connect the SONICport's S/PDIF OUT or Analog OUT to the desired destination(s).

If you will be recording the output of the SONICport, place the external recording device in record mode.

- ⑤ Click Cool Edit Pro's **Play** button.



Playback begins and the audio signal is sent to both outputs (S/PDIF and Analog) of the SONICport.

*NOTE: If using the SONICport's S/PDIF output, make sure to enable "Instant Playback" for immediate playback response times. See page 12 for details.*

- ⑥ When finished, click Cool Edit Pro's **Stop** button.

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# CHAPTER 3: Tips and Troubleshooting

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## OPTIMIZING WINDOWS SETTINGS

For critical audio transfers you may wish to adjust several System settings in Windows 98 for better performance. To access the following options, choose **Start>Settings>Control Panel** from the Windows Taskbar. Double-click the System icon, select the appropriate tab and proceed as outlined below:

- Automatic detection for inserted CD-ROMs  
Device Manager Tab: Double-click CD-ROM and select your CD-ROM drive. Click the **Properties** button, select the **Settings** tab and uncheck "Auto insert notification."
- Read-ahead optimization for hard disk  
Performance Tab: Click the **File System** button and change the "Read-ahead optimization" slider from Full to None.
- Write-behind caching for all drives  
Troubleshooting Tab: While still in the File System Properties dialog, select the **Troubleshooting** tab and check "Disable write-behind caching for all drives."

You will have to restart Windows for these new settings to take effect.

*NOTE: For optimal performance with other Windows applications, you may wish to return these settings to their default values after completing your audio transfers.*

## CORRUPTED CONFIGURATION MAP

If your computer crashes, or if you unplug your SONICport, while reconfiguring the device, its configuration info may become corrupted. If this happens the SONICport Config application will not be able to tell whether you have a DATport, SONICport, or SONICport Optical.

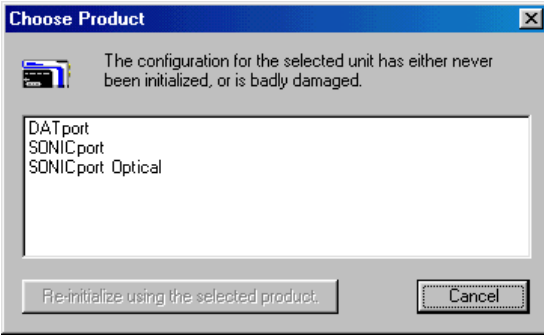


Figure 3.1: Choose Product dialog

This is not cause for alarm however. Simply launch the Config program from the Windows Taskbar, highlight the device you own and click the **Re-initialize using the selected product** button. When the Config Window opens, make the desired selections for Bit Depth and Sample Rate/Type, then click the **Set** button. See *Reconfiguring the SONICport* (pg. 10) for details.

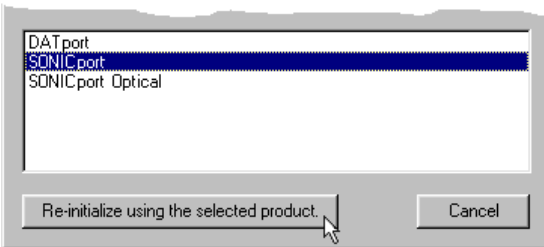


Figure 3.2: Reinitializing a SONICport

## USING BOTH SONICPORT AND DATPORT

It is possible to connect several of Opcode's USB audio devices, such as a DATport and a SONICport, to a single computer. The maximum number of devices supported is 4.

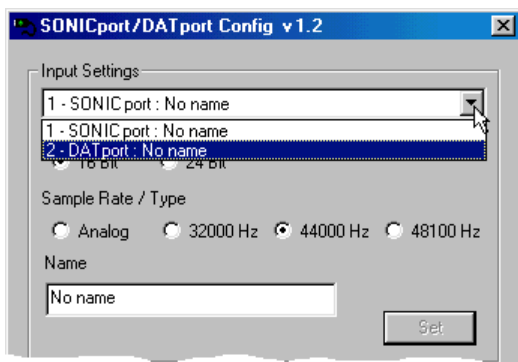


Figure 3.3: Device menu listing SONICport and DATport

Multiple devices can even have different settings for Bit Depth and Input Sample Rate, and even unique names. The device menu at the top of the Config Window determines which unit will be configured with the **Set** button. Instant Playback settings, however, are common to all connected devices.

***NOTE:** The option for **Analog** input under Sample Rate/Type only appears if a **SONICport** or **SONICport Optical** is selected from the device menu. The **DATport** does not support Analog input.*

In order to use different device types on your computer, you must have version 1.2 or later of the SONICport/DATport Config software. If you have an earlier version, remove it and install the latest version.







