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November, 2000

It is the policy of Hoontech to improve products as new technology, newer components, improved software and drivers become available. Hoontech, therefore reserves the right to change specifications without prior notice.

A/S Center

Hoontech Co., Ltd.
4th Flr., Minkyung Bldg.,
#332 Songne-1Dong, Sosa-Ku,
Bucheon City, Kyungki-Do, Korea
Tel.: +82-32-611-1994
Fax: +82-32-612-0079
Internet: <http://www.hoontech.com>

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This documentation was created by Hoontech Co., Ltd. (Korea) and RIDI multimedia (Germany).
Special thanks to James McCanna and John Fuller for the help in creating this manual.

Note: To avoid damage of your speakers, always turn down the volume or turn off the power of your amplifier connected to the SoundTrack Audio DSP24 when you are rebooting or shutting down your PC.

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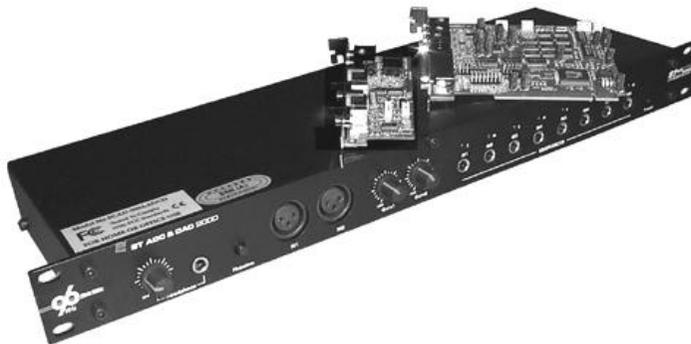
I. Introduction

Congratulations on your purchase of the SoundTrack Audio DSP24. The Audio DSP24 is a PCI digital interface soundcard designed to work as a stand-alone interface or with a variety of breakout boxes available from Hoontech.

There are two hardware versions. The normal SoundTrack Audio DSP24 is usually used together with external boxes to provide multiple in- and output channels. The SoundTrack Audio DSP24 MK II has additionally 2 analog in- and 2 analog output channels with high-quality 24bit/96kHz AD- and DA-converters. Most informations in this manual are valid for both hardware revisions.

You should have received the following with your Audio DSP24:

- Hoontech SoundTrack Audio DSP24 or Audio DSP24 MK II soundcard
- Digital XG DB I I/O card
- 4x4 pin S/PDIF I/O cable
- 2x2 pin CD-ROM digital cable
- 4x3 pin CD-ROM analog cable
- 10 pin flat digital audio cable
- 4 XLR to 15pin cable for balanced analog I/O (only DSP24 MK II)
- 10-pin flat ribbon cable for connection with SoundTrack Digital Audio (optional)
- AES/EBU adapter cables – 2 XLR to 1/8" jack adapters (optional)
- driver and installation CD
- this manual



Superb multi-track quality:

The Audio DSP24 supports up to 24-bit resolution and 96kHz sample rates and includes a digital daughter card (XG DB I) that employs the AES/EBU, optical and coaxial S/PDIF standards. The Audio DSP24 can handle up to ten I/Os when the card is combined with the daughter card – all at up to 24-bit and 96kHz. In addition, all internal signal paths are processed at 36-bit resolution ensuring the highest amount of headroom and fidelity.

Expandability:

The user can install up to four Audio DSP24 soundcards in one system. The user can set one card as the master clock controller via software or slave all cards to an external S/PDIF clock source. No jumpers are required.

In addition, the Audio DSP24 can be used with one or more Hoontech external boxes and rack-mountable breakout boxes (using the H-BUS interface) such as:

ADC III – 24bit/96kHz, 8 analog ¼" balanced inputs, Line In and Mic in preamplifiers with 48V “phantom power” for condenser microphones.

DAC III – 24bit/96kHz, 8 analog ¼" balanced outputs, AES/EBU, optical and coaxial S/PDIF connections are also provided.

Digital Modulator III – 24bit/96kHz, S/PDIF and AES/EBU I/O connections connections are supported. Inputs are automatically synchronized.

ADC&DAC2000 – 24bit/96kHz, 8 unbalanced ¼" I/O, 2 XLR inputs with gain control, headphone output with gain control and MIDI I/O.

Digital Station 2000 – 8 channel ADAT and TDIF I/O interface.

It is possible to connect several external boxes to one card at the same time. So you can build up a system with exactly the number of inputs and outputs you need now and you can expand it later.

Intuitive Software Interface:

The Audio DSP24 comes with a suite of software interfaces.

The *External Links* software is the Audio DSP24 routing center and allows you to route/patch signal path for a variety of devices on a virtual patch bay.

The *External Mixer* (20 channels) sets input/output and panning levels for the Wave 1/2, Wave 3/4, Wave 5/6 and Wave 7/8 channels, (stereo pairs each), S/PDIF In and Out, during recording

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and mixdown. The output of the *External Mixer* can be played through the outputs of external boxes or through the digital output of XG DB I.

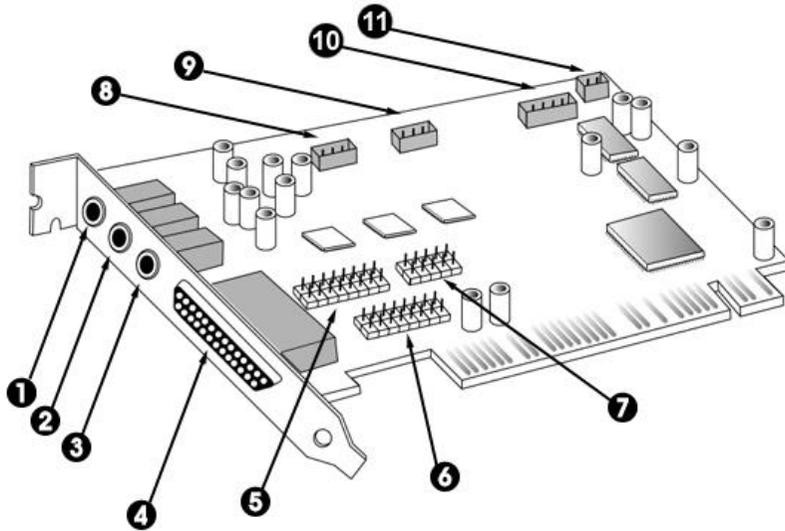
The *Internal Mixer* allows settings for input and output levels for Wave, Line In, MIC, CD In and Auxiliary devices. The output signal of the *Internal Mixer* is always played through the Line Output on the card. This makes it possible to use the card as an ordinary standard soundcard.

II. Specifications

- PCI 2.1 compliant interface
- 10 input and 10 output channels using XG DB I and external boxes (External Mixer using the H-BUS interface)
- Sample rates in kHz: 32, 44.1, 48, 88.2, and 96
- supported converter resolution: 16-bit, 20-bit and 24-bit
- MPU-401 MIDI interface
- Internal CD in, Line In, Mic In, Line Out via AC-97 Codec / Internal Mixer (there is no Mic- and Line In on DSP24 MK II)
- AES/EBU, optical and coaxial S/PDIF standards support
- compatible with SoundTrack Digital Audio
- Drivers for Windows 95/98/ME, NT4 and Windows 2000 available
- Support for ASIO 2.0
- GSIF-support

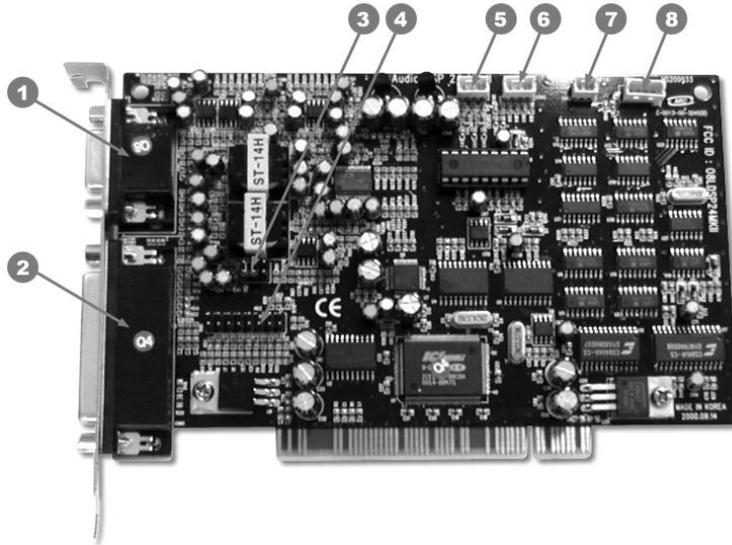
III. In- and output connectors

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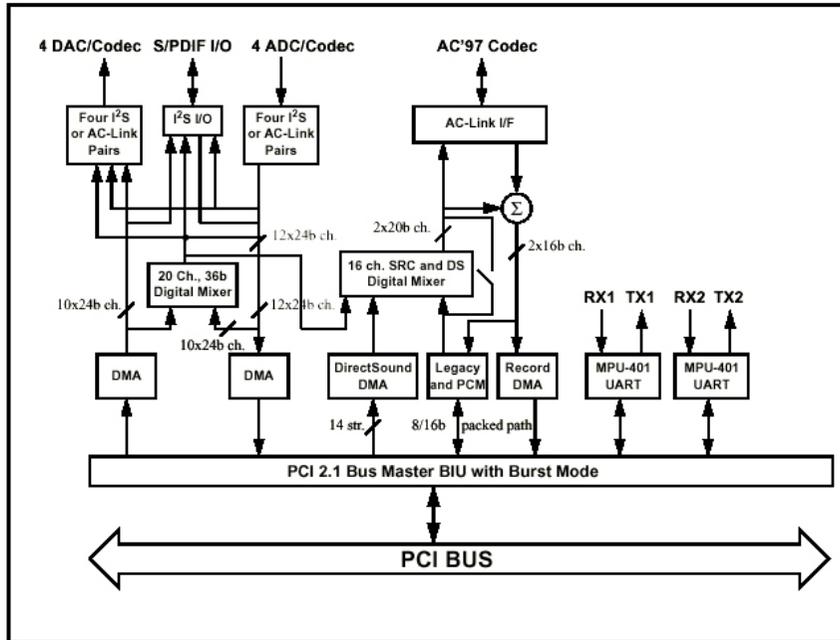
1. Mic In – 1/8" jack
2. Line In – 1/8" stereo jack
3. Line Out – 1/8" stereo jack
4. H-BUS Digital I/O connection via 44x44 pin cable for external boxes
5. 16 pin connector for optional Digital I/O card or analog bracket
6. MIDI connector (cable optional)
7. Digital Audio connector – used when a SoundTrack Digital Audio card is installed
8. CD In – can be connected to the analog output from CD-ROM
9. Aux – can be connecte to the analog output from a TV-card or other analog source
10. S/PDIF I/O – Connection to the XG DB I daughtercard
11. CD In – digital output from CD-ROM (disabled when S/PDIF active and vice-versa)

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1. 15pin D-SUB connector for 4 XLR to 15pin cable
2. H-BUS Digital I/O connection via 44x44 pin cable for external boxes
3. Jumper settings for 1/8"-Output
4. Bracket connector – used when a SoundTrack DAC or Analog Bracket is installed
5. CD In – can be connected to the analog output from CD-ROM
6. Aux – can be connecte to the analog output from a TV-card or other analog source
7. CD In – digital output from CD-ROM (disabled when S/PDIF active and vice-versa)
8. S/PDIF I/O – Connection to the XG DB I daughtercard

IV. Block diagram



Note: The Internal and External Mixer are completely independent. The Internal Mixer controls normal PC audio functions such as Windows sounds or CD Audio playback. It is represented by the AC-97 Codec on the card. The External Mixer section is separately used by the audio recording/mixing applications with support for up to 24bit/96kHz.

The Mic In, Line-In, Line-Out, Aux and CD-In are routed through the AC-97 Codec on the AudioDSP24 and are controlled by the Internal Mixer.

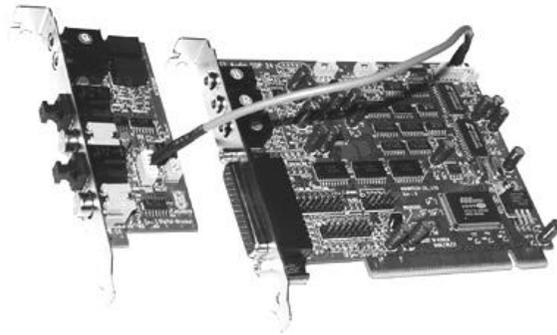
S/PDIF I/O are connected to the XG DB I digital I/O board via the External Links function. S/PDIF Master Clock rates are set in the Hardware Settings and can be synchronized via an external S/PDIF source or internally on the Audio DSP 24. The default setting is 44.1kHz.

Up to 4 external ADC and DAC boxes can be routed through the Audio DSP24. The input and outputs of these external boxes are connected to the External Mixer.

V. Hardware installation

Make sure the computer is switched off and unplugged. Remove the external computer cover. Check that you have connected the Audio DSP 24 and the XG DB I correctly as described above. Insert the Audio DSP 24 PCI card into a free PCI slot making sure that it is pressed firmly into position and secure it to the computer case. Position the XG DB I along side and secure it to the computer case.

The Audio DSP 24 card system consists of the main PCI card (Audio DSP24) and a secondary daughter board (XG DB I). Hook the included gray lead wire to the CNN2 connection socket on the Audio DSP24 and then into the daughter card to connect the cards.



You can use either the analog or digital outputs from the CD ROM drive. The CD digital output can be connected to either the CNN3 on the Audio DSP24 or the socket marked J3 on the XG DB I. The CD analog output can be connected to CON1 on the Audio DSP24. All required leads are included in the packaging. Please check with your CD ROM manufacture to ensure that it supports digital output.

If you own the Audio DSP24 MK II, please connect the 4 XLR to 15pin D-SUB cable to the 15pin connector on the backside of the card.

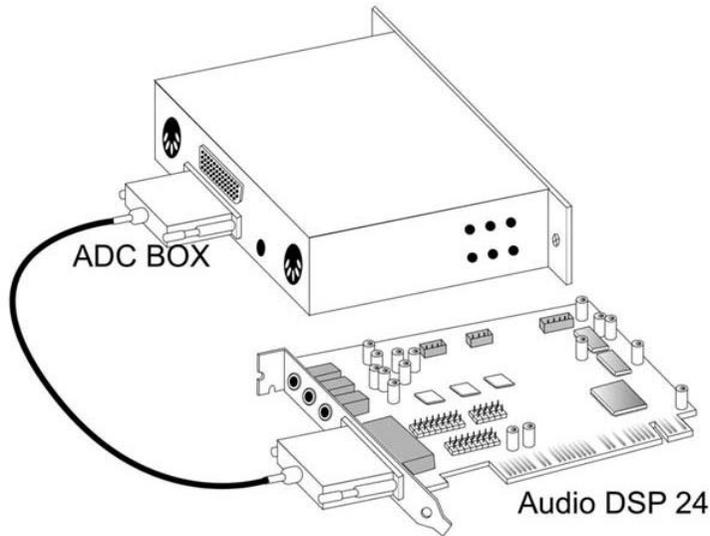
External hardware connection

External converters are connected to the Audio DSP24 host card by using the thick cream colored 44-pin cable included with your system. All external converters and optional boxes can be daisy chained using the DATA In and DATA Out 44-pin connections (H-BUS).

To connect the first external box (like the ADC&DAC2000) please follow these directions:

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Connect the long cream 44-pin lead from the 44-pin connector on the rear of the Audio DSP24 to the DATA Out of the external converter.



Caution: never connect or disconnect the 44pin cable when the computer is turned on. Always shut down your system before.

DIP Switch settings - you need to have **one** DIP switch in the UP position. There are 10 DIP switches on the side of the each external box (except DAC III). The down position represents OFF for all switches. The up position represents ON for all switches. Switches 1-4 set the units unique specific ID for software control. This is necessary so the system can differentiate individual ADC converters or external boxes, when several units are connected to one card. At least one DIP switch must be in the up position.

Up to four external devices can be used at the same time with the Audio DSP 24. An example would be a system with the ADC&DAC2000 (8 channel analog I/O) and the Digital Station 2000 (ADAT and TDIF I/O).

Remember, each box needs a unique ID number. If you connect a second box, the Box ID number controlled by the DIP switch on the right side must be different. After setting the correct DIP switch, connect the second box using the supplied cream 44-pin cable to DATA In of the first external box and the DATA Out of the second one.

Chapter X. contains more details about the different external boxes and other expansion options for the SoundTrack Audio DSP24.

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After everything is connected to the card, you can re-assemble your PC and continue with the driver and software installation.

VI. Driver and software installation

Driver installation

The Audio DSP24 comes with a CD that contains drivers for Windows 95/98/ME and NT4. The following instructions pertain to Windows 98 only. The installation under Windows 95 or Windows ME is very similar.

After installation of the Audio DPS24 in a PCI slot in the computer, boot up the system. Windows 98 will detect new hardware and display the following screen.



Click *Next*.

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Select *Search for the best driver for your device* and click *Next*.



Check *Specify a location*. Type in the <drivename>:\sound\dsp24\driver in the window displayed above and click *Next*. In the alternative, you can click *Browse* and find the above file on the CD, then click *Next*.

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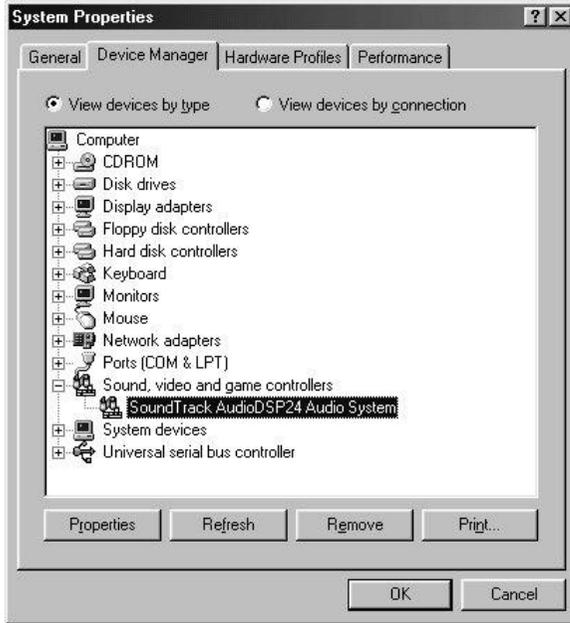
After Windows finds the driver you should see the above screen naming the driver file indicated in the screenshot. Click *Next*.



At this window complete the installation by clicking *Finish*. Windows will now install the driver for you through a series of installation screens. If you are prompted to do anything (this would be unusual), it is usually safe to simply press Enter.

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After the driver is installed ensure the installation worked by pressing *Start>Settings>Control Panel>System>Device Manager>Sound, video and game controllers*. You should see the SoundTrack device listed there. Highlight it and click on Properties. You should see the message *This device is working properly*. Click on the Resources tab, you should see the message *No conflicts*. If so, congratulations are in order. You have successfully installed the drivers for the Audio DSP24.



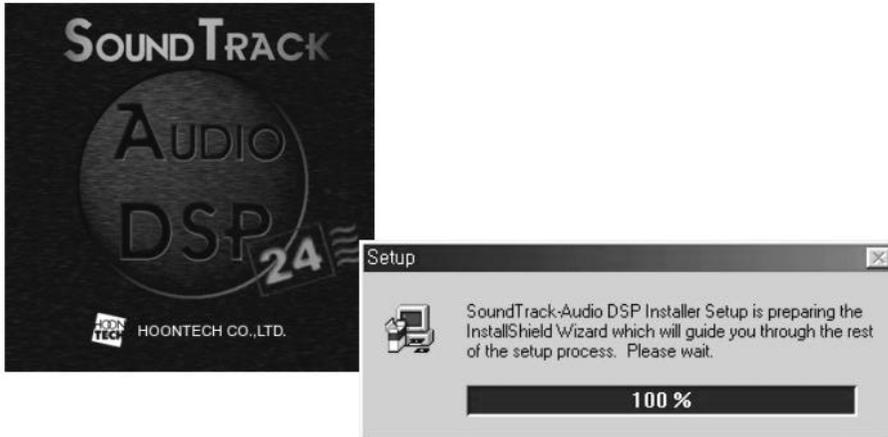
Software installation

After successfully installing the driver above, setup your Audio DSP24 software. Insert the installation CD into the drive. Click *Start>Run* and type in <drive letter>:\sound\dsp24\setup.exe in the window. Click *OK*.



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You will see the SoundTrack setup logo and see the Windows Setup indicator begin to work as below.



Next you will see the *Welcome to SoundTrack Setup* window:

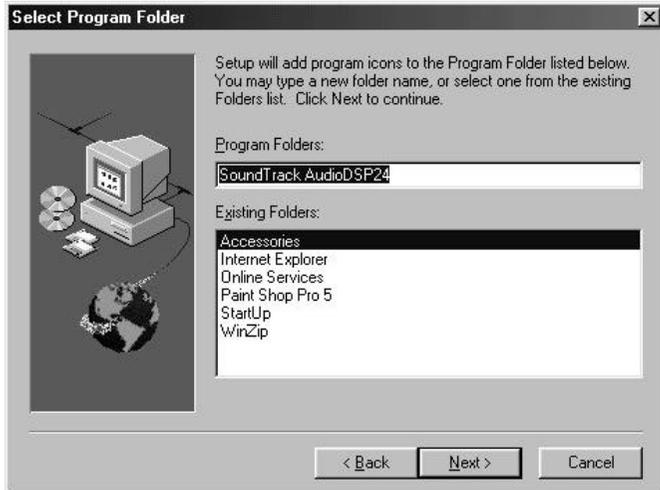


Click *Next*.

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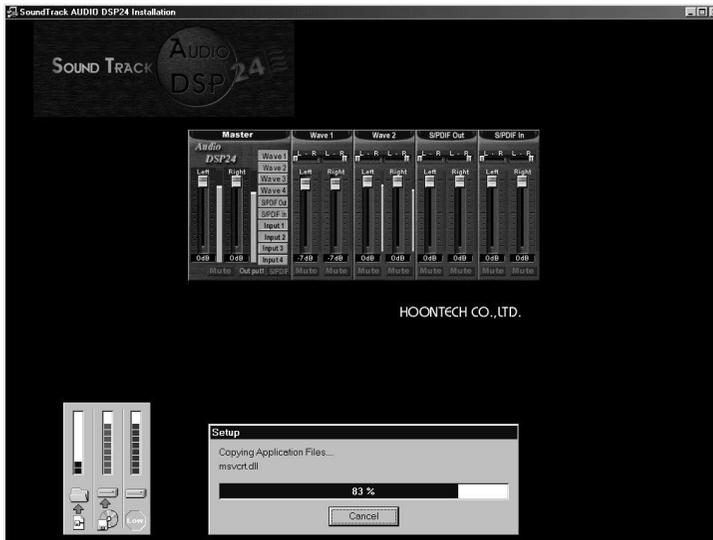


Choose the default directory by clicking *Next* or select your own by clicking *Browse* then *Next*.



Choose the default Program folder name by clicking *Next* or type in your own and click *Next*. Now you will next see the SoundTrack Audio DSP24 installation indicators.

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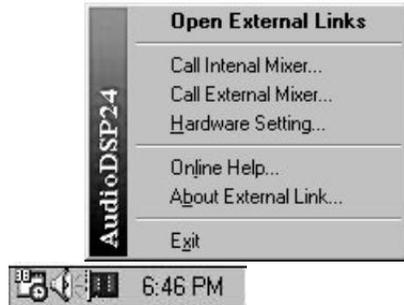
Just wait while the files are copied to your system. Next you will see the setup completion window and will be asked if you wish to launch External Links:



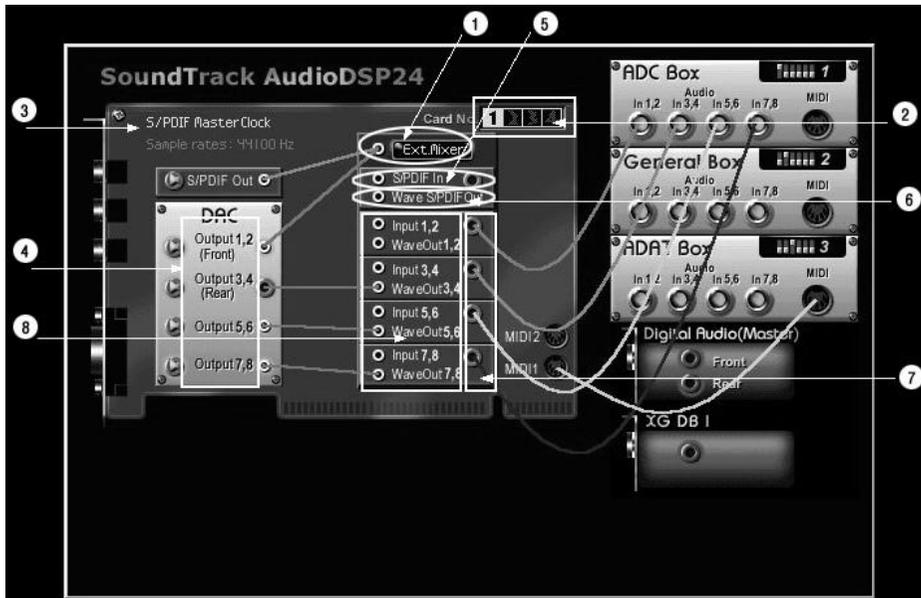
Click *Finish* if you wish to Finish and launch External Links. Declick the *Launch the External Links* button if you do not wish to do so and click *Finish*. Congratulations! You have successfully installed the SoundTrack Audio DSP24 software.

VII.External Links

The External Links application is the command center for the Audio DSP24 system. A small blue icon was added to the Systray during installation. Right-clicking the mouse on the icon will open the menu below.



Clicking on *Open External Links* will launch External Links.



With External Links signals can be routed in a wide variety of ways. You can define the inputs for recording and the setup you need for monitoring. Also the routing for the outputs is made with

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External Links. The program always displays the current signal routing on the screen. The inputs are on the right section, the outputs are left. Here is a description about the specific sections inside the program:

1. *External Mixer*: Loads the External Mixer which can be used to control all input and output channels. You can use the External Mixer for monitoring during recording and playback of several channels.
2. *Card No.*: If multiple Audio DSP24s are being used, the active card is highlighted here. To change the active card, click on the corresponding card number.
3. *Clock*: Displays if the card itself controls the synchronisation (*Internal Master Clock*) or an external device connected to the digital input (*External Master Clock*).
4. *DAC* (digital to analog converter – represents the outputs):
 - *Output 1/2* (Front), output to front speakers (when using a digital amplifier) or Out 1/2 (stereo) of the DAC box.
 - *Output 3/4* (Rear), output to rear speakers (when using a digital amplifier) or Out 3/4 (stereo) of the DAC box.
 - *Output 5/6*, output to Out5/6 (stereo) of the DAC box.
 - *Output 7/8*, output to Out7/8 (stereo) of the DAC box.
5. *S/PDIF In*: S/PDIF signal from the XG DB I or CD digital output connects here. You can record this signal using the device *ADSP24 S/PDIF In (n)*.
6. *Wave S/PDIF Out*: Digital out from XG DB I output connects here. If you want to play audio data through this output, you need to use the device *ADSP24 S/PDIF Out (n)*.
7. *Input 1/2 to 7/8*: Digital signal from external boxes such as the ADC & DAC 2000 or Digital Modulator III per input number. You can record these signals using *ADSP24 Ext. (n) Input1/2*, etc.
8. *WaveOut 1/2 to 7/8*: Use output devices such as *ADSP24 Ext. (n)* or *WaveOut1/2*, etc.

VIII. Mixer controls

Internal Mixer

Clicking on *Call Internal Mixer* will launch the *Internal Mixer*.



The user can control the systems internal components with the *Internal Mixer*. The *Internal Mixer* works basically like a normal soundcard and can be used for standard multimedia software or games for example. Please see the following section with more details:

Master

Controls the output volume of the *Internal Mixer*. The signal controlled here will be played through the Line Out connector of the PCI card itself.



You can control the panning and the master volume. Muting the signal is possible as well.

Wave

Controls the volume of the signal played using the device *ADSP24 Int. WaveOut (n)*.



You can control the panning and the wave volume. Muting the channel is possible as well.

Record

If you want to record a signal from the *Internal Mixer* (using the device *ADSP24 Int. Input (n)*), you can control the signal volume and the source in this section.



With the drop-down menu you can select the record source. The slider controls the volume of your recording.

Microphone

Controls the volume of the microphone input on the PCI card itself. Please note that the DSP24 MK II does not have this microphone input.

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You can control the volume and also boost the input level by 20dB.

Line In

This sections is used to control the volume of the Line Input signal (on the PCI card itself). Please note that the DSP24 MK II does not have this Line In connector.



You can control the panning and the Line In volume. Muting the channel is possible as well.

CD In

This sections controls the volume of the internal analog CD input of the PCI card.



You can control the panning and the CD volume. Muting the channel is possible as well.

Aux

This sections controls the volume of the internal analog Aux input of the PCI card.



You can control the panning and the Aux volume. Muting the channel is possible as well.

If you are using more than one card you must select the card you wish to control from the pull-down menu of the mixer.

External Mixer

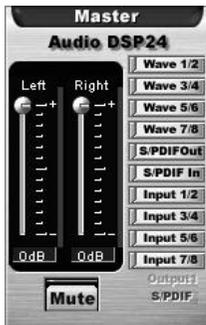
With the *External Mixer* you can control all incoming and outgoing signals (20 channels in total). Open it by clicking on *Call External Mixer*.



Note: The *External Mixer* will only change the audible signal. You can output it either through Output 1,2 and/or through the S/PDIF Output (setup in *External Links*). When you are recording an input signal, the *External Mixer* does not change the signal level. This ensures that you are always recording with best possible quality.

Master

Controls the output volume of the *External Mixer*. The signal controlled here will be played through Output 1,2 and/or the S/PDIF Output.



You can control the the volume of the left and right channels independantly. Muting the signal is possible as well.

Wave (1/2 to 7/8)

In the *Wave* section you can control the volume of the playback signal (for the devices *ADSP24 Ext.(n) WaveOut x/x*).



Muting each channel is possible. Also you can control the panning independand for the left and right channel of each stereo device.

S/PDIF Out

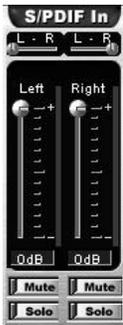
In the *S/PDIF Out* section you can control the volume of the signal of the device *ADSP24 Ext. S/PDIF Out (n)*.



Muting the left and right channel is possible independantly.

S/PDIF In

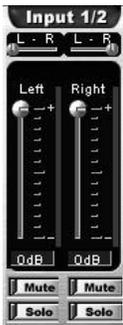
This section controls the signal from the digital input of the card.



Muting the left and right channel is possible independantly.

Input (1/2 to 7/8)

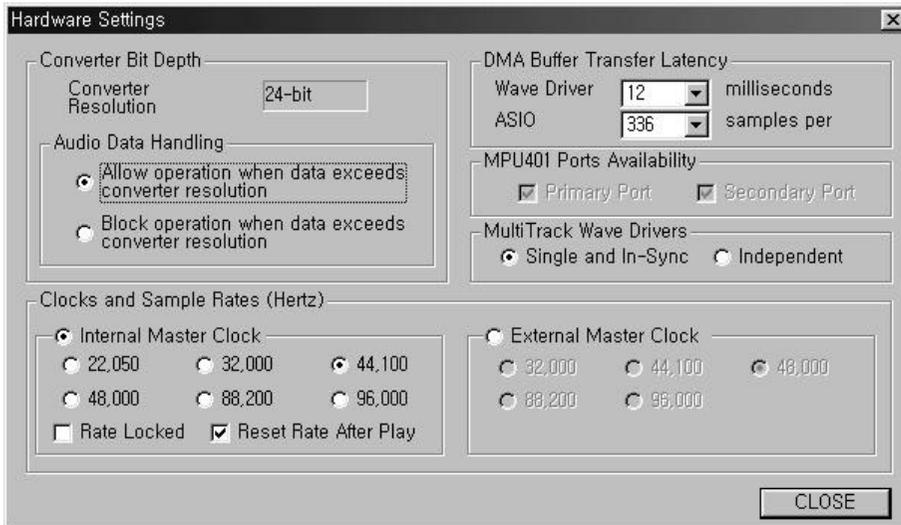
These sections are controlling the volume of the different input channels.



Muting the left and right channel is possible independantly.

IX. Hardware settings

Clicking on *Hardware settings* will open the Hardware settings window. You can select the *Internal Master Clock* settings in kHz (22, 32, 44.1, 48, 88.2 and 96kHz) for synchronisation, DMA buffer settings for Wave and ASIO devices and *External Master Clock* settings here.



Audio Data Handling

This function enables the system to allow or block continuing operation when a specific converter resolution is exceeded (usually 24-bit).

Clock and Sample Rates

These settings determine the sample rate at which the system will operate and whether an *External Master Clock* will control clock timing. The Audio DSP24 can be synchronized to an external device or set its own internal rate and impose this rate on the other devices (connected to the digital output). You must ensure that all components are operating at the same sample rate. Checking the *Rate Locked* box will result in support for only the indicated sample rate. With *Reset Rate After Play* it is possible to change the samplerate back to the previous setting after an application stopped playback.

Caution: Please note that you cannot use the card when no signal is connected to the S/PDIF input when the option *External Master Clock* is activated at the same time. The card cannot record or playback without a significant loss in audio quality in that case. So please make sure that the

option *Internal Master Clock* is activated before you start to record. However, to record from a S/PDIF source through XG DB I, the option must be set to *External Master Clock*.

DMA Buffer Transfer Latency

These settings determine latency response to system change commands. Higher buffer settings will result in greater latency but fewer playback and recording dropouts. Lower buffer settings will result in lesser latency but you may encounter playback and recording dropout problems as the system gets overloaded. Many software programs provide suggested buffer settings that you can try. Each system is different and may require experimentation and adjustment to find optimal buffer setting levels.

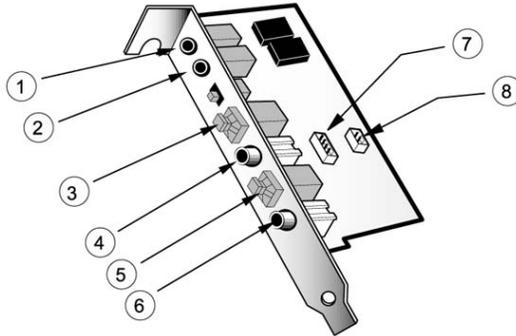
When you experience drop outs during playback and/or recording, please try to increase these values.

X. Connection with input devices and external boxes

The Audio DSP24 can be connected with a variety of external and internal devices such as the Hoontech rack-mountable box series (H-BUS), the XG DB I digital I/O board and the Digital Audio card. Simultaneous connection of several items via the *External Links* function is possible.

XG DB I

The XG DB I board features CD digital input, Optical I/O, Coaxial I/O and AES/EBU connectivity with the Audio DSP24.



1+2. AES/EBU connectors. To use them, you will need an 1/8" to XLR adapter cable.

3+5. Optical In/Out connectors.

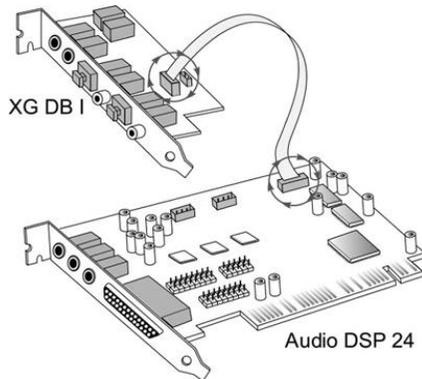
4+6. Coaxial In/Out connectors.

7. 4-pin connector for use with provided cable to hook up to a Digital soundcard.

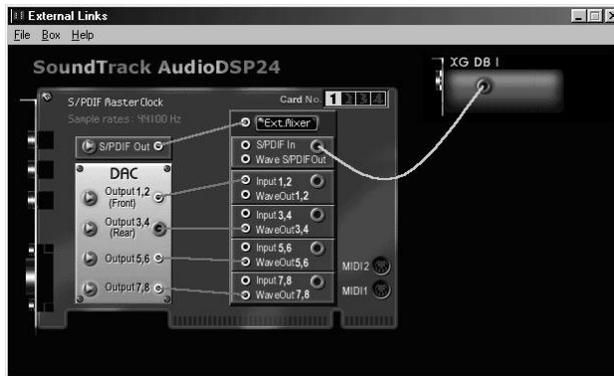
8. CD digital In 2-pin connector for digital out CD-ROM signals.

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Connection



External Links setup



You can make this connection via the option *Inputs>Add Inputs>XG DB I*. You need to do this in order to use the digital input of the card.

Note: If you wish to make a virtual connection from XG DB I to S/PDIF In, you must have an active device connected to the coaxial, optical or AES/EBU input such as a DAT-recorder. This connection changes the *Internal Master Clock* option to *External Master Clock* automatically (see IX. HARDWARE SETTINGS).

MK II Analog I/O cable

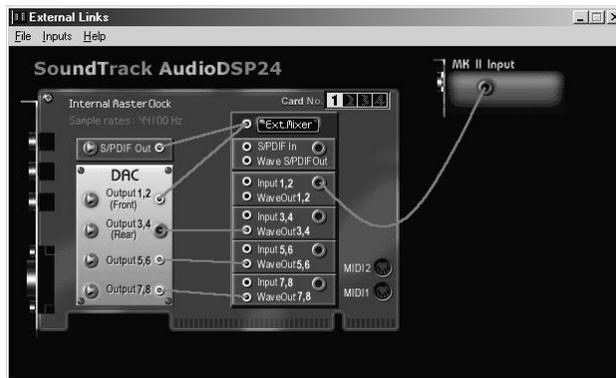
The 4 XLR to 15pin D-SUB cable is included with the DSP24 MK II version. You should have it connected to the 15pin connector on the DSP24 MK II PCI-card.

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- 1+3. balanced outputs (Channel 1,2)
- 2+4. balanced inputs (Channel 1,2)
- 5. 1/8" output for *Internal Mixer*

External Links setup



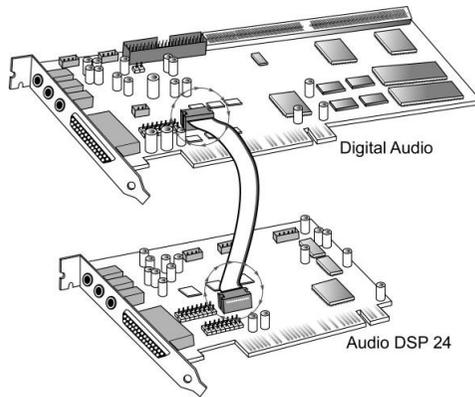
You can make this connection via the option *Inputs>Add Inputs>MK II Input*. You need to do this in order to use the two input channels.

This cable cannot be connected with the normal hardware version of the SoundTrack Audio DSP24.

SoundTrack Digital Audio

The SoundTrack Digital Audio 4ch and 16ch cards from Hoontech provide DSP based sampling and mixing functions. If you use such a soundcard, you can cascade it internally with the Audio DSP24.

Connection



Align red-line on flat cable with triangle marking on the board for proper connection. Now the output signal of the SoundTrack Digital Audio card is available in the *External Mixer* of your SoundTrack Audio DSP24.

External Links setup

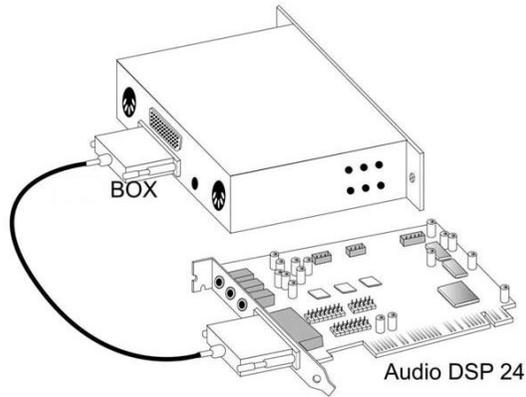


You can make this connection via the option *Inputs>Add Inputs>Digital Audio*.

External Boxes

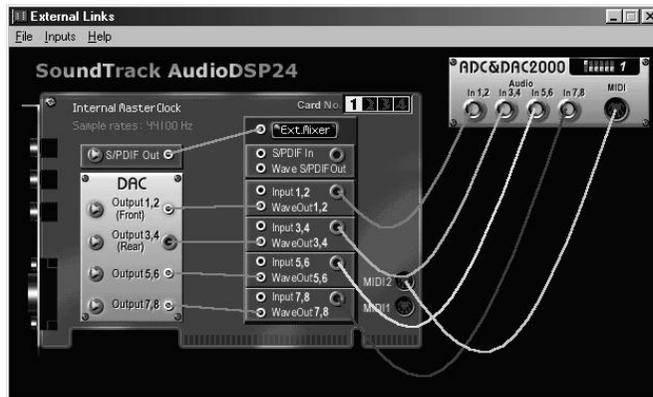
Up to four external boxes with input channels can be connected to the Audio DSP24.

Connection



If you connect several external boxes to the same Audio DSP24 card, the first card is connected to the card as shown in the picture above. The second box is connected to the second data connector of the first box and so on. You have to make sure that each box has a unique number. The number of an external box can be set with the DIP switches on the right side. Make sure to select the number before you are mount the box to a rack.

External Links setup



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If you use a ADC III or ADC&DAC2000 box for example, please select the corresponding entry in *External Links* (e.g. *Inputs>Add Inputs>ADC&DAC2000*). If you use a different external box, you can choose *General Box*. Be sure to set the same box ID number in the software as the DIP switch setting on the right side of the external box.

XI. Usage with software applications

For each application you are using with the Audio DSP24 you have to follow some configuration steps. Basically, every stereo input or output channel of the card can be used like a normal soundcard using the corresponding devices. Normally every program will have a configuration function where you can select the devices.

Available in- and output devices

The available wave devices for playback and recording are (“n” will be substituted with the number of the installed Audio DSP24 card, normally 1):

- *ADSP24 Int. WaveOut (n)* – plays audio data through the *Internal Mixer* (which will be audible on the Line Out of the card). Please note that this driver only supports 16bit/48kHz as maximum resolution and samplerate.
- *ADSP24 Ext.(n) WaveOut 1/2* – first stereo wave output device. Use this driver to play audio through outputs of an external box. See section VII in this manual for details.
- *ADSP24 Ext.(n) WaveOut 3/4* – second stereo wave output device. Use this driver to play audio through outputs of an external box. See section VII in this manual for details.
- *ADSP24 Ext.(n) WaveOut 5/6* – third stereo wave output device. Use this driver to play audio through outputs of an external box. See section VII in this manual for details.
- *ADSP24 Ext.(n) WaveOut 7/8* – fourth stereo wave output device. Use this driver to play audio through outputs of an external box. See section VII in this manual for details.
- *ADSP24 Ext. S/PDIF Out (n)* – plays audio through the stereo S/PDIF digital output of XG DB I. See section VII in this manual for output routing details.
- *ADSP24 Multiple PCM Out (n)* – this is an interleaved driver for playback of several channels at the same time. Some older audio applications are using this driver to access multiple channels on soundcards.
- *ADSP24 Int. Record (n)* – records the signal from Internal Mixer. Use this driver to record from the Line Input on the card. Please note that this driver only supports 16bit/48kHz as maximum resolution and samplerate.
- *ADSP24 Ext.(n) Input 1/2* – first stereo input driver to record input signals from external boxes. Check section X in this manual to learn how to use external boxes.
- *ADSP24 Ext.(n) Input 3/4* – second stereo input driver to record input signals from external boxes. Check section X in this manual to learn how to use external boxes.

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- *ADSP24 Ext.(n) Input 5/6* – third stereo input driver to record input signals from external boxes. Check section X in this manual to learn how to use external boxes.
- *ADSP24 Ext.(n) Input 7/8* – fourth stereo input driver to record input signals from external boxes. Check section X in this manual to learn how to use external boxes.
- *ADSP24 S/PDIF In (n)* – records signal from the S/PDIF input of XG DB I. Check section X in this manual to learn how to use XG DB I.
- *ADSP24 Multiple PCM In (n)* – this is an interleaved driver to record several channels at the same time. Some older audio applications will use this driver to access multiple channels on soundcards.
- *ADSP24 Digital Mixer (n)* – with this driver you can record the output signal of the External Mixer.

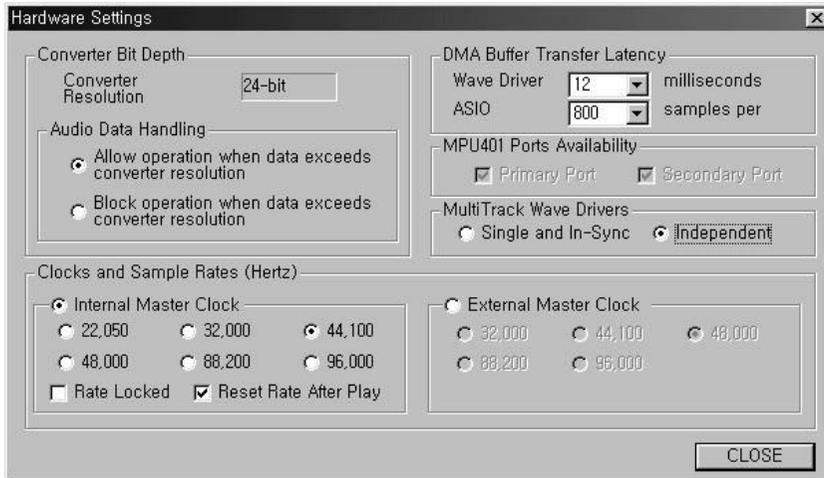
Additionally, the card provides an ASIO 2.0 driver called *ADSP24 ASIO*. It allows access to all 10 input and 10 output channels of the *External Mixer* in applications that support ASIO (like Cubase VST). ASIO allows applications to record and playback at a very low latency (down to 3ms). This means that it is possible to apply realtime effects with your systems CPU input or output signals. Also, you can use software synthesizers to output through ASIO.

Please note that most applications will need special settings to ensure that the SoundTrack Audio DSP24 is working properly. We are continuously testing the card with various popular applications. In the following sections we have provided examples of a few applications. Please take the time to review it to avoid problems later. If you still encounter problems or if you are using different programs, we recommend to contact Hoontech using the Q&A support forum on the internet (<http://www.hoontech.com>).

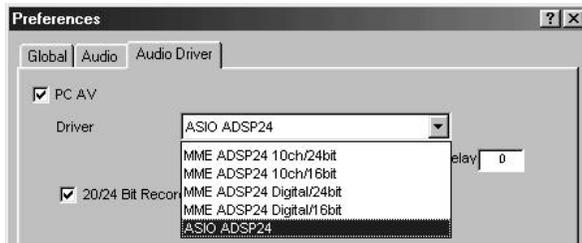
Setting up Emagic Logic SoundTrack24

Logic SoundTrack24 is a special version of the Logic Software from Emagic, designed to be used with the Audio DSP24 card. It can either use the ASIO or the MME driver of the Audio DSP24 for recording and playback.

- call *File>Hardware settings* in External Links.



- select the ASIO buffer size: we recommend using a value of about 1800 – depending on the system performance.
- make sure the option *Rate Locked* is disabled
- set the option *MultiTrack Wave Drivers* to *Independent*
- launch Logic SoundTrack24 and select the option *Audio>Audio Hardware & Drivers*.



- select *Audio & Hardware Drivers* and select *ASIO ADSP 24* as ASIO device if you want to use the ASIO driver. If you want to work with 24-bit resolution, enable the option *20/24 Bit Recording*.

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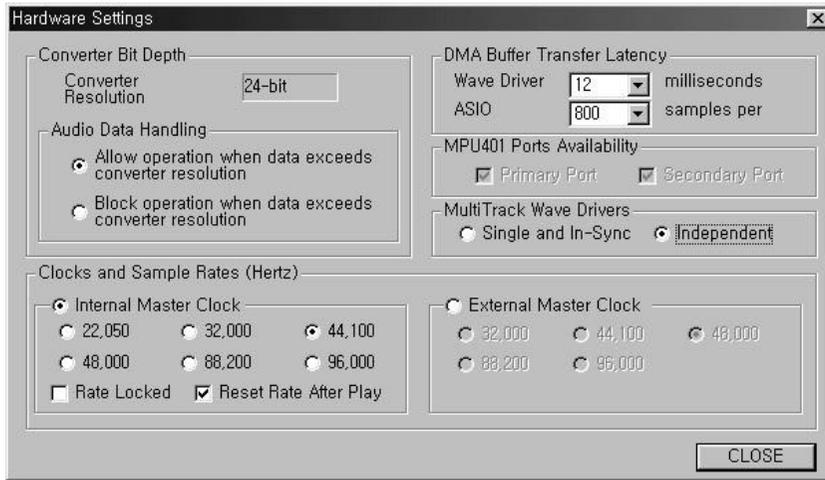
- If you prefer to use the MME driver, select one of these entries:
 - MME ADSP24 10ch/24bit* – record and playback on all channels with 24-bit resolution
 - MME ADSP24 10ch/16bit* – record and playback on all channels with 16-bit resolution
 - MME ADSP24 Digital/24bit* – to use just the digital in- and outputs with 24-bit resolution
 - MME ADSP24 Digital/16bit* – to use just the digital in- and outputs with 24-bit resolution
- exit Logic and launch it again to activate the settings.

Please also refer to the documentation of Logic SoundTrack24.

Setting up Steinberg Cubase VST/24 3.72

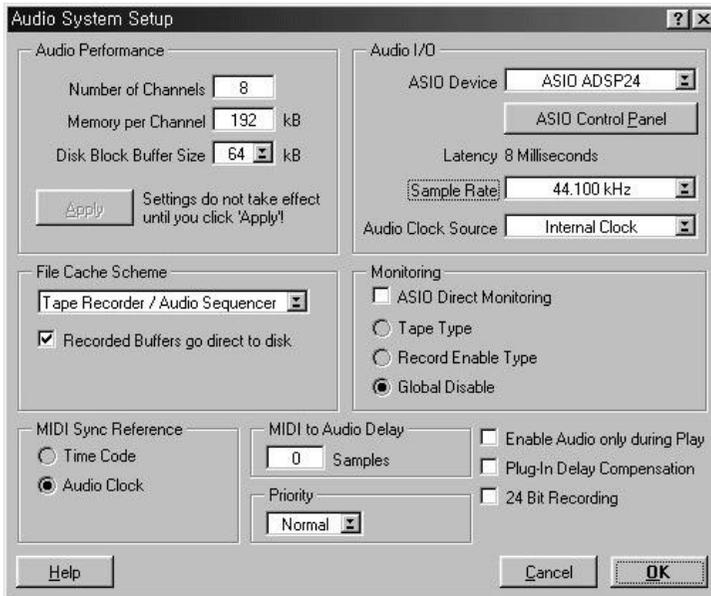
Cubase VST 3.72 from Steinberg uses the ASIO specification to access recording hardware. Steinberg has defined ASIO and improved support for recording multiple channels at the same time. ASIO features reduced latency for playback of VST plugins and instruments. Please note, that other Steinberg programs (like Nuendo, Cubasis VST or Cubase VST 5.0) have a very similar setup when using the ASIO driver. To setup the Audio DSP24 in Cubase VST, please follow these steps:

- call *File>Hardware settings* in External Links.



- Select the ASIO buffer size. On faster systems (Pentium III, Athlon) it is usually safe to use the smallest setting. This will give you 3ms of latency (at 96kHz, its 7ms for 48kHz and 8ms for 44.1kHz). On other systems you may try this setting but increase the buffer size later, depending on the performance.
- Start Cubase VST and select the option *Audio>System*.

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- In the section *Audio Performance*, set *Number of Channels* to 16 (recommended).
- In the *Monitoring* section, select *Global Disable* (recommended). If you want to monitor signals in realtime and adding VST plugin effects at the same time, select *Tape Type* instead.
- In the upper right corner under *ASIO Device* select *ADSP24 ASIO*. By clicking on *ASIO Control Panel*, you can also change the *samples per buffer* value.
- Below that you can choose the *Sample Rate*.
- If you want to use the Audio DSP24's realtime monitoring functions (without adding effects to the monitor signal), select *ASIO Direct Monitoring*

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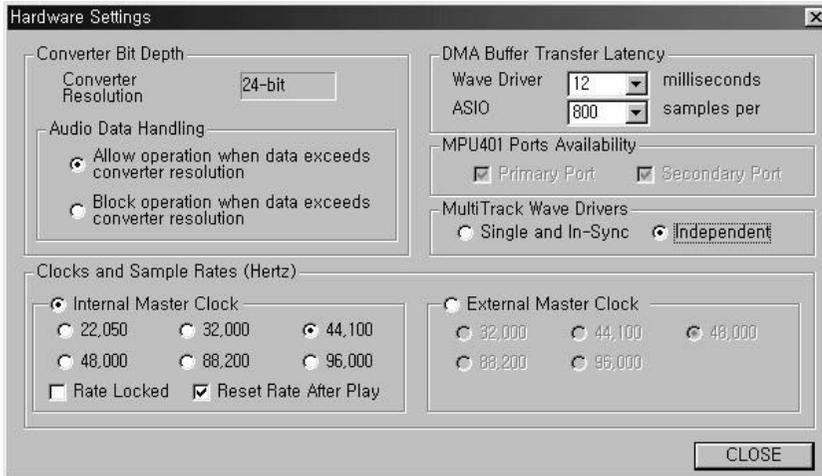


To define which input and outputs to use in Cubase VST, first go to *Audio>Inputs*. A window will appear that allows you to activate or deactivate each input (stereo). You can assign these inputs to the channels in the *VST Channel Mixer* then (via *Audio>Monitors*). For the outputs, you need to open *Audio>Master*. In this window you can deactivate a stereo bus for each stereo output. These busses can be used internally in Cubase VST to route signals to the outputs. You can find more information about this in the Cubase VST documentation. Also, the latest updates for Cubase VST can be downloaded from <http://www.steinberg.de>.

Setting up Emagic Logic Audio Platinum 4.5

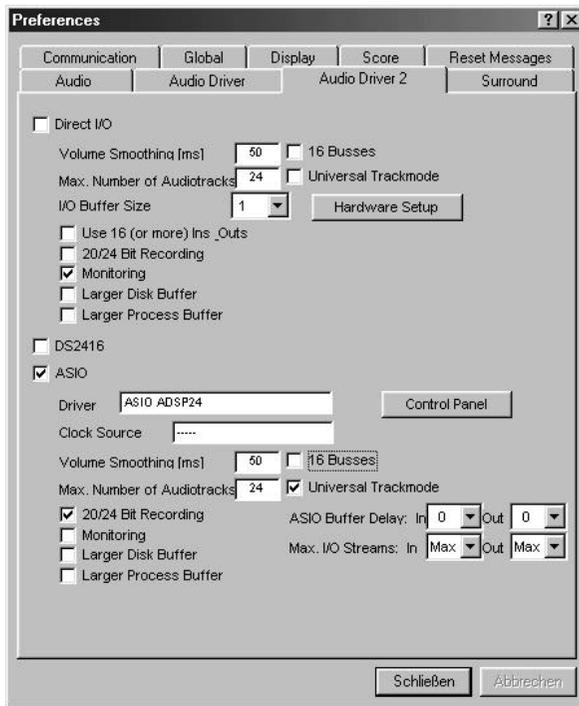
The powerful Audio-/MIDI-Sequencer Logic Audio Platinum 4.5 (and higher) from Emagic also uses ASIO drivers. Follow these steps to setup the application for the Audio DSP24.

- call *File>Hardware settings* in External Links.



- select the ASIO buffer size: we recommend using a value of *800* or higher – depending on the system performance.
- launch Logic Audio Platinum and select the option *Audio>Audio Hardware & Drivers>Audio Driver 2*.

SOUNDTRACK Audio DSP24



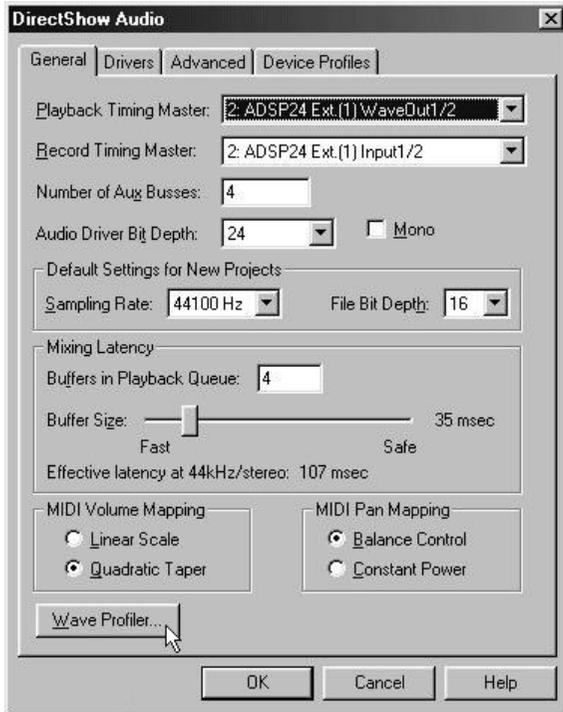
- check the box *ASIO* and select *ASIO ADSP24* as ASIO device. If you want to record with 24-bit resolution, check the box *20/24 Bit Recording*
- exit Logic Audio and launch it again to activate the changes.

You can get the latest informations about Logic Audio Platinum at <http://www.emagic.de>. If you use previous 4.xx versions of Logic Audio, we recommend to get the free update to Version 4.5 at least.

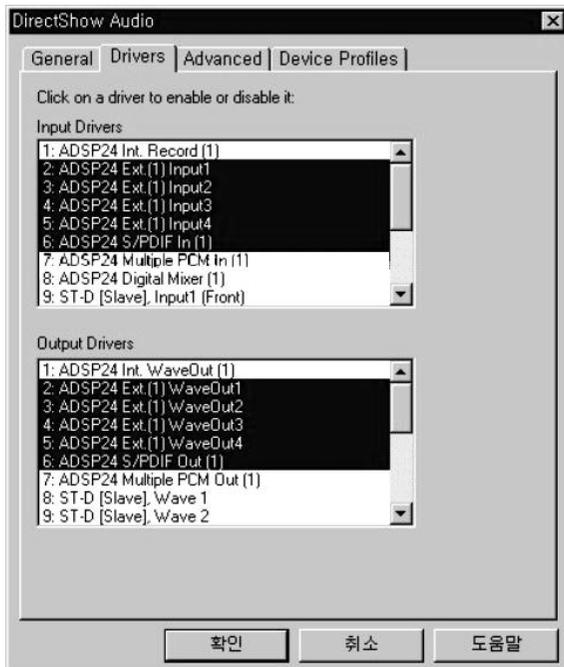
Setting up Cakewalk 9.x

Cakewalk is a famous Audio-/MIDI-Sequencer and Recordingsoftware. It uses the MME drivers of the SoundTrack Audio DSP24.

- launch Cakewalk and select *Options>Audio*. The *DirectShow Audio* dialog will be displayed.



- Click on *Drivers*. You will see a list of MME devices for Input and Output. Select the entries you want to use (check the section AVAILABLE IN- AND OUTPUT DEVICES earlier in this chapter for reference).



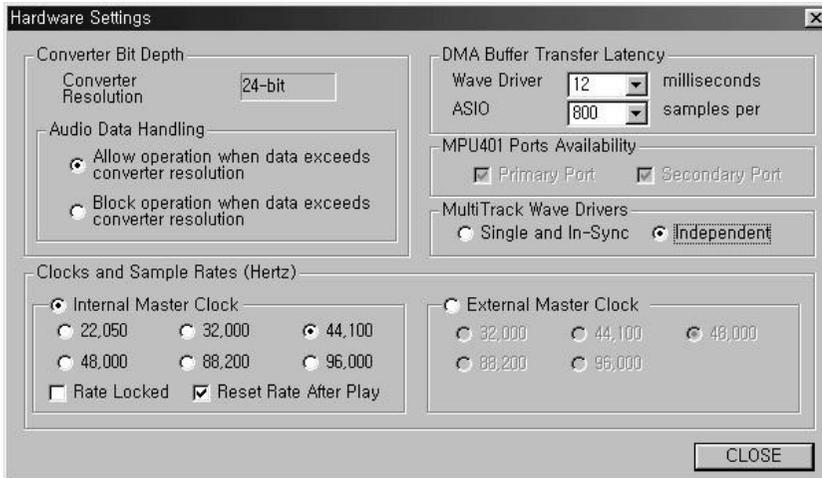
- Go back to *General* and select *Wave Profiler*. Follow the directions on screen until you see the message *Audio hardware has been successfully profiled*.
- Select *ADSP24 Ext.(n) WaveOut 1,2* as *Playback Timing Master* and *ADSP24 Ext, (n) Input 1,2* as *Record Timing Master*. If you are recording from the *S/PDIF* input, select *ADSP24 S/PDIF In (n)* instead. The option *Audio Driver Bit Depth* should be set to *24*.
- Select the sample rate and resolution you want to use under *Default Settings for New Projects*.
- *Mixing Latency*: Basically, you can set *Buffers in Playback Queue* as *4*. Settings less than *4* will result in lower latency but the system performance could be lower, resulting in possible drop-outs. Start with buffer sizes suggested by *the Effective latency tests*, usually around *100msec*. When the latency needs to be under *100msec*, click on the *Advanced* tab and enable the *WavePipe(TM) Acceleration* option. Please note that each system will have different optimal settings. You should experiment with the settings to get the perfect setup for your system.
- Under *Device Profiles*, enable the option *Use Wave Out Position For Timing*.

You can get the latest updates and informations on Cakewalk on <http://www.cakewalk.com>.

Setting up BPM Studio Professional from Alcatech

BPM Studio is a professional DJ mixing application with support for CD, Wave audio and MP3 files. Use the ASIO drivers of the Audio DSP24 to achieve low latency and excellent performance. Follow these steps to setup the application for the Audio DSP 24.

- Call *File>Hardware settings* in External Links.



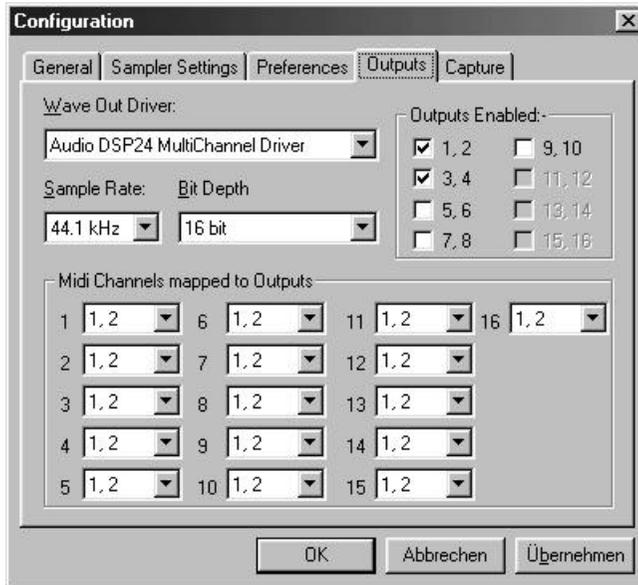
- Select the ASIO buffer size: we recommend to use the value *1800* or lower, depending on the system performance.
- Launch BPM Studio and open the *Audio I/O* dialog (using the popup menu opened with a click on the right mouse button). Select ASIO as driver model on the upper right corner. Now you can assign the different output channels to the different players and functions of BPM Studio.

You can get the latest information about BPM Studio online at <http://www.bpmstudio.com>.

Setting up Nemesys GigaSampler 1.6

GigaSampler from Nemesys is a powerful and very popular software sampler. The SoundTrack Audio DSP24 provides a special GSIF-driver (GigaSampler-InterFace) that allows you to use the separate outputs of the card with GigaSampler.

- Launch GigaSampler and select *Config>Outputs*.



- Under *Wave Out Driver*, select *Audio DSP24 MultiChannel Driver*.
- Select the Output channels you want to use on the right side under *Outputs Enabled*.
- Now assign the *Midi Channels mapped to Outputs* in the lower area.

You can get the latest informations and updates of GigaSampler on their website <http://www.nemesysmusic.com>.