

SoundSystem



4 Channel 3D Gaming

English Manual

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CE declaration

We:

TerraTec Electronic GmbH, Herrenpfad 38, D-41334 Nettetal, Germany

hereby declare that the product:

SoundSystem DMX XFire 1024

to which this declaration refers complies with the following standards or standardizing documents:

1. EN 55022

2. EN 50082-1

The following are the stipulated operating and environmental conditions for the said compliance:

Residential, business and commercial environments and small-company environments.

This declaration is based on:

test report (s) of the EMC testing laboratory



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Welcome.

We are pleased that you have chosen a sound card from TerraTec. We also congratulate you on your decision because the SoundSystem DMX XFire 1024 is a piece of high-quality, state-of-the-art sound card technology. With this product, you have acquired a powerful 3D audio accelerator which will also arouse your interest in the areas of digital I/O and MIDI. We are convinced that the SoundSystem will provide many useful services in future missions and in particular will give you a great deal of enjoyment.

***Listen. Aim. Fire.***

A3D, EAX 1.0/2.0 and the gang on the XFire 1024 either boom over headphones, or 2 or 4 speakers. The Sensaura 3D Technology guarantees maximum sound from any loudspeaker configuration thanks to its state-of-the-art DSP routines. The Sensaura core technologies of Multidrive, MacroFX and EnvironmentFX accelerate DirectSound3D, A3D and EAX 1.0/2.0 to supersonic speeds, allowing uncompromising gaming to become more than just a pipe-dream - your CPU will thank you. MacroFX, for instance, make sounds in their immediate surroundings more pronounced than has ever been possible before. So now you will finally be able to understand radio transmissions on your headphones in the cockpit of your Mig-16 and you will not be demoted for failing to follow orders.

***Digital. In. Out.***

Digital input on board the XFire 1024 can be synchronized to 32, 44.1 and 48kHz and automatically detects what is going on. The ControlPanel readily gives you information about the current status of the digital input, such as pre-emphasis and copy-protection. The digital output remains connected to the outside world at 48kHz and lets you connect to DAT recorders, Mini-Disc recorders and other equipment. Pre-emphasis and copy-protection can also be set. Even an undecoded AC3 stream can be forwarded to an external decoder via the optical output. Examples of such software DVD players would be the Cinemaster 99 / 2000 from Ravisent and PowerDVD vers. 2.55 or higher from Cyberlink. Please note that certain functions could be deactivated as soon as the full version of a program of this kind is not explicitly available to you - for example, if it originates from your graphic card package.

<b>Cyberlink</b>	<a href="http://www.cyberlink.com.tw">www.cyberlink.com.tw</a>
<b>Ravisent</b>	<a href="http://www.ravisent.com">www.ravisent.com</a>

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### **1024. MIDI. DLS.**

1 thousand voices - 1024, to be exact - are available to the MIDI conductor. 8MB and not a sample less await your arrangements, and the support of DLS 1.0 enables you to replace the original sound set with your very own individual lineup. Even the trumpets from Jericho will resound again if they are available in the form of a DLS sound set. Load it. And get started.

### **Hardware. Extras. Details.**

It's no secret that two separate CD inputs (e.g. for CD burner and CD-ROM) with their own upstream noise cancellation, headphone amplifier, microphone amplifier and wavetable connector are desirable extras that soon you will not want to do without. A signal-to-noise ratio better than -97dB and dead straight frequency paths that can only be overcome with the equalizer - no gods, no masters - provide peace and quiet.

### **ControlPanel. Software. Etc.**

With the easy-to-read and intuitive ControlPanel, we are handing you the gadget to configure DMX XFire 1024 just as you wish. Once you have chosen your settings, you can save them readily and load them again easily when needed. With the supplied software you can get started immediately in a way that suits you and your interests. MP3 files can be burned, decoded and encoded using the Musicmatch Jukebox. For more sophisticated music editing, you can use the audio and MIDI sequencer Emagic Logic Fun, and you can master wave and sample editing with Wavlab Lite from Steinberg.

We hope that you enjoy using DMX XFire 1024 and suggest that at some point you skim through this text, which we hope is entertaining. You should definitely read the short comments in this manual which are given in boxes with an exclamation mark. They contain information on important or typical settings for XFire that may make your sound routine considerably easier.

### **DMX XFire 1024. Get experienced.**

*... Your TerraTec Team!*

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## ***INSTALLATION.***

Thanks to state-of-the-art PCI and plug&play technology, the installation of your SoundSystem DMX XFire 1024 shouldn't pose a problem. If you already have experience with installing hardware and software components in Windows, you can proceed with the installation of this card without any worries.



### ***SHORT OVERVIEW***

For the professionals who want to get started ASAP, here is a short overview:

- The SoundSystem DMX XFire 1024 is a PCI card (as you no doubt have already seen) and should be installed as far away from graphic cards or SCSI controllers as possible.
- Don't worry: the poles of the connecting cable for the onboard digital input cannot be connected incorrectly.
- You will need at least 1 IRQ.
- You need a few free address ranges (usually not a problem).
- In Windows, the drivers are installed in the standard way, the drivers are on the supplied DMX XFire CD-ROM.
- After installing the driver, take a look at the Device Manager and see if there is an exclamation mark.

#### ***Tip. A good alternative: software first and then hardware!***

We would particularly like to share with you an alternative installation variation that is especially suitable for preparing a Windows system for the imminent installation of DMX XFire 1024.



**BEFORE** installing the card in your PC, execute a specific setup program: This can be found either via the autostarter (the **AUTORUN.EXE** file in the main folder of the DMX XFire CD-ROM) under "Driver Installation" or in the standard way using the path below:

For Windows 95, Windows 98:

```
<CD>:\Drivers\Win9x\SETUP.EXE
```

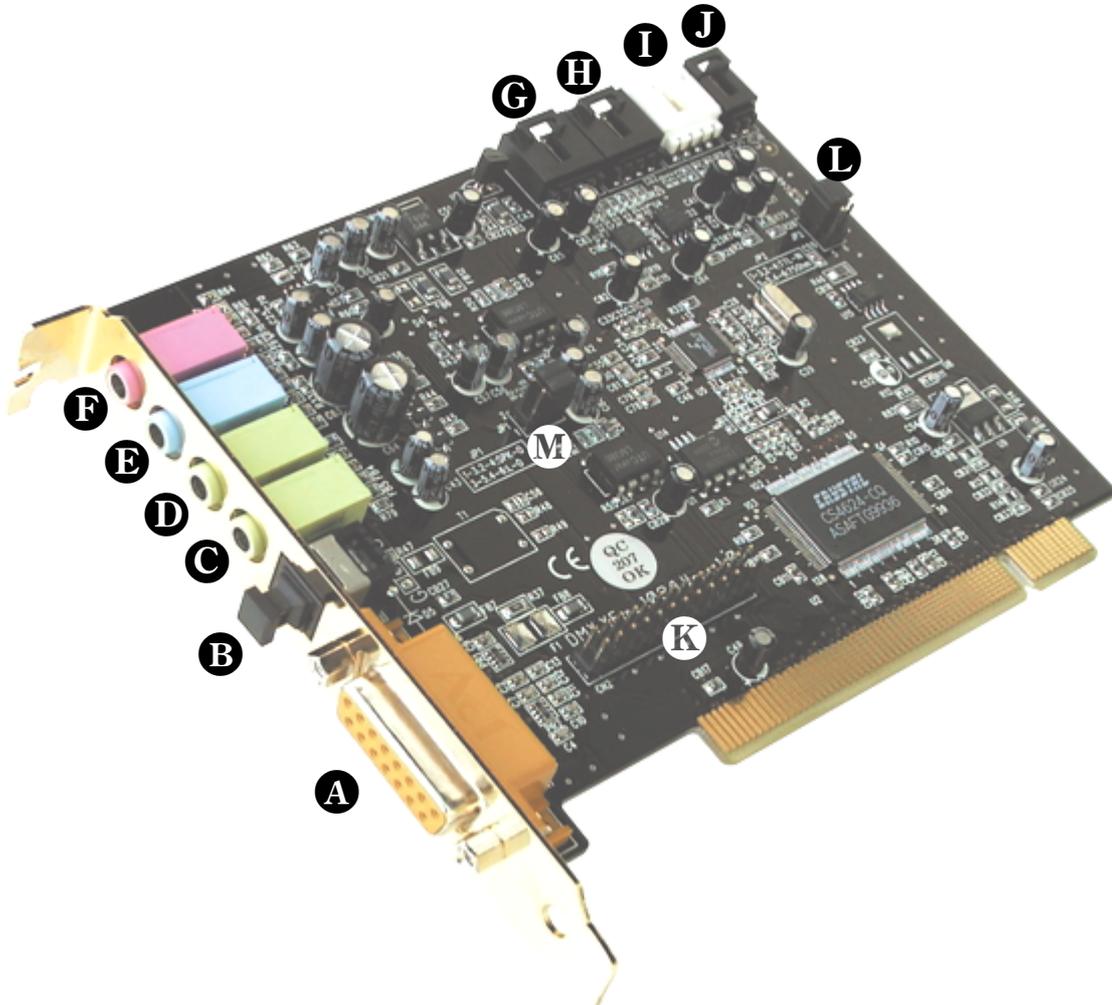
For Windows 2000:

```
<CD>:\Drivers\Win2000\SETUP.EXE
```

Only when this is complete do you install the card.

So much for the short version. A detailed description of the installation in text and pictures is given below.

## CARD DIAGRAM



- A** Game/MIDI port
- B** DIGITAL OUT
- C** OUT 2
- D** OUT 1
- E** LINE IN
- F** Mic IN
- G** CD In 1

- H** CD In 2
- I** Aux In
- J** Digital In
- K** Wavetable Xtension
- L** Jumper JP2
- M** Jumper JP1

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## **CONNECTING A WAVETABLE DAUGHTER BOARD**

If you happen to own a separate wavetable module, for example, a TerraTec WaveSystem, a module from an older TerraTec card (e.g., Maestro series), or a Yamaha DB50-XG, then these can also be used with the SoundSystem DMX.XFire1024. All you have to do is insert the 26-pin plug into the socket labeled “CN2”(Wavetable Xtension) on your XFire. **Make sure that all of the plug's pins are connected to the wavetable module.** Both connector rows must be correctly aligned.

### ***Important***

The signals of a daughter board docked with the wavetable connector flow together with the AUX signal. These are not separated electronically from one another. Therefore, simultaneous operation should be avoided where possible. If you connect two devices to “one line”, you will experience considerable signal loss of both devices. In addition, we cannot guarantee that this will not have a long-term negative effect on both devices.



The volume of the wavetable module is controlled at a later stage on the ControlPanel using the “AUX” controller.

For more information, please see the chapter “***The Wavetable Connection***” (page 53).

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## ***INSTALLING THE CARD.***

Before installing the card, ensure that, if required, you have connected any extras such as a wavetable module (you can find additional information on this starting from page **53ff**). Adding these modules at a later stage makes the process more complicated.

Before installing the sound card, please take note of any special points pertaining to the configuration of your computer. Also refer to the manual for your computer and other expansion cards for their settings.

Please observe the following instructions to ensure trouble-free installation.

If difficulties still arise, carefully reread the relevant chapter in this manual.

Please call our service hotline if you are still having problems. The telephone number and the hotline hours are given on the accompanying service sheet.

First check to ensure that the package is complete.

The delivery includes at least:

- 1 PCI sound card TerraTec SoundSystem DMX XFire 1024
- 1 installation & driver CD-ROM
- 1 audio cable (2-pin CD-ROM digital cable)
- 1 registration card with product serial number
- 1 customer service card

Return the registration card to us at the earliest possible opportunity or register online at <http://www.terratec.net/register.htm>. This is important for support and hotline services.

### **Safety Instruction**

Before opening the case, unplug the power plug from the wall socket as well as from the PC.



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**And here's what to do, step by step:**

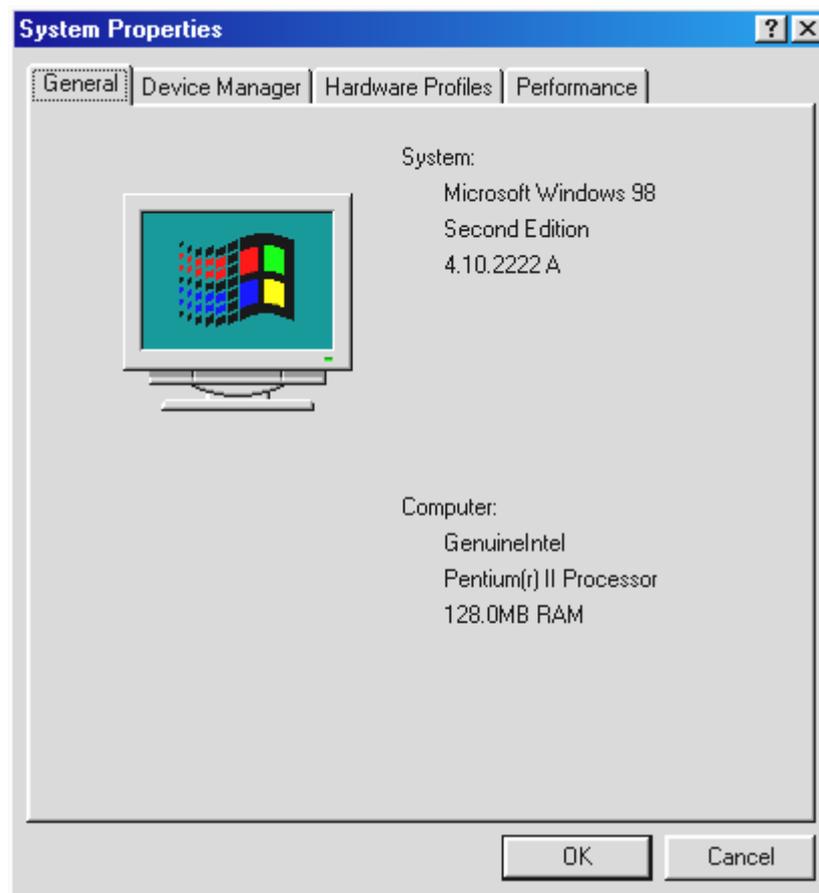
- Switch off your PC and all connected peripheral devices, such as printer, monitor and so on. Leave the AC cord connected for the time being, so that your computer is still grounded.
- Touch the metal chassis at the rear of the PC to ground yourself and discharge static. Now unplug the cord from the AC mains socket.
- Remove the cover from the case of your PC.
- Look for a free PCI expansion slot, remove the screw holding the slot blanking plate and remove the plate. To ensure optimum operation of your sound card, select a slot, where possible, that is not directly next to an existing card because some cards, e.g. graphics cards, may emit signals that could interfere with your sound card.
- Carefully remove the sound card from its packaging and pick it up by the edges with one hand while your other hand is resting on the metal of the PC case. This will ensure that your body is completely discharged via your computer without affecting the sound card. Do not touch the components of the card under any circumstances.
- If applicable, connect a wavetable daughter board and other internal audio appliances to the card. Please follow the corresponding installation instructions.
- Align the holder at the rear of the sound card in the expansion slot in such a way that the card's gold-colored connectors are directly in line with the slot's socket.
- Carefully seat the card in the slot. You might have to press the card firmly into the slot to make a good contact. Take care to ensure that the contacts are precisely in line in order to avoid damaging the sound card or the motherboard in your PC.
- Insert and tighten the screw from the slot cover to secure the sound card in its slot.
- Connect the analog or - if available - digital audio output of the CD-ROM drive to the corresponding terminals on the sound card (cable for connecting the digital input of the sound card to the digital output of the CD-ROM drive is provided). (In this regard, also read the chapter "The Analog CD-Audio Connections." on page 51 and "The Digital Input." on page 48.
- Reinstall the cover of your PC case.
- Connect the speakers or your stereo system to the sound card (in this regard, also read the chapter "The Card Connections and Their Application." on page 37).
- Reconnect the mains and all other cables. Make sure that your speakers or hifi system are set to a low volume. Start your computer.
- Then continue with the chapter "Driver Installation." (page 12).

---

## ***DRIVER INSTALLATION.***

Currently, the SoundSystem DMX XFire 1024 comes with drivers for the following operating systems: Windows 95 (incl. different service releases), Windows 98, and Windows 2000. Before installing, you must determine which operating system you are using. This is especially true for Windows 95 since there are several versions that are different from one another.

The operating system and version number can be found in the Control Panel under “System Properties”.



*For example, this is how you recognize Windows98 SE.*

In the following descriptions for installing the drivers, <CD> always represents the drive letters assigned to the CD-ROM drive containing the DMX XFire CD-ROM.

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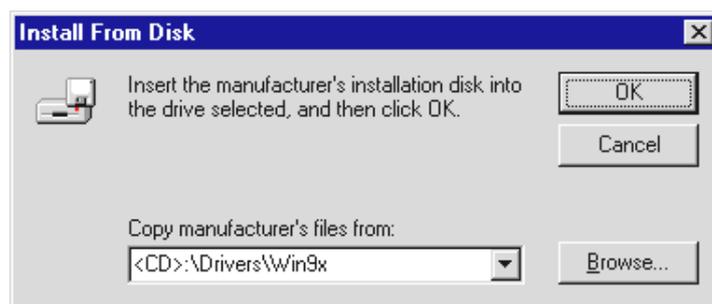
### ***Installation in Windows 95A (OSR1).***

When the SoundSystem DMX XFire 1024 is installed, Windows 95A recognizes the card as a new hardware component and displays the following screen.



*Select “Driver from disk provided by hardware manufacturer” and click “OK”.*

A prompt appears from a time when all drivers fitted on one disk ;-).



*Enter the path <CD>:\Drivers\Win9x\ and click “OK”.*

You can also use the mouse to select the path by clicking “Browse”.

Windows now installs the driver for you, documenting the process with several installation screens. At this point nothing else should occur. If during this process you are unexpectedly prompted to do something and you are unsure how to proceed, it is usually best to just press the Enter key.

If Windows asks for a driver file again, re-enter the DMX XFire CD-ROM folder given above. It may also be the case that a few other Windows features need to be installed along with the card (e.g. if this is the first sound card installation for your system). For this eventuality, please have your Windows CD handy.

After the driver has been successfully installed, it is easy to add the other bundle software via the autostarter.

`<CD>:\autorun.exe`

Follow the instructions on the screen. There shouldn't be any problems. Continue reading on page 21.

---

**Installation in Windows 95B (OSR2).**

When the SoundSystem DMX XFire 1024 is installed, Windows 95B recognizes the card as a new hardware component and displays the following screen.



*Click "Next".*



*Click "Other Locations".*



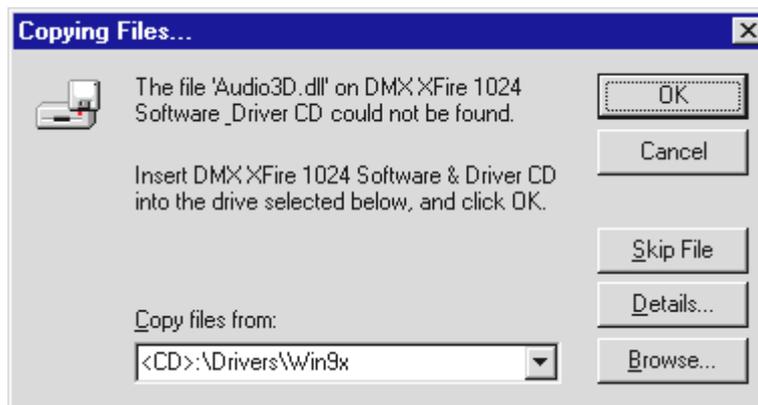
*Enter the path <CD>:\Drivers\Win9x\ and click **OK**. You can also use the mouse to select the path by clicking “Browse”.*



*If you have entered the correct path, the driver is located. Click “Finish”.*



*If this screen appears, click "OK".*



*Re-enter the path <CD>:\Drivers\Win9x\ and click "OK". You can also use the mouse to select the path by clicking "Browse".*

Windows now installs the driver for you, documenting the process with several installation screens. At this point nothing else should occur. If during this process you are unexpectedly prompted to do something and you are unsure how to proceed, it is usually best to just press the Enter key.

If Windows asks for a driver file again, re-enter the DMX XFire CD-ROM folder given above. It may also be the case that a few other Windows features need to be installed along with the card (e.g. if this is the first sound card installation for your system). For this eventuality, please have your Windows CD handy.

After the driver has been successfully installed, it is easy to add the other bundle software via the autostarter.

`<CD>:\autorun.exe`

Follow the instructions on the screen. There shouldn't be any problems. Continue reading on page 21.

---

**Installation in Windows 98, Windows 98 SE.**

When the SoundSystem DMX XFire 1024 is installed, Windows 98 recognizes the card as a new hardware component and displays the following screen.



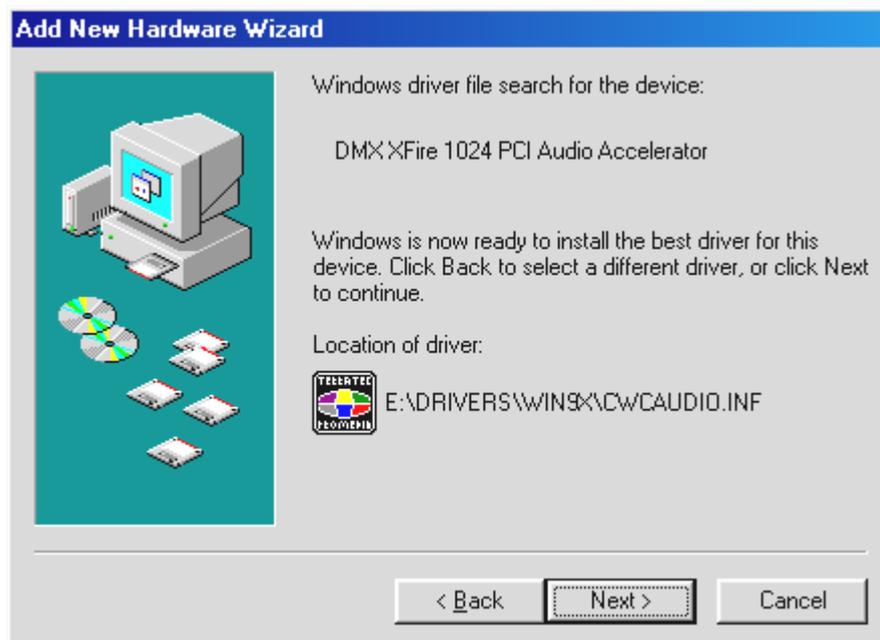
Click "Next".



Choose "Search for the best driver for your device (Recommended)" and click "Next".



*Enter the path <CD>:\Drivers\Win9x\ and click “Next”. You can also use the mouse to select the path for the best driver for your DMX by clicking “Browse”.*



*You should also click “Next” when this screen is reached.*



*To complete the installation click "Finish".*

Windows now installs the driver for you, documenting the process with several installation screens. At this point nothing else should occur. If during this process you are unexpectedly prompted to do something and you are unsure how to proceed, it is usually best to just press the Enter key.

If Windows asks for a driver file again, re-enter the DMX XFire CD-ROM folder given above. It could also be the case that a few other Windows features need to be installed along with the card (e.g. if this is the first sound card installation for your system). For this eventuality, please have your Windows CD handy.

After the driver has been successfully installed, it is easy to add the other bundle software via the autostarter.

`<CD>:\autorun.exe`

Follow the instructions on the screen. There shouldn't be any problems. Continue reading on page 21.

---

***Uninstalling the Driver in Windows 95 and 98.***

If you want to remove the driver from the system, it is best to do this ***before*** you remove the card using the program `cssetup.exe` in the file `<CD>:\Drivers\Win9x` on the DMX XFire CD.

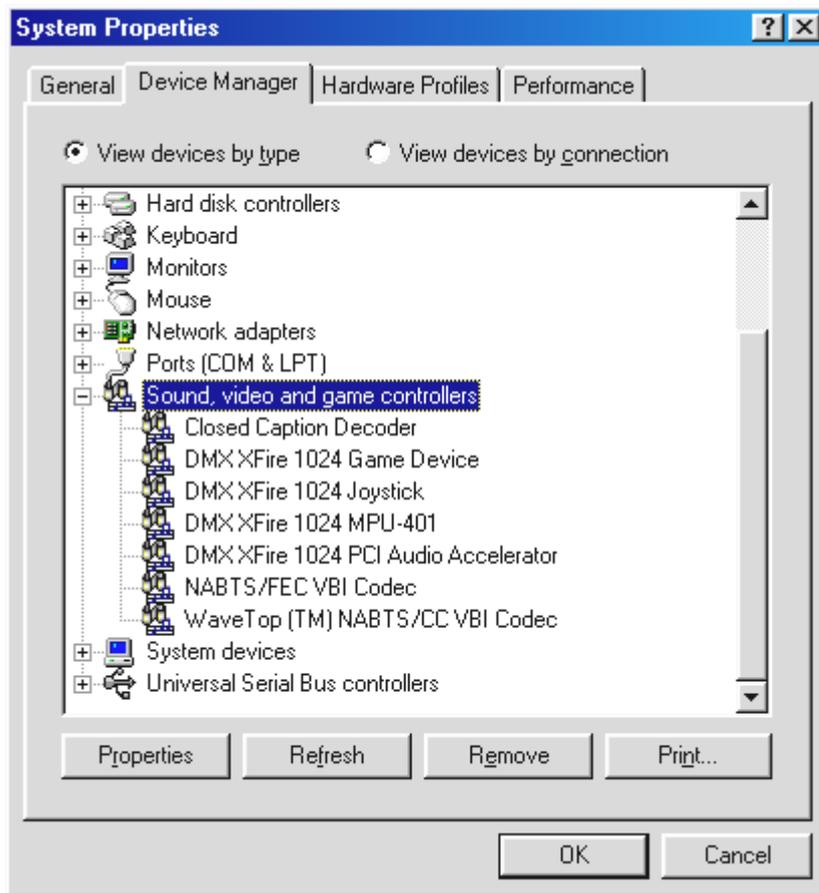


*Select "Uninstall".*

The corresponding bundle software can be removed from your system just as easily. Call up "Add/Remove Programs" in the Control Panel and locate the programs that are to be deleted. Select them one after the other and each time click "Add/Remove...".

**Driver installed – this is what it looks like.**

After the driver has been successfully installed, you should verify that everything is functioning properly with your Windows gx system. In Device Manager you get an overview of the installed and detected hardware components on your computer. The Device Manager is found in the Control Panel under “System”.

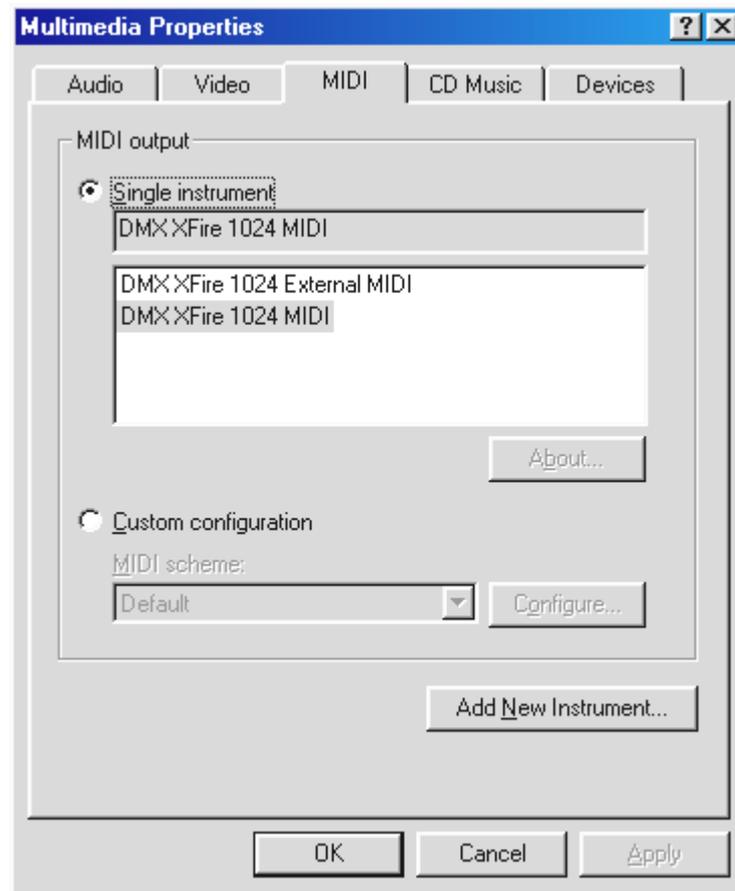


*This is how the window should look if everything has been installed properly. In the picture, the item “Sound, video and game controllers” is opened. You can do this by clicking the small “+” symbol on the left hand side.*

In case you are interested: the installed drivers are responsible for the following tasks.

<b>DMX XFire 1024 Game Device</b>	This entry is responsible for compatibility with older standards such as AdLib or SoundBlaster in DOS.
<b>DMX XFire 1024 Joystick</b>	This is where the game port base address is set – by Windows, fully automatically.
<b>DMX XFire 1024 MPU401</b>	This is where the base address of the MIDI interface is managed.
<b>DMX XFire 1024 PCI Audio Accelerator</b>	The sound center of your DMX XFire 1024. This includes the wavetable synthesizer, the WAV playback, 3D calculation and DirectSound acceleration ... in fact, everything that makes a sound from the card. No adjustments can be made, but they aren't necessary - everything can be managed easily and quickly from the ControlPanel.

Finally, you should double-check the card's MIDI settings. Take a look at “Multimedia Properties” (“Control Panel → Multimedia” and select “MIDI”. If it hasn't already been done so automatically, please set the MIDI output to the driver “DMX XFire 1024 MIDI”.



If you have other MIDI devices installed and do not want the standard output to be via the DMX XFire 1024 Wavetable Synthesizer, you can obviously select an alternative device.

---

## ***Installation under Windows NT 4.0 (min. ServicePack3)***

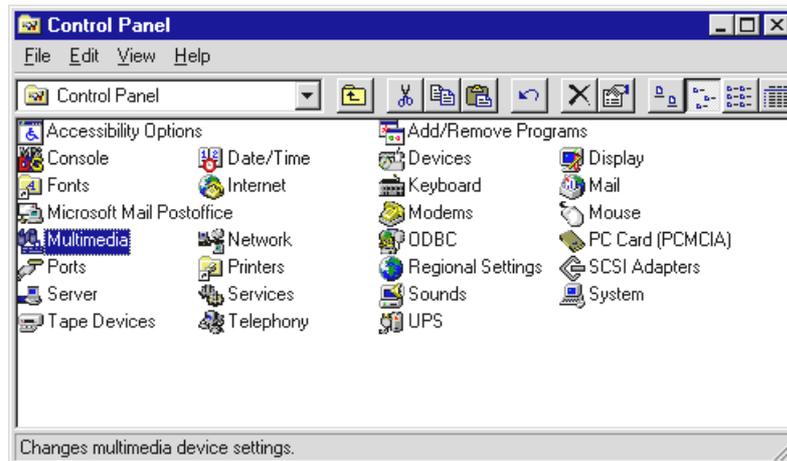
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***Please ensure that you are logged on as Administrator when installing the drivers.***

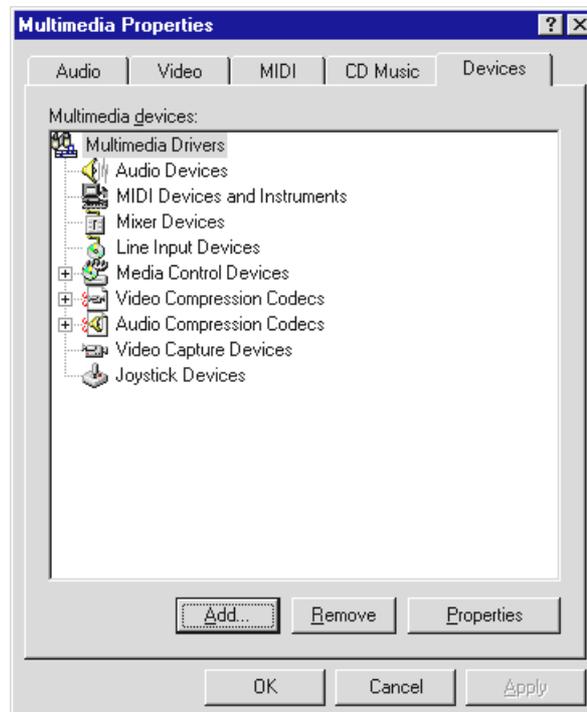
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In the following descriptions for installing the drivers, <CD> always represents the drive letters assigned to the CD-ROM drive containing the DMX XFire CD-ROM.

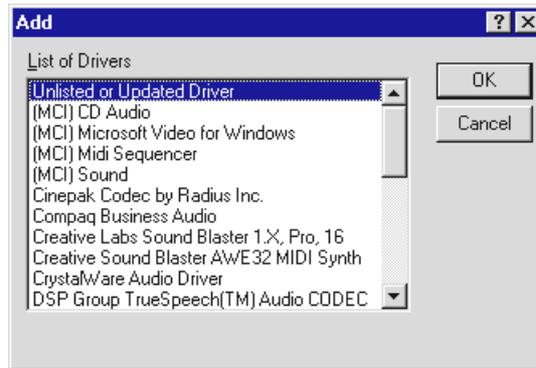
Click “Start” → “Settings” → “Control panel”.



*Select “Multimedia”.*



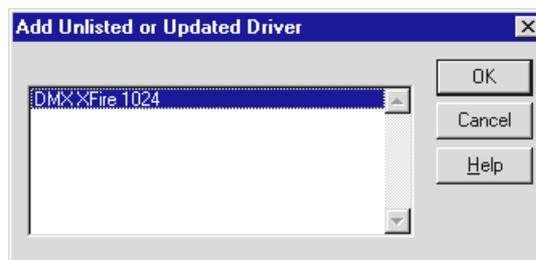
*Select the “Devices” tab and then click “Add...”.*



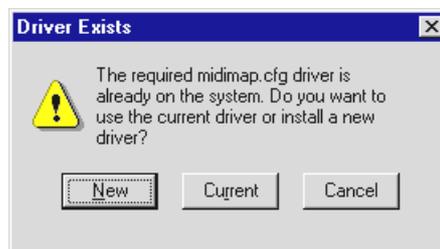
Then select “Unlisted or updated driver” and click “OK”.



Type the path <CD>:\Drivers\WinNT\ and click „OK“, or click „Browse“ to locate the correct folder using the mouse.



Select „DMX XFire 1024“ and click „OK“.



Select „New“.

After the driver installation confirm the request to restart the computer.

---

### ***Installation in Windows ME.***

If you have installed the SoundSystem DMX XFire 1024, Windows Me will first install generic drivers for DMX XFire 1024 available in the operating system. Once this installation is complete, start **AUTORUN.EXE** in the root directory of the DMX XFire CD and select the menu item “Driver installation”. This will start the setup program.



*Select “Install”.*



*Select “Restart”.*

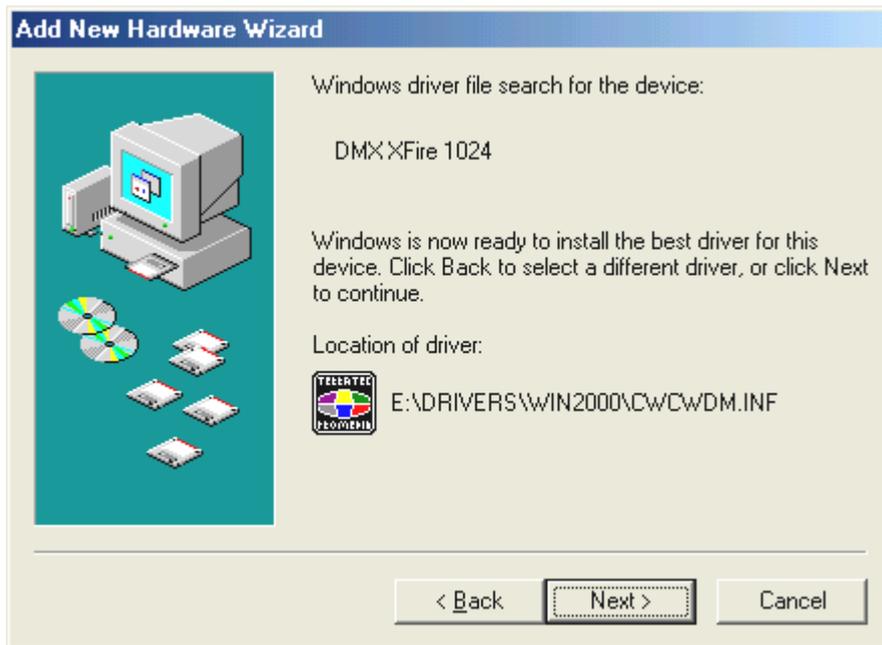
After the computer has restarted and the new hardware has been found by the Windows Me hardware Wizard the following window is displayed.



Choose “Specify the location of the driver (Advanced)” and click “Next”.



Select the “Specify a location” check box, type in the path `<CD>:\Drivers\Win2000` and click “Next”.



*You should also click "Next" when this screen is reached.*



*To complete the installation click "Finish".*

After the driver has been successfully installed, it is easy to add the other bundle software via the autostarter.

<CD>:\autorun.exe

Follow the instructions on the screen. There shouldn't be any problems. Continue reading on page 29.

---

### ***Uninstalling the driver in Windows ME.***

If you want to remove the driver from the system, it is best to do this ***before*** you remove the card using the setup program that you also used when installing the driver.

Start **AUTORUN.EXE** in the root directory of the DMX XFire CD and select the menu item “Driver installation”.

This will start the setup program.



*Select “Uninstall DMX XFire 1024”.*



*Select “Shut Down”.*

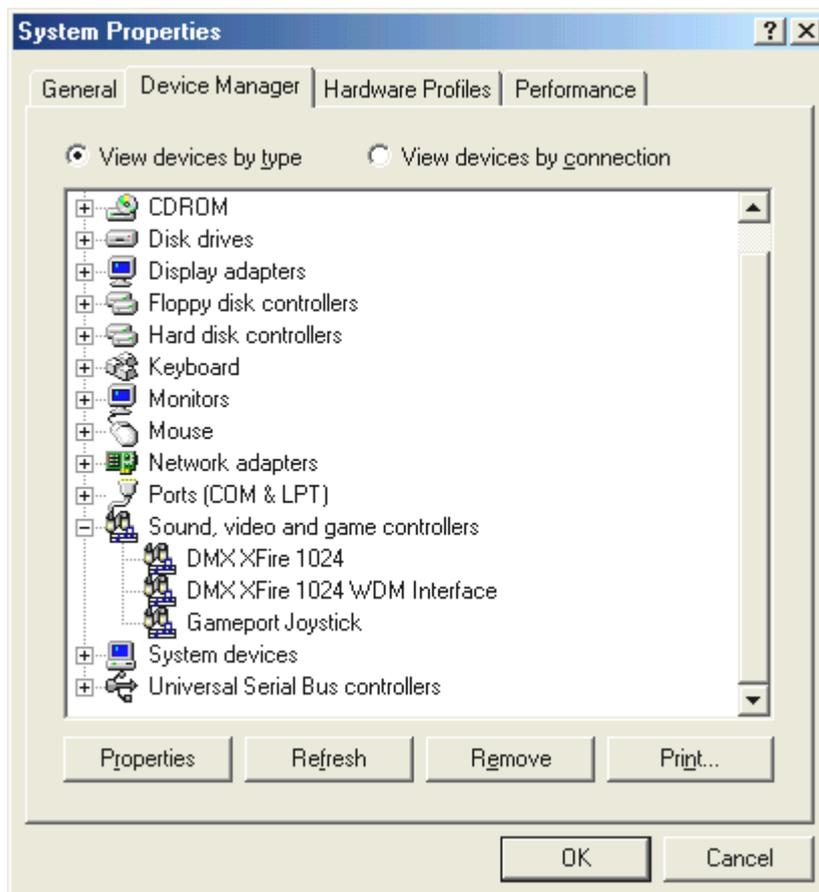
Then you can remove the card when the PC is turned off or completely reinstall the driver if this were necessary.

The corresponding bundle software can be removed from your system just as easily. Call up “Add/Remove Programs” in the Control Panel and locate the programs that are to be deleted. Select them one after the other and each time click “Add/Remove...”.

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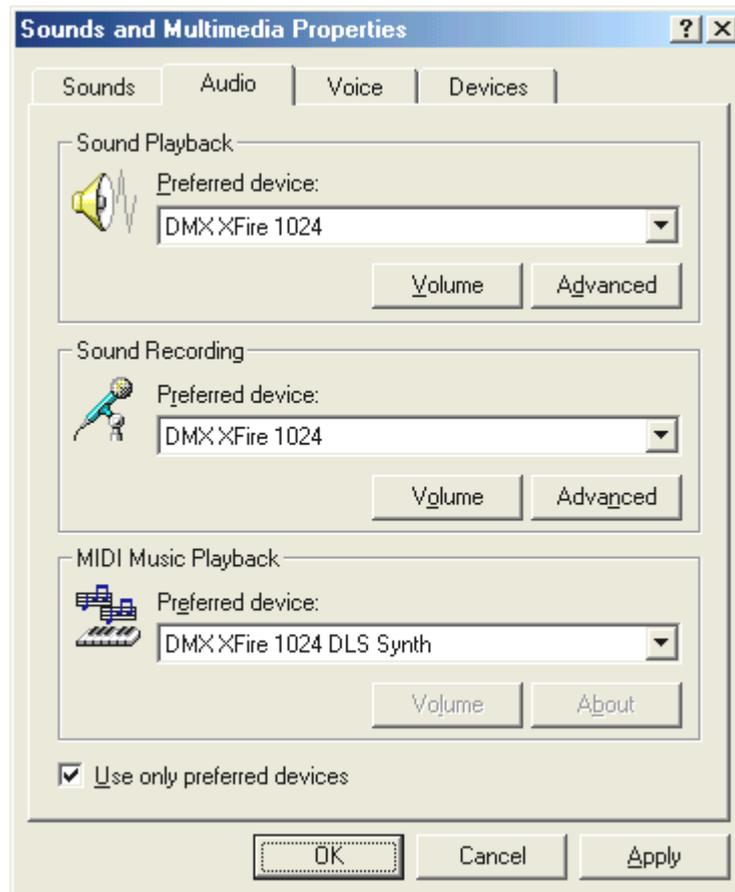
***Driver installed – this is what it looks like.***

After the driver has been successfully installed, you should verify that everything is functioning properly with your Windows Me system. In Device Manager you get an overview of the installed and detected hardware components on your computer. The Device Manager is found in the Control Panel under “System” → “Hardware”. Then click on the “Device Manager...” button.



*This is how the window should look if everything has been installed properly. In the picture, the item “Sound, video and game controllers” is opened. You can do this by clicking the small “+” symbol on the left hand side.*

Finally, you should double-check the card's settings. Go to Control Panel (“Start”-“Control Panel”) and open “Sounds and Multimedia”. Go to the “Audio” tab and compare the entries to the illustration. If it hasn't already been done so automatically, please set the MIDI output to the driver “DMX XFire 1024 DLS Synth”.



Alternatively, the external MIDI interface of DMX XFire 1024 and the Microsoft software wave-table are available.

---

### ***Installation in Windows 2000.***

If you have installed the SoundSystem DMX XFire 1024, Windows 2000 will first install generic drivers for DMX XFire 1024 available in the operating system. Once this installation is complete, start **AUTORUN.EXE** in the root directory of the DMX XFire CD and select the menu item “Driver installation”. This will start the setup program.



*Select “Install”.*



*Select “Restart”.*

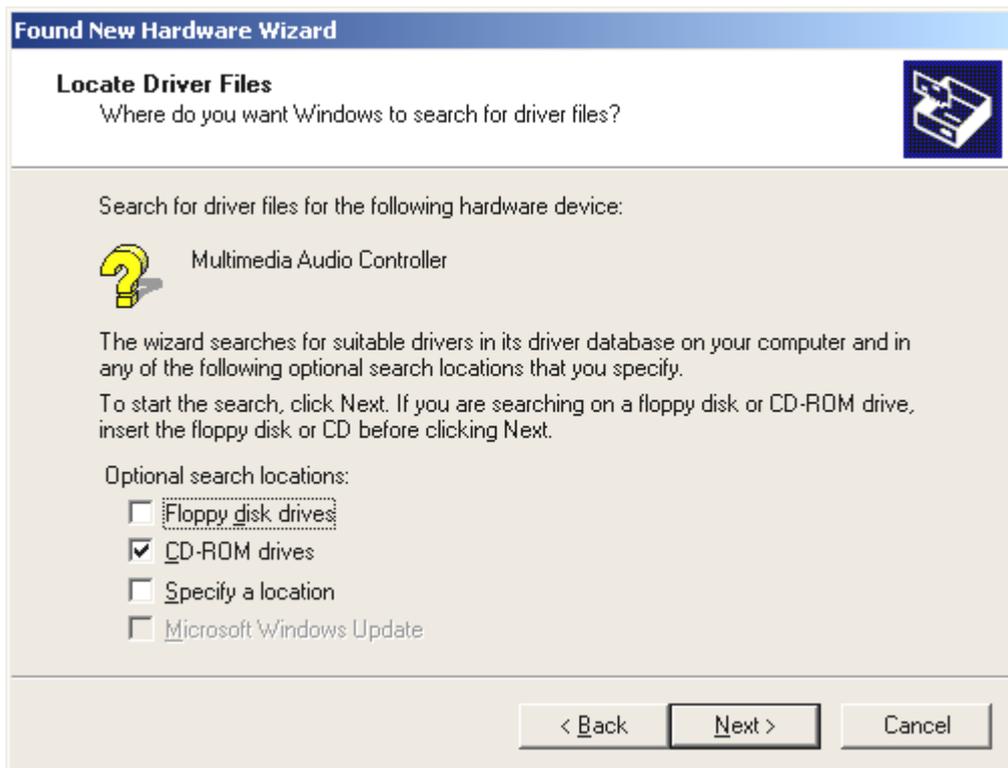
After the computer has restarted and the new hardware has been found by the Windows 2000 hardware the following window is displayed.



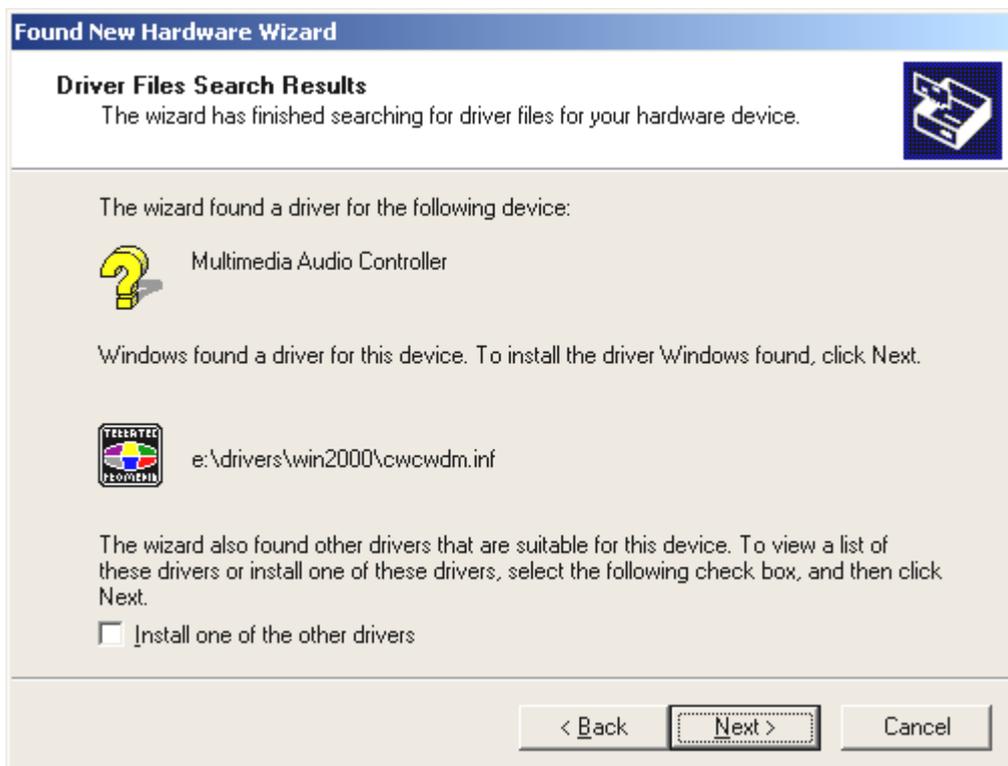
Click "Next".



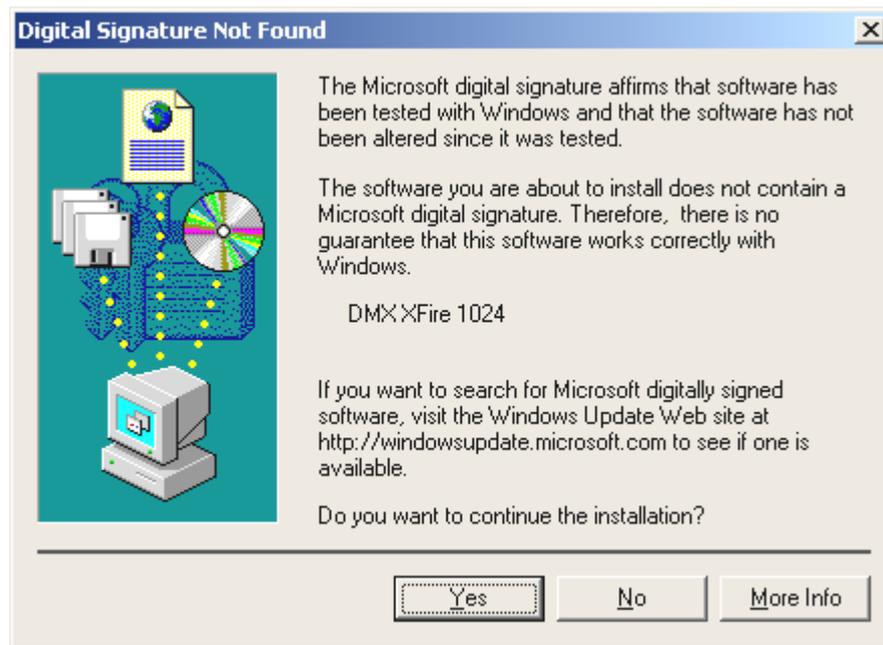
Choose "Search for a suitable driver for my device (recommended)" and click "Next".



Select the “CD-ROM drives” check box and click “Next”.



You should also click “Next” when this screen is reached.



*Proceed with the installation by clicking "Yes".*

Later in the course of the installation, a window of this kind may appear again, stay calm and collected and proceed carefully by clicking "YES".

Windows now installs the driver for you, documenting the process with several installation screens. At this point nothing else should occur. If during this process you are unexpectedly prompted to do something and you are unsure how to proceed, it is usually best to just press the Enter key.

If Windows asks for a driver file again, re-enter the DMX XFire CD-ROM folder given above. It may also be the case that a few other Windows features need to be installed along with the card (e.g. if this is the first sound card installation for your system). For this eventuality, please have your Windows CD handy.

After the driver has been successfully installed, it is easy to add the other bundle software via the autostarter.

```
<CD>:\autorun.exe
```

Follow the instructions on the screen. There shouldn't be any problems. Continue reading on page 35.

---

### ***Uninstalling the driver in Windows 2000.***

If you want to remove the driver from the system, it is best to do this **before** you remove the card using the setup program that you also used when installing the driver.

Start **AUTORUN.EXE** in the root directory of the DMX XFire CD and select the menu item “Driver installation”.

This will start the setup program.



Select “Uninstall DMX XFire 1024”.



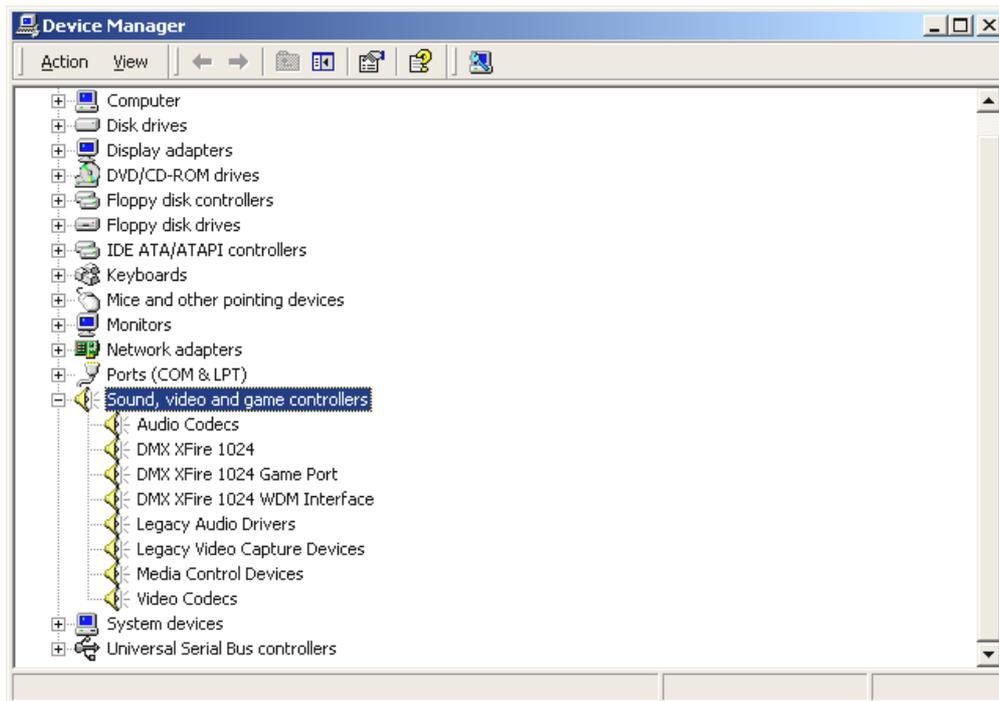
Select “Shut Down”.

Then you can remove the card when the PC is turned off or completely reinstall the driver if this were necessary.

The corresponding bundle software can be removed from your system just as easily. Call up “Add/Remove Programs” in the Control Panel and locate the programs that are to be deleted. Select them one after the other and each time click “Add/Remove...”.

### ***Driver installed – this is what it looks like.***

After the driver has been successfully installed, you should verify that everything is functioning properly with your Windows 2000 system. In Device Manager you get an overview of the installed and detected hardware components on your computer. The Device Manager is found in the Control Panel under “System” → “Hardware”. Then click on the “Device Manager...” button.



*This is how the window should look if everything has been installed properly. In the picture, the item “Sound, video and game controllers” is opened. You can do this by clicking the small “+” symbol on the left hand side.*

Finally, you should double-check the card's settings. Go to Control Panel (“Start”-“Control Panel”) and open “Sounds and Multimedia”. Go to the “Audio” tab and compare the entries to the illustration. If it hasn't already been done so automatically, please set the MIDI output to the driver “DMX XFire 1024 DLS Synth”.



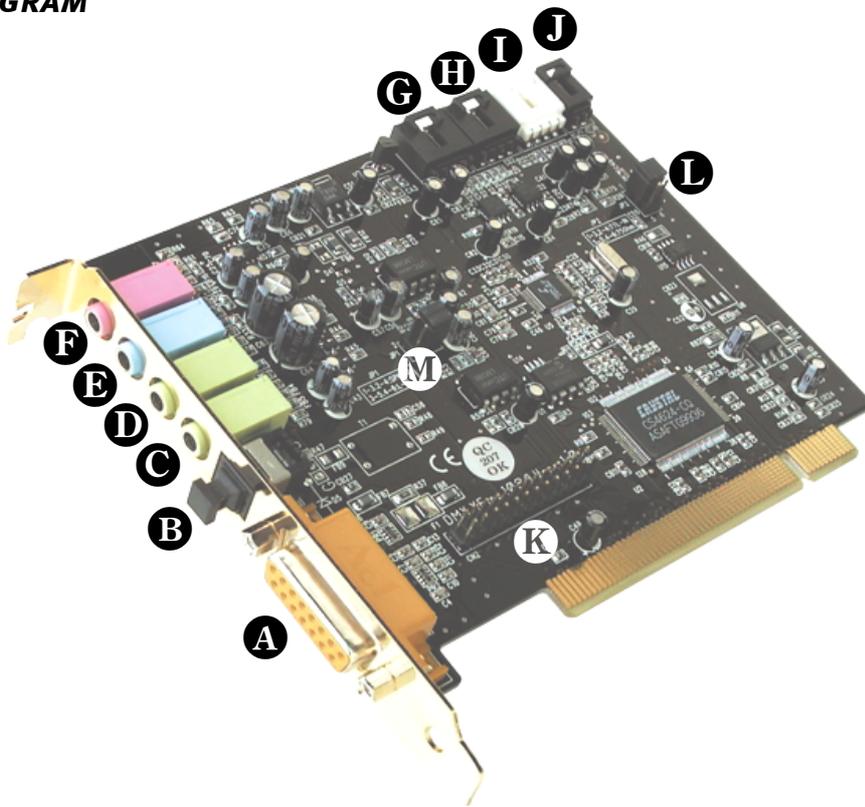
Alternatively, the external MIDI interface of DMX XFire 1024 and the Microsoft software wave-table are available.

---

## ***THE CARD CONNECTIONS AND THEIR APPLICATION.***

There are numerous connection possibilities for your DMX XFire 1024. Nearly everything that can be used with a PC regarding sound can be connected to the card and used without a problem. In the following we would like to describe in detail all the options in conjunction with the correct settings for the XFire ControlPanel. You will also find tips for the frequently used applications. If necessary, also note the information on the XFire ControlPanel in the chapter “The DMX Xfire ControlPanel.” (page 57).

### ***CARD DIAGRAM***



- A** Game/MIDI port
- B** DIGITAL OUT
- C** OUT 2
- D** OUT 1
- E** LINE IN
- F** Mic IN
- G** CD In 1

- H** CD In 2
- I** Aux In
- J** Digital In
- K** Wavetable Xtension
- L** Jumper JP2
- M** Jumper JP1

---

## **LINE OUTS.**

The line outs operate with a normal “HiFi signal”. Use OUT 1 to connect your amplifier or your active speakers. The output Out-1 can be preamplified via jumper JP1 for operation with headphones.



### ***The Basics.***

The most important connection option for a sound card - the experts all agree on this - is the playback system. The SoundSystem DMX XFire 1024 provides you with two such outputs so that you could position two stereo speaker pairs around the listener, for example. These outputs take the form of two mini-jacks (3.5mm stereo jacks). At least the first should be used to connect either a HiFi amplifier or active speakers. A “normal line level” is present at this jack labeled Out-1.



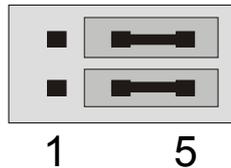
With HiFi amplifiers there are various inputs that are suitable for connecting the card. So you can, for example, keep an eye out for a connector labeled AUX, TAPE (Play), CD, or VIDEO. However, a phono input cannot be used.

If your amplifier has a connection option for digital devices in accordance with the S/PDIF standard (optical (TOS link) jack with small flap in front of it), obviously you can use this. However, only the first stereo output is available at the digital output of XFire - hard-core gamers will have to do without. You will find more information on this subject on page 46 and following.

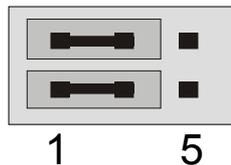
---

### **Headphones.**

Instead of using an amplifier system, you can also use headphones. The first output (Out-1) is fitted with a small (200 mW at 8 Ohm) headphone amplifier that you can activate via its own jumper (JP1) on the printed circuit board. Carefully, move the small plastic switch from position A to position B.



Position A - headphone amplifier turned off ... (line operation)



Position B - ... and activated. (headphone operation)

If you switch on the headphone amplifier and then use a HiFi amplifier or active speakers, don't worry - you won't “crash” anything. All that will happen in this case is that the background noise will sometimes be louder.

#### ***Safety Instruction.***

Please remember to switch off all (analog) devices before connecting them. This is to avoid the danger of an electric shock - even a weak one - it also protects your speaker membranes and your hearing from sudden signal spikes. For digital devices, the volume of your playback system should at least be turned to low.



---

#### 4 Speakers.

To be able to enjoy total sound over 4 speakers positioned around you, also connect the output labeled Out-2 to a (second) amplifier or active box.



Don't worry if the signal is not quite as loud when you switch to the 4 speaker mode. This is perfectly normal for this setting.

#### **Tip.**

For best results, you should give yourself the luxury of having two *identical* playback systems since sound differences in speakers can sometimes be quite extreme. If you use two systems, both equipped with sub-woofers you can also connect both bass speakers to their respective amplifiers. Low frequencies are hard to locate exactly - but when doubled in number they can be felt unevenly and more intensely. You have to have a little fun ...



#### **The Playback Driver.**

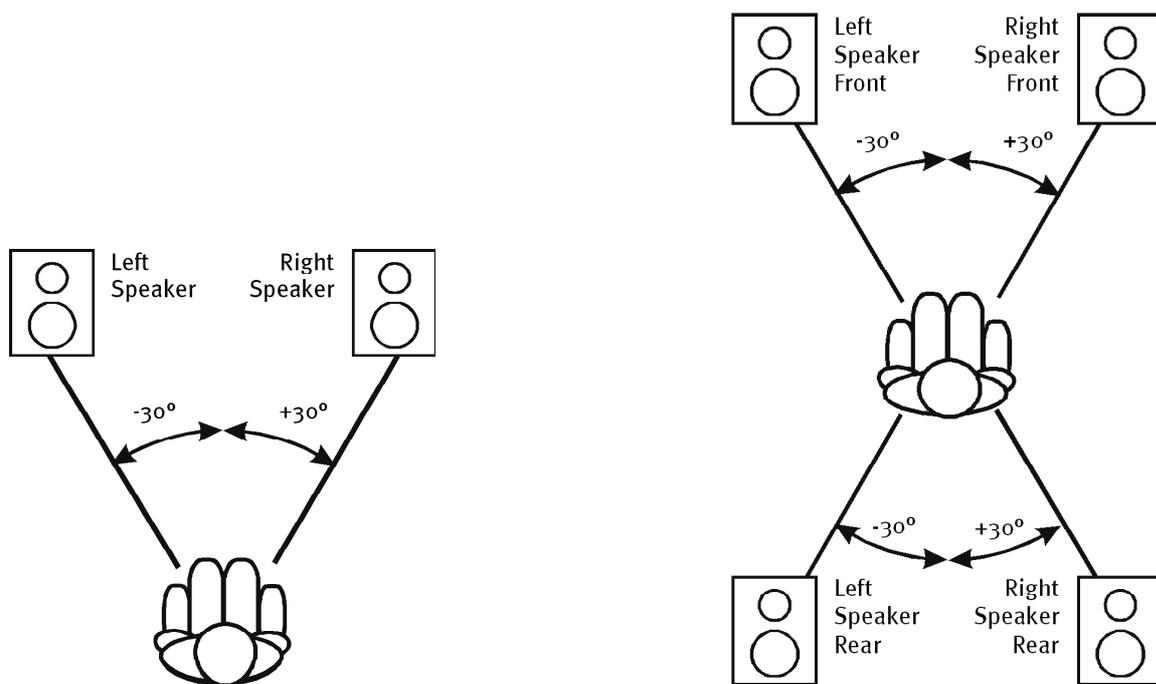
You can listen to your DMX XFire 1024 by selecting the driver “DMX XFire 1024 Wave” for playing back audio files (e.g. systems sounds, .WAV files, audio programs etc.).

---

### ***Position of the Speakers for optimum 3D Sound.***

As with processor-controlled room simulation over the speakers, the correct positioning of the speakers is also important since - as opposed to using headphones - the position of the ears is always slightly different.

The following illustration should help you to position your speakers in the optimum way.



Obviously, you don't have to hold your head at the exact angle relative to the system, that would be too uncomfortable in the long run. This is only a guide so that you can find the best position suitable for you.

The 3D sound software included with the SoundSystem DMX XFire 1024 and the ControlPanel give you the option of choosing from 3 different playback modes, which you should bear in mind as far as possible. The exact position of basic algorithms differs greatly depending on the application. Therefore: setting the playback to 4 speakers and then putting on headphones is pointless.

### ***Internal Output Jack Taps.***

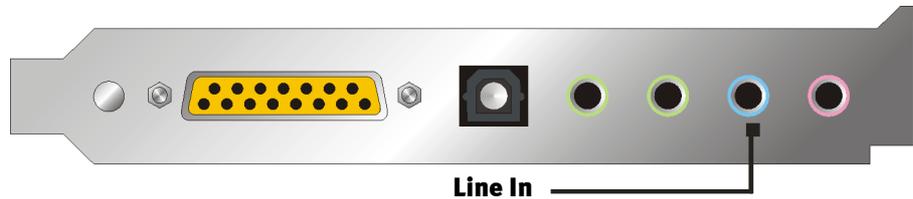
Last but not least, we would like to bring your attention to the internal taps located behind both output jacks. These can be used to divert the audio signal from the jack and *alternatively* for internal connections. There are, for example, front modules with control options on the front of the PC which make use of these connections.

---

## **LINE INPUT.**

### ***The Basics.***

You can make recordings from analog audio sources, such as cassette players, video recorders or vinyl players (record players), via the input of your DMX XFire 1024 labeled Line In.



The connection is made using a mini-jack (3.5 mm stereo jack) which you connect to the TAPE Recorder output of your amplifier or the AUX SEND path of a mixing unit, for example. The input sensitivity is adjustable and is designed so that the maximum recording level is reached at a signal level of approx.  $2 V_{RMS}$  if the corresponding recorder controller is set to 0dB in the ControlPanel.

When recording, select the recording source "Line In" in the DMX XFire ControlPanel under "Record".

### ***Safety Instruction.***

Please remember to switch off all (analog) devices before connecting them. This is to avoid the danger of an electric shock - even a weak one - it also protects your speaker membranes and your hearing from sudden signal spikes.



### ***Connecting and Recording from a Record Player.***

At the moment, it is very "hip" to archive and restore vinyl or shellac recordings. With the SoundSystem DMX XFire 1024 you are well-equipped to make high-quality audio recordings. The package also contains recording and editing software: Steinberg's Wavelab Lite. When connecting record players, there are a few particulars that you need to know and we will tell you about them in the following.

You cannot directly connect a record player to a sound card such as DMX XFire 1024 because record players – technically limited by the system – send out a useful signal that is too low and extremely unbalanced. Therefore, it is absolutely necessary to interconnect a phono-amplifier (HiFi amplifier with phono-input or a special phono-amplifier with optimized equalizer). If a HiFi amplifier is used, then there is usually a TAPE Record output that you can connect to the SoundSystem DMX XFire 1024.

If your amplifier does not have a phono-input, we recommend the TerraTec phonoPreAmp, a high-quality phono-amplifier that already has the right plug for connecting to the Line input of DMX XFire 1024.



You can find more information at <http://www.terrateg.net/>.

Software for digitizing and editing your recordings is included on the sound card: the program WaveLab Lite from Steinberg is designed for editing large files and should present no problems even for beginners due to its intuitive operation. However, customary audio software alone is not completely suitable for tasks related to sound restoration. Along with the normal functions such as editing, equalizing (working with the equalizer) and volume control, there are other functions that you need such as a “de-noiser”, “de-scratcher”, “loudness maximizer” as well as types of special spreaders and softeners. Last but not least, the ability to burn CDs would be desirable. All of these functions are contained in specialized software which you can obtain, for example, from the following leading manufacturers:

<b>Algorithmix</b>	<a href="http://www.algorithmix.com">www.algorithmix.com</a>
<b>Dartech</b>	<a href="http://www.dartech.com">www.dartech.com</a>
<b>Diamond Cut Productions</b>	<a href="http://www.diamondcut.com">www.diamondcut.com</a>
<b>Sonic Foundry</b>	<a href="http://www.sonicfoundry.com">www.sonicfoundry.com</a>
<b>Steinberg</b>	<a href="http://www.steinberg.net">www.steinberg.net</a>

### ***Internal Input Jack Tap.***

Last but not least, we would like to bring your attention to the internal tap located behind the input jack. This can be used to divert the audio signal from the jack and *alternatively* for internal connections. There are, for example, front modules with control options on the front of the PC which make use of these connections.

---

## **MICROPHONE INPUT.**

The MIC input is only for connecting commercial capacitor microphones (with or without batteries). The input sensitivity is approx.  $0.1 V_{RMS}$ .



### ***The Basics.***

Microphone recordings, e.g., for speech recognition or Internet telephony can be made using the MIC labeled input on your SoundSystem DMX XFire 1024. Use either a commercial capacitor microphone or headset with a mono-jack (3.5 mm mini-jack).



You can control the sensitivity in the ControlPanel for XFire 1024. There is also a switch for the installed pre-amplification of the microphone input. This knob - labeled “Boost” amplifies the signal by +20dB, but also causes more noise.

### ***Safety Instruction.***

When using the microphone, unpleasant feedback can occur suddenly (loud whistling) which can be bad for your speakers as well as your hearing. Always reduce the volume when first using a microphone and increase the volume carefully if necessary.



---

### ***Misunderstandings***

To avoid misunderstandings: quality miracles should not be expected from a “sound card” microphone input – not even one from TerraTec ;-). Please note that the microphone input does not support a microphone with phantom powering (48 V for the power supply). These devices are used in professional studios and live on-stage and usually have a 6.3 mm jack or 3-pin XLR plug –. Save yourself time and money by making a mini-jack adapter yourself. If you are planning to make a recording of professional quality (e.g. for voice, song or instrumental recordings), there's no getting around professional auxiliary peripherals. Dedicated microphone boosters or mixing units with the corresponding inputs and AUX Send paths (or sub-groups) can be purchased at any music store.

Also note that the microphone input for the SoundSystem DMX XFire 1024 is mono.

### ***Internal Microphone Input Tap.***

Last but not least, we would like to bring your attention to the internal tap located behind the microphone jack. This can be used to divert the audio signal from the jack and *alternatively* for internal connections. There are, for example, front modules with control options on the front of the PC which make use of these connections.

---

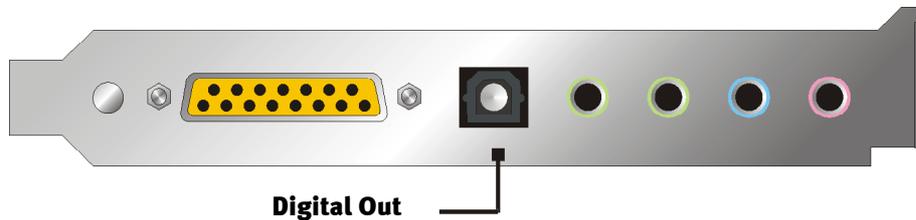
## ***THE DIGITAL OUTPUT.***

The digital output supplies a standard S/PDIF signal at 48 kHz for consumer devices. These include, for example, digital amplifiers, MiniDisc recorders or DAT recorders.



### ***The Basics.***

If you want to digitally transfer music from the computer to other devices, use the optical digital output (also frequently called TOS Link).



There are three different modes for digital output in the ControlPanel of the SoundSystem under “Digital I/O” → “Digital output”.

- Software DVD (AC-3) – with this setting you can forward undecoded AC-3 data to an external decoder – note that it is clear from the software documentation that this capability supports our XFire: either explicitly as “DMX XFire 1024”, as “Crystal Soundfusion” or as “CS4624 / CS4630”.
- Digital In Source Direct – permits you to forward 1:1 data present at the digital input to the digital output, i.e. in this mode, the frequencies 32 kHz and 44.1 kHz are also output at the digital output. It is not possible to adjust the volume.
- Digital Mix – with this setting you can output all digital sources (Wave, MIDI, digital input) at the digital output at 48 kHz. Note that the analog sources cannot be output directly. Thus, background noise, still low at this point, (such as noise from a microphone connected to MIC) cannot be forwarded to the digital output.

---

**Tip.**

Devices such as MiniDiscs operate at a sample rate of 44.1 kHz. However, the digital output of DMX XFire operates at 48 kHz in the “Digital Mix” setting. To guarantee fault-free (“drop-out”-free) recording, your MiniDisc device must have its own sample rate conversion (SRC).



The volume of the digital signal can be adjusted using the corresponding controller for the source in the playback window of the ControlPanel – i.e. if you want to change the volume, use the WAVE controller. Note that this controller not only audibly affects the playback volume (in monitoring), it also changes the digital signal. However, the equalizer does not affect the signal at the digital output.

A digital recording *with* the SoundSystem DMX XFire will not be affected by the above settings.

**Copy Protection.**

It is possible to protect your recording from being copied on other devices by adding a copy protection ID. This makes sense if, for example, you record a composition on DAT or MiniDisc as a demo but do not want further (digital) copies to be made. To do this, activate the “Copyright Bit” button for the digital output on the Digital I/O page of the ControlPanel.

**Backup.**

The digital interface of the SoundSystem as well as the accompanying software cannot be used for backup on DAT. In principle, this can be done, however cheaper backup options such as CDs are common today and are less time intensive.

More valuable information on the digital interface and the use of digital cables can be found in the next chapter “The Digital Input”.

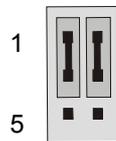
Therefore, keep reading if you please ... ;-)

## THE DIGITAL INPUT.

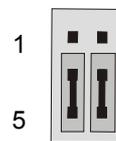
The digital input can be adapted to 2 different signal levels via the jumper (JP2). In the jumper position S/PDIF In, the digital input corresponds to the S/PDIF standard known from consumer devices, such as MiniDisc or DAT recorders. The jumper position TTL is intended for connecting the digital output of most CD-ROM drives because these usually operate with TTL levels.



Jumper (JP2).



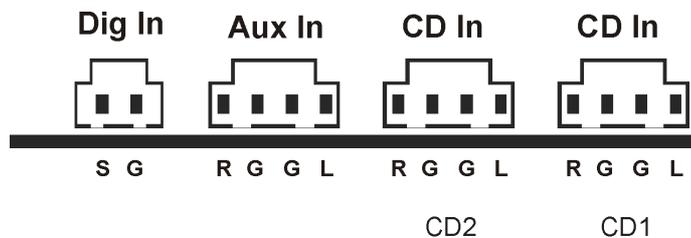
Position A - TTL-In (standard)



Position B – S/PDIF In

### The Basics.

If you want to connect devices to the digital output on the SoundSystem DMX XFire 1024, use the illustrated 2-pin connection on the printed circuit board (next to Aux In). To connect the digital output of your CD-ROM drive, use the supplied connection cable which ensures correct polarity.



The digital interface of DMX XFire 1024 operates at all conventional standard frequencies with a 16-bit resolution, i.e. 32, 44.1 and 48 kHz.

To be able to work with the digital input, you should first ensure that this has also been activated. Go to the “Digital I/O” tab in the ControlPanel and in the field “Digital input” select either

“Always on” – in this case, the digital input is always active, regardless of whether or not a signal is actually present.

or

“Automatic” – the signal input is only activated when data is actually present.

---

**For digital recording.** The signal at the data input can be recorded via the “Stereo Mix” recording source in the record window of the XFire ControlPanel. Select “DMX XFire Wave” as your recorder driver in your recording application. During the recording, ensure that sources that you don't want to record are muted in the playback mixer of XFire. By the way: Any copy protection that is present (SCMS or CopyProtection bit) will be ignored and not recorded.

### ***STUFF WORTH KNOWING***

Even when transmitting audio data via optical fibers (optically) a few, usually inaudible, errors may occur. You should ensure that you choose high-quality cables that are not too long (optical fiber glass cable up to approx. 2 m). Ensure that the cable is free of kinks.

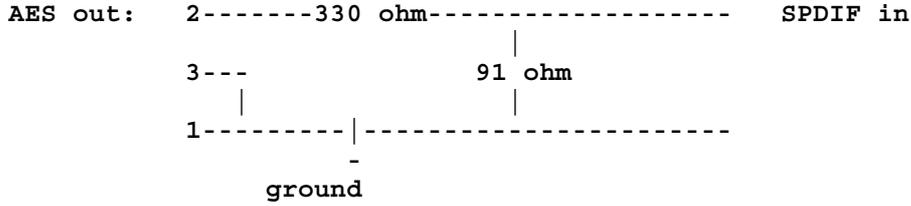
Audio differences with digital cables seem improbable at first glance, but they can happen nevertheless. This is proven, among other things, by the fact that error correction algorithms are obviously used more frequently at some times than at others to correct cables of differing qualities. In any case these audio changes are usually so minimal that you need to be careful not to mix up the myth with the reality. If you are interested: there are many somewhat entertaining militant newsgroups dealing with this subject on the Internet ;-).

Last but not least, some info on the transmission protocol: Only data following the S/PDIF (Sony/Philips digital interface) standard is transmitted over the optical interface. The use of ADATs or compatible devices is not supported.

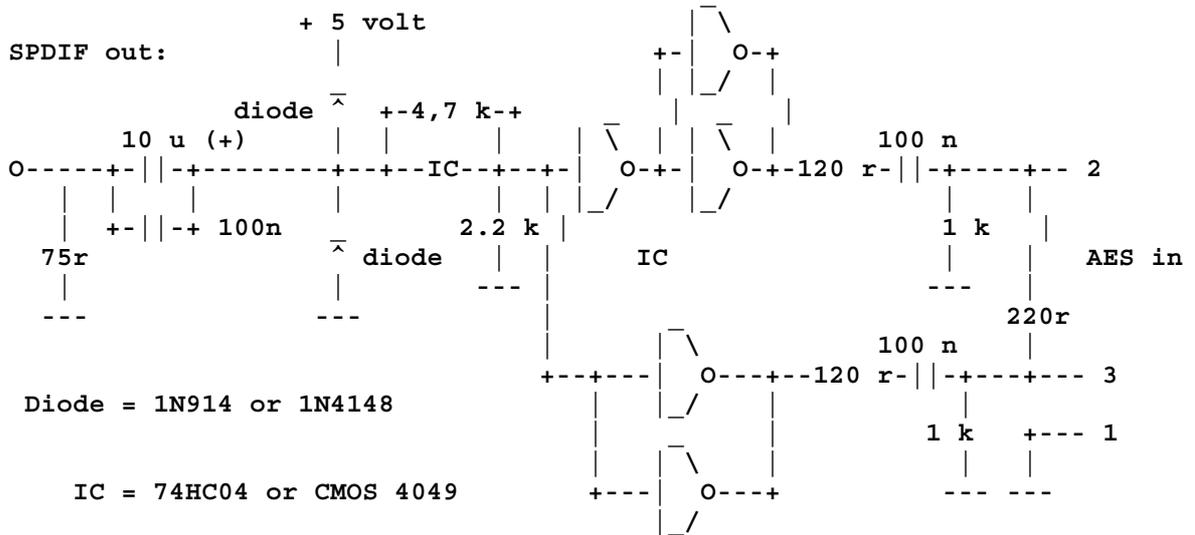
Also, devices with AES/EBU interfaces cannot normally be operated - ambitious tinkering with pure adapters doesn't get you anywhere. Because the AES/EBU protocol is nearly identical to S/PDIF and the transmission essentially only differs in the signal strength, you can make your own converter with just a little soldering.

A small circuit diagram and other information can be found at the following location on the Internet: <http://www.hut.fi/Misc/Electronics/docs/old/spdif.html> (see also the following diagram).

## AES/EBU to S/PDIF



## S/PDIF to AES/EBU



**Please note.** We do not guarantee in any way the safety or the functioning of this circuit. Nor can we give any technical support for its implementation.



---

## THE ANALOG CD-AUDIO CONNECTIONS.

The SoundSystem DMX XFire 1024 provides two separate connections for the analog output of your CD drives. In the XFire ControlPanel, these can be found on the controller labeled “CD”.

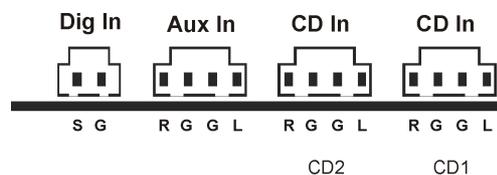


### The Basics.

A particularly smart feature of the SoundSystem DMX XFire 1024 is the option of connecting two CD drives (e.g. your CD-ROM drive and a CD burner) to the card without any signal loss. The inputs CD1 and CD2 are electrically separated from one another and combined in the mixer. The volume control for both is labeled “CD”.

When recording from a CD drive, select the “CD” setting in the ControlPanel under “Record”.

The connector jacks are compatible with the widely available MPC<sub>3</sub> standard. The pin configuration of the signal and ground circuit is shown in the following:



Suitable cables usually come with your CD drive or can be purchased at most computer stores.

If you need independent volume control for both your drives, you can use the DMX XFire 1024 AUX input as an alternative. In any case, the input sensitivity here is pretty much the same: approx.  $1.5 V_{RMS}$  for the CD inputs, approx.  $1 V_{RMS}$  for the AUX input. For recording both sources, select the “Stereo Mix” setting in the XFire ControlPanel under “Record”.

---

## THE AUX INPUT.

The SoundSystem DMX XFire 1024 comes equipped with an internal audio input for video cards, for example. You could also connect a CD drive here. It has a separate volume control on the XFire ControlPanel.

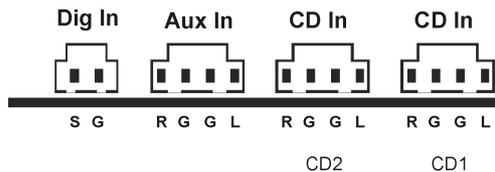


### The Basics.

The SoundSystem DMX XFire 1024 is equipped with a further input for additional PC peripherals. A video/grabber card or the analog audio output of a DVD card can be connected at the internal AUX input, for example. It is also possible to connect another CD drive, but the input sensitivity for the AUX connection is slightly higher than for the CD inputs (approx.  $1 V_{RMS}$  for the AUX input, approx.  $1.5 V_{RMS}$  for the CD inputs).

The volume control is found on the XFire ControlPanel under the controller labeled “AUX”. When recording, select the setting “AUX” under “Record”.

**Important:** The signals of a daughter board docked with the wavetable connector flow together with the AUX signal. Contrary to both CD inputs, these are not electrically separated from one another. Therefore, simultaneous operation should be avoided where possible. If you connect two devices to “one line”, you will experience considerable signal loss of both devices. In addition, we cannot guarantee that this will not have a long-term negative effect on both devices.



The connector jack is compatible with the widely available MPC3 standard. The pin configuration of the signal and ground circuit is shown in the following:

A suitable cable usually comes with the product or can be purchased at specialty stores.

---

## ***THE WAVETABLE CONNECTION AND THE INTERNAL SYNTHESIZER.***

The SoundSystem DMX XFire 1024 is equipped with a connection for wavetable daughter boards. Installation instructions can be found on page 9 in the chapter “Connecting a Wavetable Daughter Board”. The volume control is found on the ControlPanel under the controller labeled “AUX”.



Simply follow the instructions for installing a wavetable daughter board described on page 9 in the chapter “Connecting a Wavetable Daughter Board”. The volume control is found on the ControlPanel under the controller labeled “AUX”. When recording, select the setting “AUX” in the DMX XFire ControlPanel under “Record”.

**Important:** As was already discussed in the chapter “The AUX Input”, the signals of a daughter board docked to a wavetable connection run concurrently with the AUX signal. Contrary to both CD inputs, these are not electrically separated from one another. Therefore, simultaneous operation should be avoided where possible. If you connect two devices to “one line”, you will experience considerable signal loss in both devices. In addition, we cannot guarantee that this will not have a long-term negative effect on both devices.

### ***Information on the integrated wavetable and the future of sound synthesis.***

The SoundSystem DMX XFire 1024 plays MIDI files over a wavetable synthesizer (hardware with 48 voices) integrated into the chip set. The future of (General MIDI) wavetable technology lies with host-based software synthesis, according to the experts. Sound synthesis should regain in popularity with the introduction of DirectMusic because it will enable music and MIDI to take on an interactive form in applications such as games. The DLS format used here for the sample sets is completely supported by DMX XFire 1024. Some applications currently already use the GS sound set from the popular SoundCanvas series which is licensed by Roland and integrated into new versions of DirectSound.

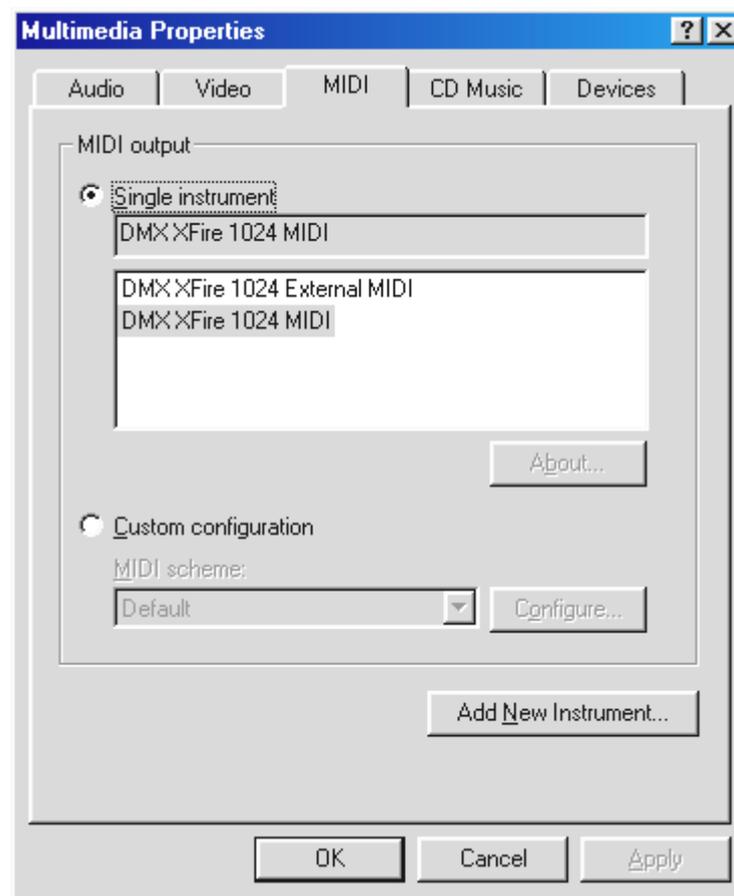
But it should be noted that no SystemExclusive parameters can be processed.

And finally, on this card there is a connection for an additional wavetable daughter board. The WaveSystem series is available as an option for this purpose. However, modules from other manufacturers – such as Yamaha's DB-50 XG or Roland's SCD-10/15 – can also be operated with DMX XFire 1024 without any problems.

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### **The MIDI Driver.**

A separate driver is available for the playback of MIDI information via an external Wavetable module. This driver, in the system labeled “DMX XFire 1024 External MIDI”, can be selected anywhere where it would make sense to use it. Thus, for example, this module output is also available in sequencer programs such as Logic (Fun), Cubase or Cakewalk for the internal synthesizer, in addition to the driver “DMX XFire 1024 MIDI”. This driver is also used when externally-connected devices are played from the GAME Port. If MIDI files are to be played over the media playback of Windows – or if you use programs that do not permit additional MIDI settings – you should open “Multimedia Properties” in the Windows Control Panel and set the MIDI output to the corresponding driver (see illustration).



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## ***THE JOYSTICK/MIDI INTERFACE.***

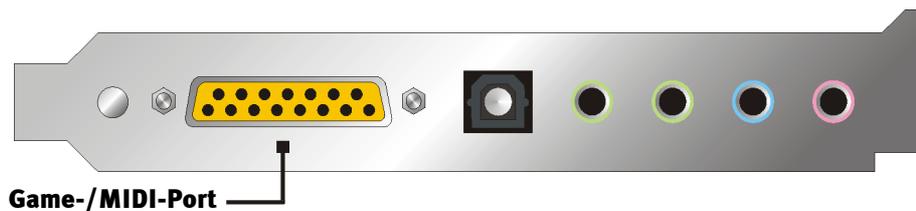
Analog and digital joysticks can be connected to the SoundSystem DMX XFire 1024 GAME/MIDI port –. MIDI devices can also be connected using an optional adapter. The interface is controlled via a DirectInput-compatible driver.



### ***The Basics.***

The SoundSystem DMX XFire 1024 provides a combined port for old joysticks and modern input devices: ForceFeedback joysticks, gamepads, flightsticks, wheels and all those important things.

Using optional adapter cables, you can connect several devices to the GAME Port. The driver-side support for Microsoft DirectInput specifications permits faster access to the hardware and additional features, e.g. the transmission of ForceFeedback control signals.

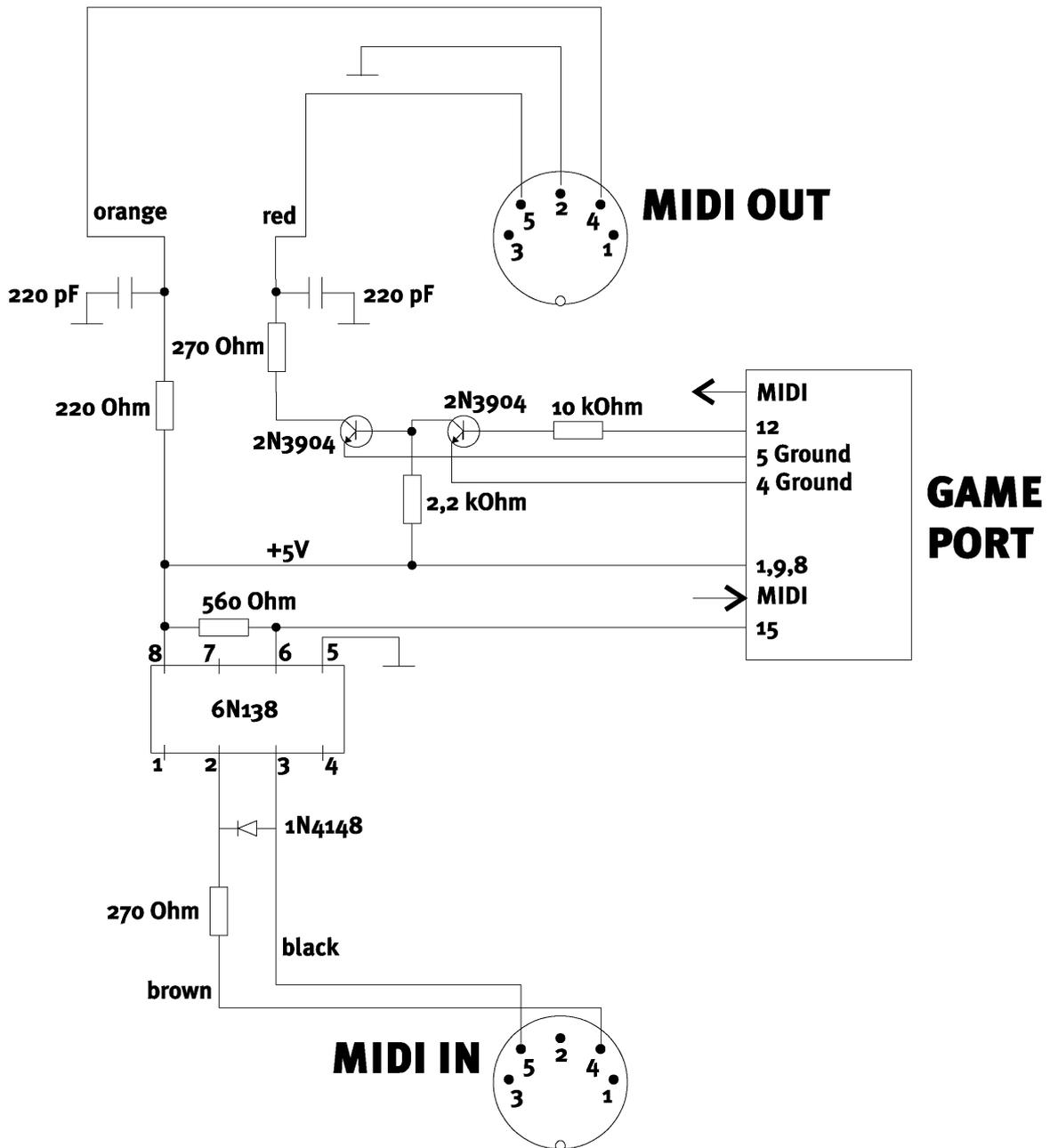


### ***MIDI***

Even MIDI devices can be connected to DMX XFire 1024 via an adapter cable. This cable is available as an optional extra in specialty stores or directly from TerraTec. Please visit our On-line Shop at <http://www.terratec.net/>.

We are frequently asked for a circuit diagram for such an “Adapter cable”, so we have collected the necessary information below. As you can see, it is a GAME Port / MIDI adapter and not just a simple cable. You will require additional components such as optocouplers and transistors. For this reason, we suggest that you acquire the parts from an electronics store – they don't cost the earth.

## The Circuitry of the MIDI Interface



**Please note.** We do not guarantee in any way the safety or the functioning of this circuit. Nor can we give any technical support for its implementation.



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## ***THE DMX XFire CONTROLPANEL.***

The description of the DMX XFire ControlPanel is based on the ControlPanel available in Windows 95/98. The ControlPanel in Windows 2000 contains a pop-up help that describes the settings.

### ***THE PLAYBACK WINDOW.***

Here you can set – who would have thought? – the volume of the individual signal sources. The controller labeled “Front” ought to develop signs of wear through frequent use – this controller is used to set the volume of the two front speakers.



In addition, all the signal sources can be muted by pressing the MUTE button. However, these are still recorded if you select the source explicitly - obviously, we are in the playback window not the record window. A recording represents the recording source “Stereo Mix”. In this recording mode, all the sources of the playback mixer and the digital input are recorded, provided that they have not be muted. The position in the stereo picture can be controlled via the panorama controller located underneath the speaker controls.

---

## ***THE RECORD WINDOW.***

In the record window, you can determine which signal sources are to be recorded by an application via the DMX XFire 1024 Record driver. If you want to sample a number of devices or the output of DMX XFire 1024 yourself, select the setting “Stereo Mix”.

The microphone input has another two additional functions:

### **AEC**

This is an abbreviation for “Acoustic Echo Cancellation” and suppresses echoes. It is particularly practical for use with voice recognition and Internet telephony applications.

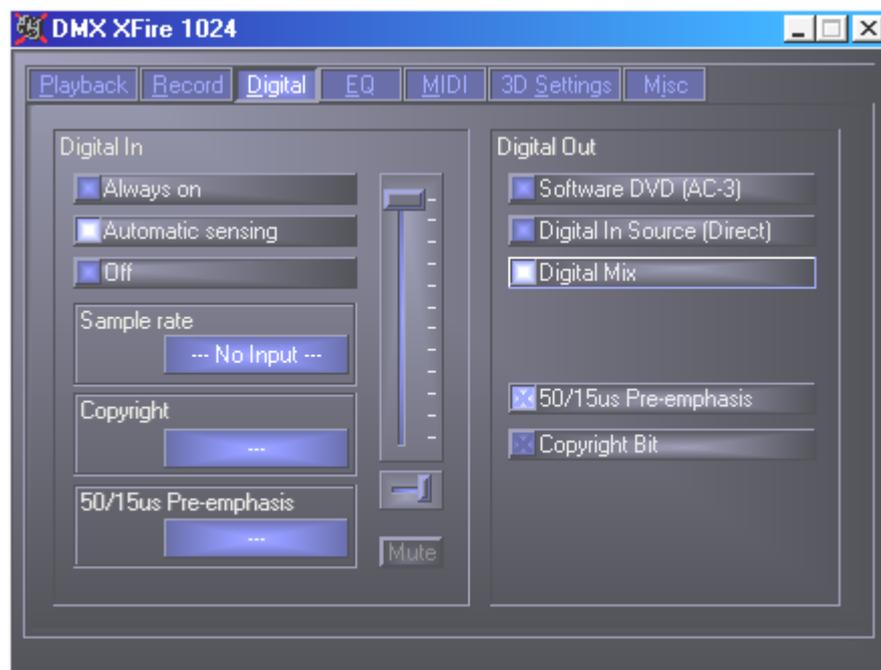
### **Sorry, what was that? Boost!**

An input level that is too low can be amplified by +20dB by activating the “Boost” function.



## DIGITAL I/O.

In the Digital I/O window, you can specify the settings for the digital input and output.



To be able to work with the digital input, you should first ensure that this has also been activated. In the field “Digital In” select either

**“Always on”** – in this case, the digital input is always active, regardless of whether or not a signal is actually present or

**“Automatic sensing”** – the signal input is only activated when data is actually present.

The boxes “Sample rate”, “Copyright” and “Pre-emphasis” show the current status of the digital input.

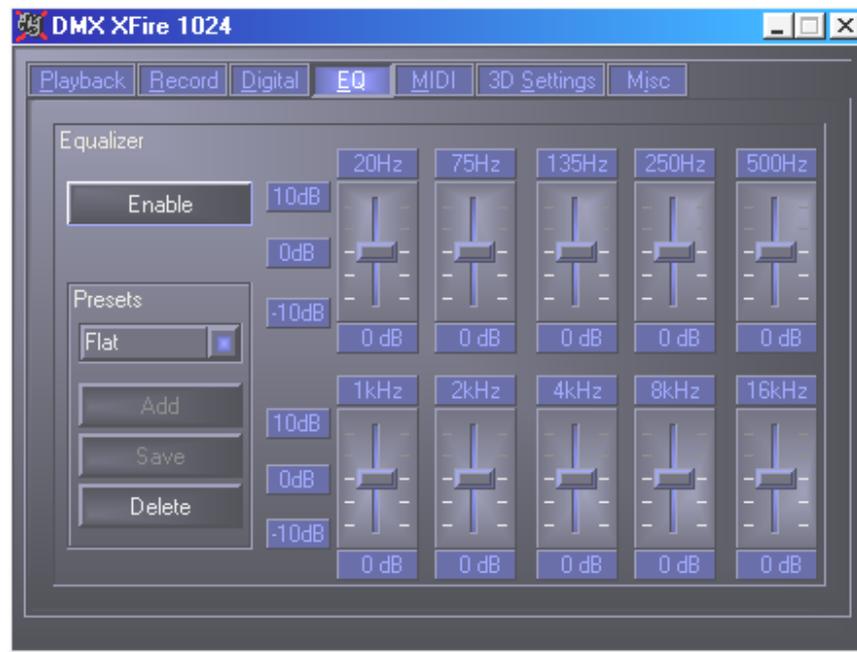
Three different modes are available for the digital output.

- Software DVD (AC-3) – with this setting you can forward undecoded AC-3 data to an external decoder – note that it is clear from the software documentation that this capability supports our XFire: either explicitly as “DMX XFire 1024”, as “Crystal Soundfusion” or as “CS4624 / CS4630”.
- Digital In Source Direct – permits you to forward 1:1 data present at the digital input to the digital output, i.e. in this mode, the frequencies 32 kHz and 44.1 kHz are also output at the digital output. It is not possible to adjust the volume.
- Digital Mix – with this setting you can output all digital sources (Wave, MIDI, digital input) at the digital output at 48 kHz. Note that the analog sources cannot be output directly. Thus, background noise, still low at this point, (such as noise from a microphone connected to MIC) cannot be forwarded to the digital output.

Depending on the selected routing, pre-emphasis and copyright can be set.

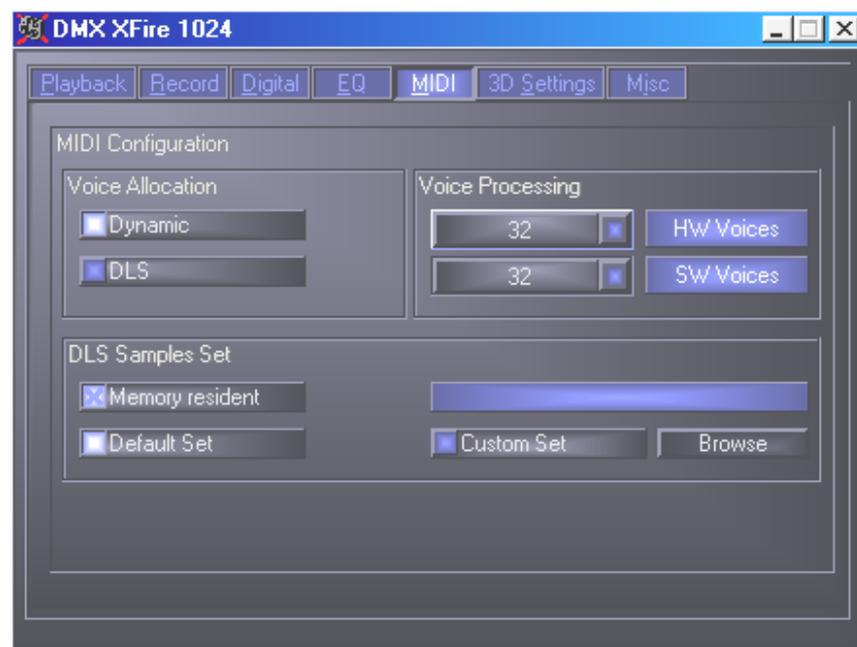
## THE EQUALIZER.

In the equalizer window, you can switch the equalizer on and off, load or overwrite predefined settings or save your own settings.



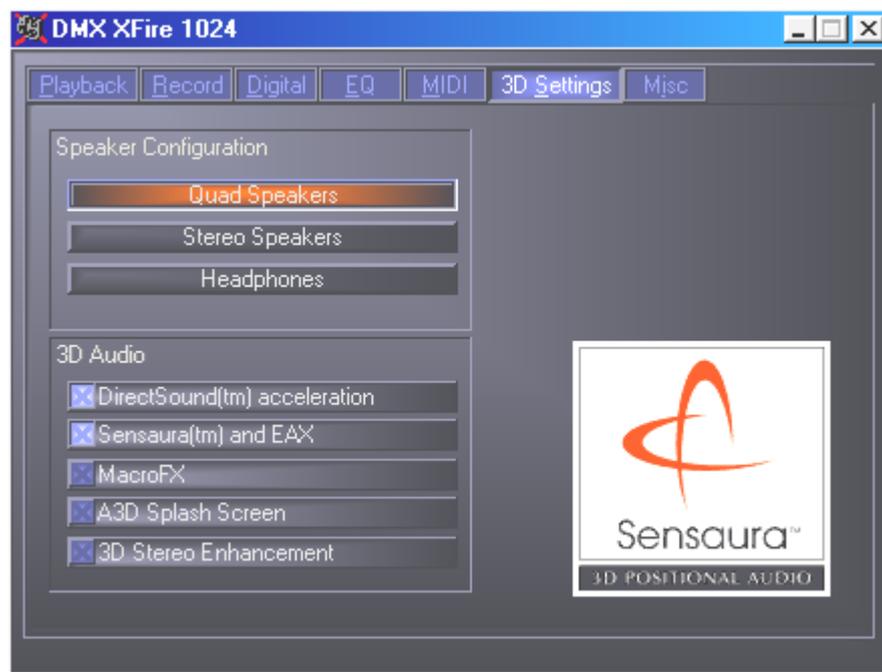
## THE MIDI WINDOW.

We have combined all the functions that are relevant for the synthesizer of XFire under “MIDI”. You can determine the number of voices to be processed in the hardware and/or software and whether these voices should be allocated dynamically (recommended) or according to the DLS specification. In addition, you can decide whether the loaded sample set stays in the memory (Memory resident, recommended) and you have the option of using your own DLS 1.0-compatible sample set instead of the supplied standard set, but it mustn't be larger than 8 MB!



### 3D SETTINGS.

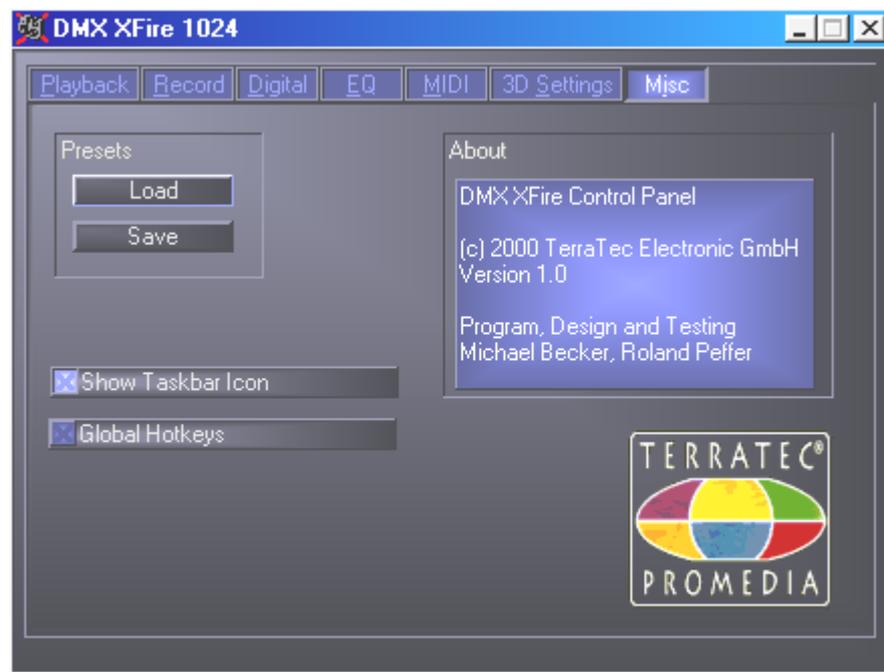
You will find all the setting options for the 3D capabilities of DMX XFire 1024 under “3D Settings”. The speaker configuration is particularly important because this is the only way to ensure that the 3D algorithm used is the right one. In addition, there is the option of deactivating DirectSound hardware acceleration. This is useful for some games which allocate any number of hardware buffers without any prior check, which may sometimes cause the game to crash. You can also prevent the use of “Sensaura and EAX”, switch “MacroFX” on/off or put a simple “Stereo Enhancement” on the output signal. If a 3D-sound application is running (DirectSound 3D, EAX or A3D), you should ensure that the “3D Stereo Enhancement” has been deactivated.



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## ***MISCELLANEOUS .***

Under “Misc.” (Miscellaneous), we have accommodated functions that are not directly associated with XFire but instead affect the performance of the ControlPanel itself. This includes loading and saving mixer settings, activating global hotkeys and displaying the icon in the taskbar.



### ***Loading and Saving.***

You can conveniently save and correspondingly restore settings that have already been made via Load and Save. For example, it is possible to save specific settings for the digital inputs and outputs based on an application and then to load them accordingly in the application. The settings are saved with the file suffix **\*.DMX** .

---

## ***COOL KEYS— THE HOTKEYS***

For you specialists, we have assigned a shortcut key (hotkeys) to nearly all functions to enable quicker navigation through the software. However, this is not the case if you use voice-recognition software for control purposes.

### **Volume control.**

Ctrl + space = front volume up

Ctrl + Shift + space = front volume down

Ctrl + R = rear volume up

Ctrl + Shift + R = rear volume down

### **Muting (playback).**

Ctrl + Alt + space = master (front/rear) un/mute

Ctrl + Alt + R = rear un/mute

Ctrl + Alt + W = Wave un/mute

Ctrl + Alt + S = MIDI un/mute

Ctrl + Alt + A = AUX un/mute

Ctrl + Alt + L = Line un/mute

Ctrl + Alt + C = CD un/mute

Ctrl + Alt + M = Mic In un/mute

Ctrl + Alt + D = Dig In un/mute

Ctrl + Alt + G = Mic Boost on/off

### **Change recording source.**

Ctrl + Shift + L = select Line In

Ctrl + Shift + C = select CD In

Ctrl + Shift + A = select Aux In

Ctrl + Shift + M = select Mic In

Ctrl + Shift + X = select Stereo Mix

### **Other functions.**

Ctrl + Alt + E = equalizer on/off

Ctrl + Alt + o = headphone mode

Ctrl + Alt + 2 = 2 speaker mode

Ctrl + Alt + 4 = 4 speaker mode

Ctrl + O = load mixer settings (ControlPanel must be open and active)

Ctrl + S = save mixer settings (ControlPanel must be open and active)

By using the F5-F11 keys, or the key combination Alt + “x”, where “x” is the letter underlined in the tab, you have direct access to the desired page of the ControlPanel.

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## ***OVERVIEW OF THE BUNDLE SOFTWARE.***

The TerraTec Team has spared no expense or effort to bring you a software package that really has something going for it. It gives you a program which allows you to ...

- adjust and control the SoundSystem DMX XFire 1024,
- listen to all important (and a few unimportant) audio file formats
- explore 3D audio sound worlds yourself,
- edit recorded and imported audio data,
- create your own pieces of music,
- decode and even encode MP3s.

You could say a complete package. And the best of all: The program is powerful enough to give you professional features and options for all your needs. No fooling and (almost ...) no fluff. In the directory "HOTSTUFF" – a TerraTec tradition – you'll find some of the best and most useful (in our humble opinion) audio shareware and freeware programs. There's enough stuff there to keep you busy with hours of work and fun.

Now on to it: After you have installed the software via the autostarter – and provided you have installed the entire bundle software – you will find the following programs which we would briefly like to describe here for you. You can find more detailed information in the respective software's help files. Have fun!

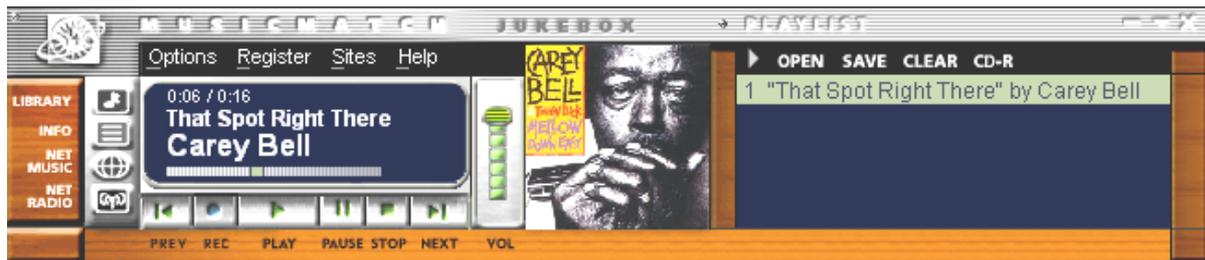
- Musicmatch Jukebox
- Wavelab Lite
- Emagic Logic Fun (only in Windows 95/98)
- The Sensaura 3D Player
- The Sensaura 3D demos

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## ***MUSICMATCH JUKEBOX – THE COMPLETE SOLUTION.***

With the Musicmatch Jukebox program from Musicmatch, you can reproduce various formats and you can also archive these formats and convert them into the MP3 format. This software is only available in English, and we think that you will quickly understand how to operate it. You will probably be familiar with most elements your own stereo system. But we will give you an overview of the individual elements anyway.

### ***The Player***



With MP3 or Windows Media files - simply select them by dragging and dropping them into the playlist or the player or via OPEN.

### ***The Recorder***



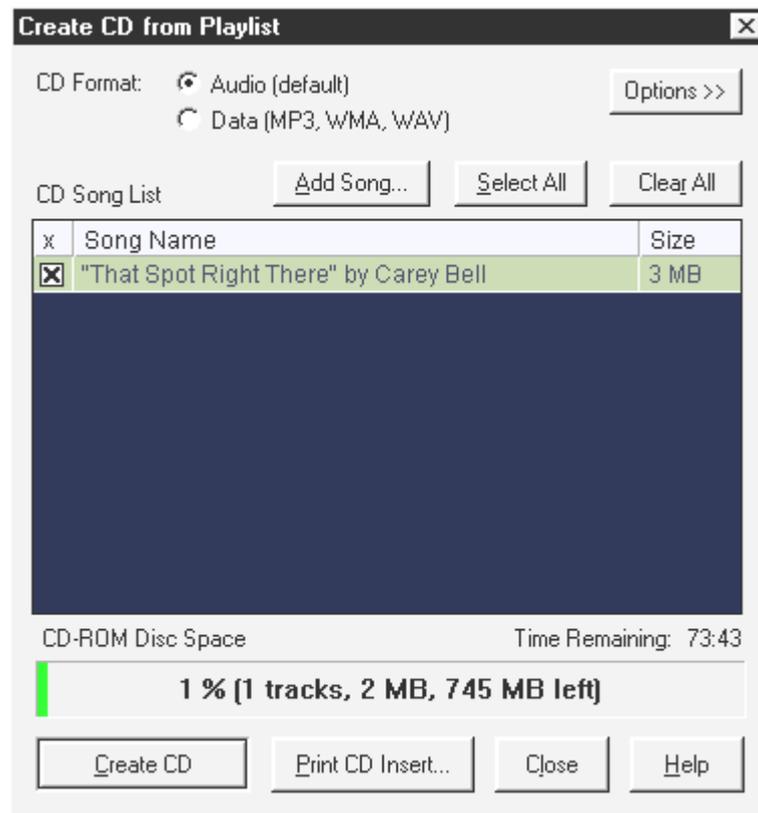
Your virtual tape deck with installed space-saving feature: Create MP3 files in excellent quality: Bit rates up to 320 KB/s are supported, as are different bit rates within an MP3 file because this enables an even greater space-saving compression. You don't just 'grab' your audio CD by digitally reading out from your CD ROM drive, you also convert each input signal of your DMX XFire into an MP3 file in real time. In the OPTIONS menu in the player window (see above) you can specify the desired source.

Important for insiders: Obviously, the original Fraunhofer MP3 algorithm is used to ensure the best possible quality.

---

If you have an active Internet connection, the Cddb (CompactDisc DataBase) for the artist name, album name and title of the inserted CD is displayed. If you convert this to the MP3 format, this information will be saved in MP3 as the ID tag.

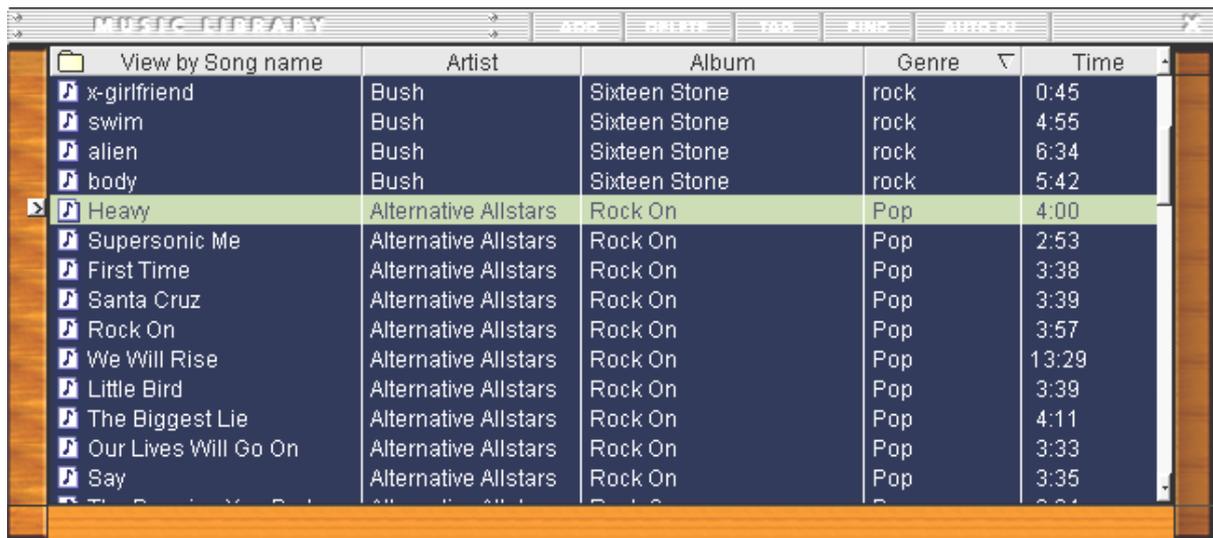
***Burn Baby, Burn!***



With the integrated CD burner program you can easily and conveniently capture your personal playlist on a CD. One good feature: Clear display of the amount of space remaining on the CD.

Must burners are supported straight from the factory, a comprehensive and up-to-date list of the models that have been checked can be found on the Musicmatch web page under <http://www.musicmatch.com/jukebox/player/cdr.cgi>.

***Not just for hunters, for collectors too***



The screenshot shows a music library window titled "MUSIC LIBRARY". The window has a menu bar with "ADD", "DELETE", "TAG", "FIND", and "AUTO DJ". Below the menu bar is a table with the following columns: "View by Song name", "Artist", "Album", "Genre", and "Time". The table contains the following data:

View by Song name	Artist	Album	Genre	Time
x-girlfriend	Bush	Sixteen Stone	rock	0:45
swim	Bush	Sixteen Stone	rock	4:55
alien	Bush	Sixteen Stone	rock	6:34
body	Bush	Sixteen Stone	rock	5:42
Heavy	Alternative Allstars	Rock On	Pop	4:00
Supersonic Me	Alternative Allstars	Rock On	Pop	2:53
First Time	Alternative Allstars	Rock On	Pop	3:38
Santa Cruz	Alternative Allstars	Rock On	Pop	3:39
Rock On	Alternative Allstars	Rock On	Pop	3:57
We Will Rise	Alternative Allstars	Rock On	Pop	13:29
Little Bird	Alternative Allstars	Rock On	Pop	3:39
The Biggest Lie	Alternative Allstars	Rock On	Pop	4:11
Our Lives Will Go On	Alternative Allstars	Rock On	Pop	3:33
Say	Alternative Allstars	Rock On	Pop	3:35

Organize your music archive and sort according to a wide range of categories, including album, artists, title, genre or mood. If you want you can add your own. The “Find Music” function enables you to find your favorites quickly and easily (CTRL+F).

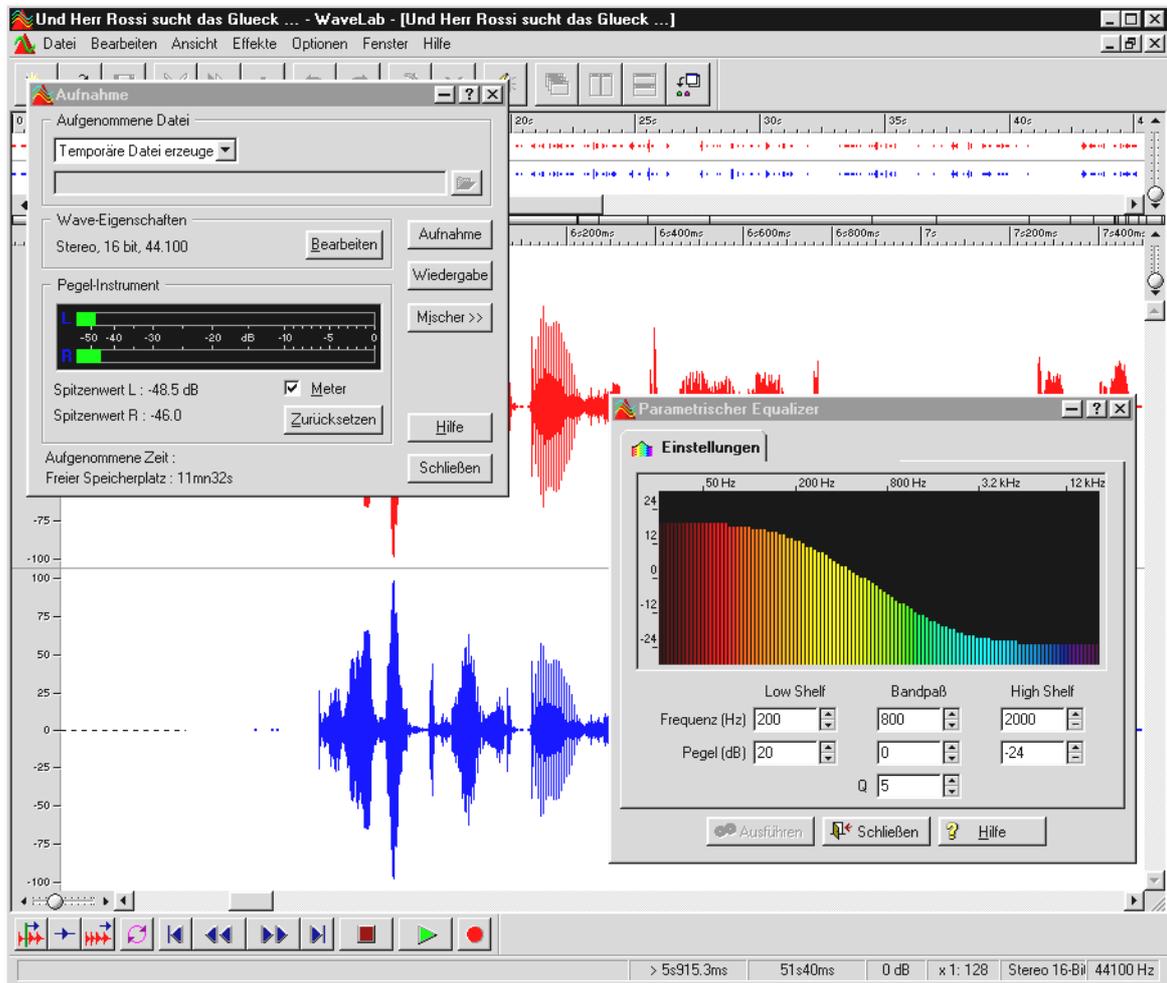
***Always the same, yet different.***

Another feature of this software is its option of providing the interface with a new skin – they like to use the word skins. In the OPTIONS menu under the item VIEW and then CHANGE THEME, you can switch between the interfaces that have already been installed .

If you want to download other skins or find out more information, we recommend the MusicMatch homepage. The address (it couldn't be simpler): <http://www.musicmatch.com>.

## WAVELAB LITE – THE AUDIO EDITOR.

Steinberg's award-winning audio editing suite WaveLab, allows you to record and professionally edit your sounds. Cuts, copying , processing volume, fades, crossfades, processing dynamics, loop function, equalizer , sample rate conversion – everything is included.



More detailed information on using WaveLab Lite can be found in the software's online help. You can also print out the original manual from Steinberg – the documentation can be found on the XFire-CD as a .PDF file for AcrobatReader.

## EMAGIC LOGIC FUN – THE SEQUENCER.



A flaunted audio and MIDI sequencer in a superior class with all the fun elements: from notation including printing music, various editing options to an excellent mixer with installed effects – everything is there.

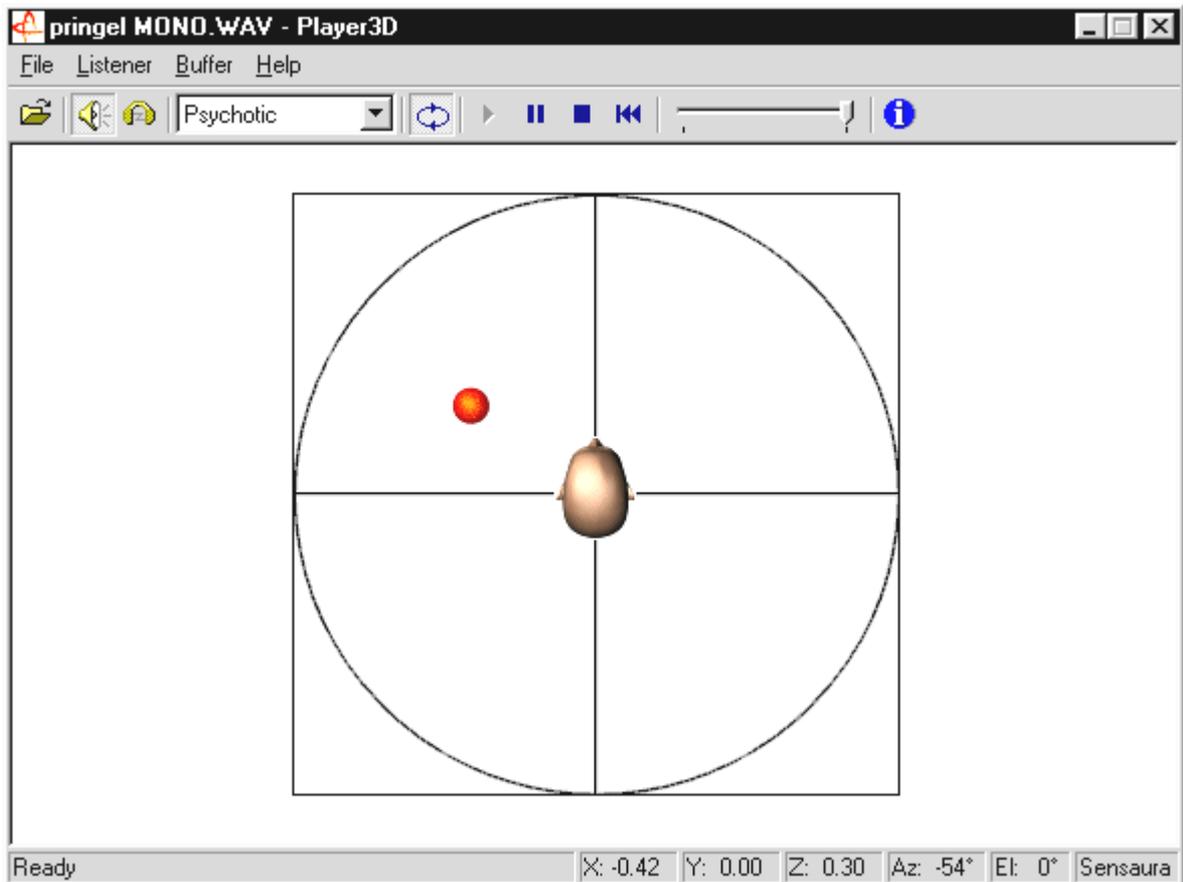
After installation, you will also find extensive documentation in the Logic Fun program group as a PDF file which you should scour through not just when you have questions.

To be able to read this PDF document, you will need Acrobat Reader. This can be found on your DMX XFire driver CD as an installation version.

Go and make a start on your compositions ...

## ***THE 3D PLAYER – LISTENING IN THE 3RD DIMENSION.***

Listen like you feel. The 3D player lets you position your own sounds around your own head. The menu is in English and operation is extremely straightforward.



For example: Using drag&drop, move a WAV file of your own choosing to the 3D player and press the Play button. Now you can compare the supported 3D capabilities with one another in the “Listener” menu:

Headphones: adjusts the 3D positioning of the headphones

Speakers: adjusts the 3D positioning of 2 and 4 speakers

Hardware 3D: 3D functions over the DMX XFire hardware.

Software 3D: The main processor (Host) tries to imitate the 3D functions.

Stereo Pan: normal stereo picture

MacroFX Enable: activates the MakroFX functions (important: set the WAV volume on the XFire ControlPanel to approx. 70% less to get the full enjoyment of this function)

Reverb: You can listen to various room simulation algorithms here: either EAX 1.0, EAX 2.0 or even ID3L2 – or switch it off via None.

The path of a sound object in a three-dimensional room can be set through the subpoint path in the Buffer menu:

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**Horizontal Circle:** describes an object's horizontal circular movement relative to the listener. Recommended for experiencing the “back-front” syndrome.

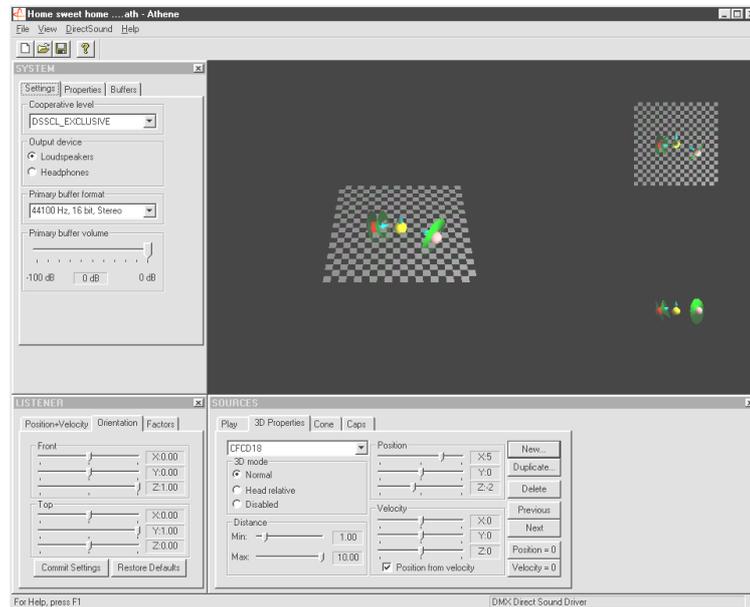
**Vertical Circle:** describes an object's vertical circular movement relative to the listener. Recommended for experiencing the “up-down” syndrome.

**Flyby:** the object flies towards the listener from a distance, passes by the face and disappears again.

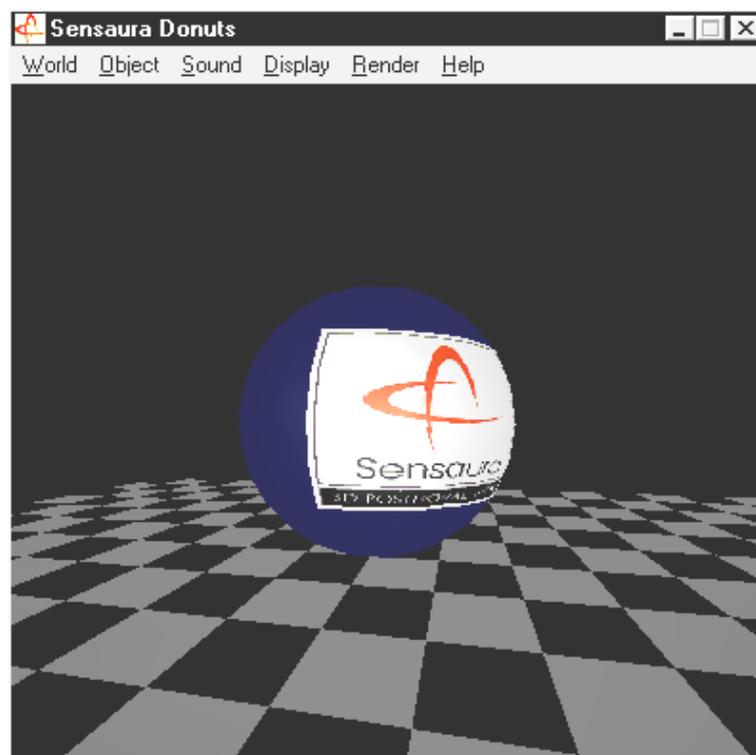
**Manual:** this lets you manually select the position of the objects with your mouse.

## ***THE 3D DEMOS.***

The DMX XFire 1024 software comes with different demos which demonstrate the 3D audio characteristics of the card:



*Athene – development tool for creating your own sound world  
(for more info, see the README file for the program).*



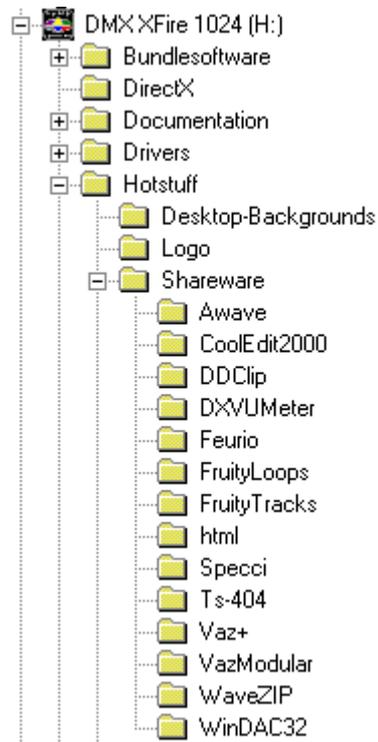
*Donuts – sweet sounds fly around you in an abstract 3D environment.*

You can listen to and see all these programs with the friendly assistance of Sensaura Ltd.  
(<http://www.sensaura.co.uk>).

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## ***THE HOTSTUFF DIRECTORY.***

On the CD-ROM for the SoundSystem DMX XFire we have collected together a large number of other programs, tools and files. It's well worth a look.



Many of the programs we present here are shareware. Please support the shareware principle and pay the amount that the authors ask if you like the programs. Thank you

---

## ***3D AUDIO – THE BACKGROUND.***

“3D audio” ... that does sound interesting. But it also sounds like speech synthesis, motion-tracking, artificial intelligence, bio-scanning, and credit card payment over the Internet. In other words: wow, cool technology - but it doesn't work the way it's supposed to. Is that your impression too? Then follow us on a short look into today's possible technological wonders, the objectives and background of these still young but innovative technologies.

### ***All good things come in twos.***

Most people come with two ears. Both are usually similarly well-linked or very well-linked to the brain. Hearing – stated simply is the combination of listening and the brain - it offers us the ability to recognize sounds and even locate them, i.e., the direction they come from, with some accuracy. Hold one ear closed. Carefully turn around with your eyes closed in a circle and wait for the phone to ring. ... You'll be able to tell that the phone is ringing, but it is doubtful that you will be able to determine its position at first. A cool experiment when it works\*.

\*and a long wait when no one calls ... ;-)

Industrious developers determined from this experience that you can be tricked as to the position of a sound with speakers and even better with headphones. And rightly so, our acoustical world picture can actually be preserved and not only that: with the help of high-capacity processors, sounds or music can be positioned partially freely and around the listener in real time.

Let's return once again to the beginnings of this development. Perhaps you still remember the first attempt by developers to stay faithful to the slogan “what comes after stereo?”. By the mid-70s there were records and tapes with so-called binaural recordings. Microphony was pretty special: two small microphones were placed on the inside of a plastic model skull to scale and complete with ears and auditory canal. Stereo recordings were made in this way which when listened to with headphones made possible an astonishing approximation of the sound environment.

Other attempts were made by placing 4 speakers which gave us the so-called quadrophony. To date, many are still annoyed that they paid a small fortune at that time for such devices ...

All that these attempts did was to prove that with “Stereo” you can only get a 2-dimensional playback. An audio signal can only be positioned between both speakers and not before, behind, or even under them.

---

### ***3D Audio Today***

Today, powerful technology is available to you and to developers which, with the help of clever algorithms, can make what was recorded then with costly microphony hearable and controllable. The basis for this are: runtime, and phase/frequency shifts in the audio signal. This means that depending on when and in which acoustical environment a specific frequency reaches our ear, our hearing interprets a respective position (of the echoing object or our relative position to it). Reflectors of echo waves as well as their absorption play an important role here, i.e., how strongly frequencies change when they “rebound” from other bodies, before they reach our ears. Meanwhile, even these conditions can be well-simulated.

**Not to be confused** with “proper” 3D audio are the numerous other forms of simulated 3D sound such as VSpace or the Surround switch on your TV set at home.

### ***Perfect?***

As was stated above, hearing is only one way of making “virtual worlds” partially real. Our eyes also have a part in how we “understand” our environment. And also extremely low frequencies which we find alarming help us recognize objects, for example, (“Watch out! tank on the left ...”).

For this our brain accesses our vast experiences to evaluate a situation: imagine a door that is closing and you hear the proper accompanying sound. But if you hear something like a slamming noise from beneath, then you know something is amiss ...

“Perfect” becomes the reflection of our environment through a combination of different playback systems. And naturally there are still a lot of hurdles to be overcome in the field of 3D audio, as there are with powerful graphics systems. In any case, the basics have now been discovered, the algorithms found, the suitability proven in practice – it is now “only” a question of computer capabilities and optimization. We are at the end of our brief crash course, remember performance-wise no one will be able to challenge your SoundSystem DMX XFire 1024 for the foreseeable future ... have fun!

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## **APPENDIX.**

### **FAQ – FREQUENTLY ASKED QUESTIONS AND THEIR ANSWERS.**

#### **Question 1:**

Do I have to move jumpers and change dip switch settings before I install the sound card?

#### **Answer 1:**

To operate and install the card as such it is not necessary to move jumpers. But for reasons of flexibility there are two jumpers - the first jumper (JP1) enables the headphone amplifier at the first line output to be switched on/off, the second jumper (JP2) permits the signal level at the digital input to be changed over (TTL or S/PDIF). The card completely corresponds to the Intel/Microsoft specification. There are no jumpers or switches to be set for IRQs, DMA channels and addresses.

#### **Question 2:**

I cannot change the IRQ of my DMX XFire 1024 in Device Manager.

#### **Answer 2:**

PCI cards are configured automatically via the Bios, Plug & Play or ACPI of the operating system. These mechanisms do not allow for the manual alteration of the IRQ via the Device Manager. If it were necessary to assign another IRQ to the card, it is possible to install the card into another PCI slot, possibly swapping PCI slot with another card. In addition, one BIOS or another offers the option of permanently assigning IRQs to individual PCI slots. In any event, get advice from the manual for your motherboard.

#### **Question 3:**

There is no sound coming from the sound card.

#### **Answer 3:**

- If you are only using one pair of speakers, ensure that you have used the first Line output (Line-Out 1)
- Check the connections between sound card and loudspeakers.
- Are the active speakers or Hifi system turned on?
- Check the control settings of the DMX XFire 1024 mixer. Ensure in particular that none of the mute switches have been activated because this would turn off the sound output.

---

**Question 4:**

How do I record from my hi-fi system?

**Answer 4:**

- Connect the line-out socket on your hi-fi system to the line-in socket on the sound card.
- Use the Record Out socket or the Tape Play socket on the tape section of your hi-fi amplifier.
- Then you will have to specify LINE IN as the recording source in the DMX XFire 1024 mixer under “RECORD”.
- Then call up recording software, such as the supplied Wavelab Lite or the audio recorder in Windows 95/98.

**Question 5:**

Can I send the encoded AC-3 stream to a DVD via the digital output of an external decoder (e.g. Dolby Digital Receiver)?

**Answer 5:**

Yes, provided that you possess a corresponding Software-DVD decoder with which you can playback the DVD on your PC. The Ravisent Cinemaster 99 / 2000 and Cyberlink's PowerDVD Vers. 2.55 or higher support this DMX XFire 1024 function. Note that if you do not explicitly have the full version of a program of this kind, certain functions may be deactivated – if it came with your graphics card, for example. Look in the manual for the relevant software for the settings that have to be made. Connect the optical digital output of DMX XFire to the optical digital input of the decoder and activate the “Software DVD (AC-3)” in the DMX XFire 1024 mixer under “Digital I/O” for the digital output.

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**Question 6:**

Background noise is continuously coming over the speakers, what can I do?

**Answer 6:**

When the sound card was being designed, value was placed on incorporating the best audio properties. Nevertheless, it is still possible that in certain computer configurations inserting graphics and video cards, hard drive controllers or even power supply units can have an effect on the audio signal. Generally, the built-in amplifier is very sensitive to this. Use active speakers or your hi-fi system on the line output. When installing the sound card in your computer, try to place it as far away as possible from the sources of interference mentioned above. Switch the microphone input to mute when not in use.

**Question 7:**

Ever since I connected my sound card to my stereo system, I can hear a constant hum.

**Answer 7:**

The hum (50 Hz) comes from the 220 V power supply. It is caused by a ground loop. This loop is created when two devices are grounded by a ground wire or other wire (e.g. antenna cable), and are also connected to an audio cable. The humming will disappear if the direct conducting connection is removed – either with a sheath current filter that is connected into the antenna line (in specialty stores, approx. USD 10), or with an audio transmitter that eliminates the direct coupling of the audio output (PC) and the input (HiFi amplifier) (e.g. Conrad, Order No. 31 14 05 and in car HiFi stores). If you remove the antenna cable from the receiver/tuner and the hum disappears, then the sheath current filter will help. If the hum is audible even without the antenna cable, the cause of the problem is a doubled ground on the mains plugs and can be resolved using an isolating transformer.

**Question 8:**

Is the MIDI port on the sound card compatible with the Roland MPU-401 standard?

**Answer 8:**

The sound card supports both the Sound Blaster MIDI mode as well as the MPU-401 UART mode (not the SMART mode, this does not affect performance since most programs support MPU-401 UART mode). Programs which are set up for MPU-401 mode directly support your sound card when a wavetable is being used.

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**Question 9:**

I can't get the MacroFX effect to work.

**Answer 9:**

Check the settings in the DMX XFire 1024 mixer. MacroFX operates with a volume increase. If you have set the controller to maximum, the card cannot increase the volume further and the effect is barely perceivable.

**Question 10:**

WAV files that are played with DMX XFire 1024 sound distorted.

**Answer 10:**

Check the setting of the WAVE controller in the DMX XFire 1024 mixer. If this controller is at the upper stop, this may cause the signal to be distorted. A recording level of 0dB for WAV playback is obtained if the controller is set to approx. 70%.

**Question 11:**

A keyboard connected to the sound card does not react when I hit a key.

**Answer 11:**

- First, make sure that the driver for communicating with the keyboard has been installed. The driver for this card is called 'DMX XFire 1024 External MIDI' and should be found in the Control Panel in System under Device Manager. If it is not there, reinstall the current Windows 95/98 drivers.
- If the driver is installed, it must be selected as the MIDI input device in the respective sequencer software. Please see your sequencer manual for details on this. Most sequencer programs have a menu item labeled "Setup/MIDI Devices", where you can select MIDI input and MIDI output devices.
- If both these conditions are satisfied and the problem persists, in other words the software does not react when you hit a key or no sound is audible, the MIDI connecting cable is almost certainly the cause of the trouble. Experience has shown that there's an enormous number of different MIDI connector cables which unfortunately are all identical in appearance. These cables should contain a so-called optocoupler suitable for the sound card's levels. As it's not possible to check this from the outside, always use the sound card manufacturer's MIDI cable. As a result of this problem, our product range includes such a cable which you can obtain from your equipment retailer.

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**Question 12:**

Where can I get new drivers and utilities for my sound card?

**Answer 12:**

You can always obtain current drivers and software versions from the ReActor BBS at +49 2157-817924 (analog) and +49 2157-817942 (ISDN). You also have access to them through our Internet sites (<http://www.terratec.net>). Here, you can obtain current information about our products and hot new tools for your sound card.

**Question 13:**

The force feedback of a ForceFeedback joystick connected to DMX XFire 1024 does not function.

**Answer 13:**

The MIDI lines for ForceFeedback transmission are usually used for another purpose. Ensure that the DMX XFire 1024 Game Device interface is given its own IRQ and always use the most up-to-date software for your ForceFeedback joystick.

**Question 14:**

The digital input cannot be synchronized to the digital output of the CD-ROM drive.

**Answer 14:**

- First ensure that you have properly connected the supplied cable to the CD-ROM drive.
- The digital output on the CD-ROM drive only outputs pure audio information, therefore it is essential that there is an audio CD in the drive and not an MP3 collection that you have burned yourself, for example.
- As standard, the DMX XFire 1024 digital input is set to TTL signal level via the jumper (JP2), which usually corresponds to the level of most CD-ROM drives. However, there are exceptions which mean that changing the jumper JP2 to S/PDIF level will result in success in these cases.
- If this was also no help, ensure that the digital output of the CD-ROM drive is in fact supplying a signal.

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