OASYS PCI

Open Architecture Synthesis, Effects, and Audio I/O

Installation Guide

English

This is a hypertext-enabled document. All references to page numbers are live links. Just click on the page number, and the document will go there automatically!

KORG SoundLink DRS

The FCC Caution

This device complies with Part15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The FCC Regulation Warning

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

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

Unauthorized changes or modification to this system can void the user's authority to operate this equipment.

Canada

This Class B digital apparatus complies with Canadian ICES-003.

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And, CE mark which is attached after January 1, 1997 means it conforms to EMC Directive (89/336/EEC), CE mark Directive (93/68/EEC), and Low Voltage Directive (73/23/EEC).

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Manual Version: 7/23/01

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KORG INC. OASYS PCI

FC Tested to comply with FCC Standards

FOR HOME OR OFFICE USE

Contents

English

Introduction

OASYS PCI

Thank you!

Thank you for purchasing the Korg Soundlink DRS OASYS PCI.

The OASYS PCI integrates high-quality synthesis, effects processing, and computer audio input and output into a single, professional PCI audio card–the perfect complement to any MIDI sequencer or software-based digital audio workstation.

State of the art DSP synthesis

The OASYS PCI's synthesizers represent a continual evolution from Korg's pioneering efforts in DSP synthesis, with many improvements and additions.

Synthesis algorithms are plug-ins loaded from disk, allowing easy upgrades and expansion. Korg and third-party sound developers can easily introduce new algorithms, or even entirely new types of synthesis.

Incredible effects processing

The OASYS PCI starts with all of the effects of the award-winning Korg Trinity workstation, and builds from that foundation. Effects can be used to process the onboard synthesizer, tracks from digital audio programs, and live audio inputs, and can be used on channel inserts, as sends, and on output busses. As with synthesis algorithms, all effects are plug-ins loaded from disk, allowing for easy expansion in the future.

Professional, multi-format analog and digital I/O

The OASYS PCI features a total of 12 inputs and outputs - stereo analog, stereo S/PDIF, and eight-channel ADAT optical. All inputs and outputs are 24-bit, and all can be used simultaneously with compatible multitrack audio software. Word clock and ADAT timecode I/O allow easy integration with other digital audio equipment.

Seamless integration with MIDI and digital audio software

The OASYS PCI supports all major audio and MIDI standards, for compatibility with virtually every audio and MIDI program.

The output of the synthesizers and effects can be recorded directly into digital audio software, without any external connections. The OASYS PCI Editor software allows configuration of all mixing, effects, and synthesis parameters, so that no special support is necessary from any digital audio program.

Designed to collaborate with your CPU

You can use your favorite PowerPC or Pentium-based effects plug-ins, such as VST, MAS, and DirectX plug-ins, simultaneously with OASYS PCI effects and synthesizers.

Complete automation via MIDI

Every parameter in the OASYS PCI can be modulated via standard MIDI controllers, allowing easy automation of mixing, synthesis, and effects from any MIDI sequencer.

About The Manuals

The documentation for the OASYS PCI is divided into several parts, as described below.

Installation Guide

This is the manual that you are reading right now. It provides a brief overview of the product, software and hardware installation instructions, and problem-solving resources. It is divided into four main sections.

Introduction

The Introduction provides an overview of the OASYS PCI, including a description of the documentation. As museum maps say, "you are here."

Installation and Setup

This section describes hardware installation and audio connections, software installation and configuration, and integration of the OASYS PCI into different basic studio setups.

Getting Started

The Getting Started section walks you through loading and playing some demo sounds, introduces the major OASYS PCI file types, and provides an overview of the user interface.

Appendix

This section includes information on troubleshooting and contacting technical support, as well as functional specifications for the OASYS PCI.

Users Guide

The Users Guide explains the basic functionality of the OASYS PCI, and is divided into two main sections. It is provided in Adobe Acrobat (.pdf) format, which you may read online or print out, as you wish.

Using the OASYS PCI

This section offers step-by-step instructions for performing specific tasks and achieving specific goals with the OASYS PCI.

Look to the Using the OASYS PCI System section to answer the question, "how do I do this?"

Reference

This section describes every window, parameter, and menu command in the OASYS PCI, with the exception of algorithm-specific Patch and Effect Control Panel parameters.

Use the Reference section to answer the question, “what does this do?”

Patches and Effects Guide

This manual includes complete descriptions of the Control Panel parameters for each Patch and Effect. It is provided in Adobe Acrobat (.pdf) format, which you may read online or print out, as you wish.

OASYS PCI FAQ

FAQ stands for “Frequently Asked Questions.” The OASYS PCI FAQ, which is automatically installed with the OASYS PCI software, contains a complete website devoted to troubleshooting, setup and compatibility with third-party software and hardware, and usage tips.

The FAQ is in HTML format, so that it can be read by any standard web browser, such as Netscape Navigator or Internet Explorer. To search through the FAQ, start by opening the document named “OASYS PCI_faq_index.htm.”

In addition to the FAQ installed with the OASYS PCI software, the latest version can always be found on the OASYS PCI website, at http://www.korg.com/oasyspci.htm.

Installation and Setup

Hardware Installation

Installing the OASYS PCI is simple and straightforward. However, to make sure that you don't damage the card or the computer, please read the instructions on pages 8-13 *completely* before performing the installation. They're short, they're sweet, and they're even sprinkled with a few zippy graphics–the perfect accompaniment to a brief coffee break.

Unpacking

The OASYS PCI packages contain the following items:

- OASYS PCI audio card (don't remove this from its envelope yet!)
- OASYS PCI software CD-ROM
- Analog breakout cable
- Digital breakout cable
- This manual
- Warranty card

The package may also contain a bundled software application.

System Requirements

MacOS

To use the OASYS PCI on a MacOS computer, you will need:

- A Macintosh computer with a PowerPC processor. For use as a standalone application, Korg recommends a minimum of a 200MHz 604e processor. For use in conjunction with digital audio software, Korg recommends a minimum of a 233MHz G3.
- MacOS version 8.5.1 or later.
- CD-ROM drive for installing software.
- A color monitor, with minimum resolution of 1024 x 768.

Third-party digital audio software may have additional requirements; please consult your manuals for details.

Windows 95/98

To use the OASYS PCI on a Windows 95/98 computer, you will need:

- A Windows 95/98-compatible computer. For use as a standalone application, Korg recommends a minimum of a 200MHz Pentium II processor. For use in conjunction with digital audio software, Korg recommends a minimum of a 300MHz Pentium II processor.
- Microsoft Windows 95 or Windows 98.
- CD-ROM drive for installing software.
- A color monitor, with minimum resolution of 1024 x 768.

Third-party digital audio software may have additional requirements; please consult your manuals for details.

Handle carefully!

Avoid static electricity

The OASYS PCI card is packaged within a protective anti-static envelope, which prevents static electricity from damaging its delicate electronic components. It's a good idea to keep this envelope around; whenever you need to ship your card, or to store it outside of your computer, put it back in its envelope.

Before handling the card, **always discharge any static electricity from your clothes and body by touching a grounded metal surface, such as the case around your computer's power supply**. After doing this, use one hand to hold the card by the metal jack panel (where the connectors are), and touch the power supply again with your other hand.

While working with the card, avoid moving around on carpeted surfaces; shuffling your feet on a rug is almost guaranteed to build up a static charge. If you need to walk around in the middle of working with the card, just repeat the static discharge procedure before touching the card again.

These simple steps will ensure that a tiny little jolt of static electricity–like the kind that holds your socks together when they come out of the dryer–doesn't zap your card into oblivion.

Hold the OASYS PCI by its edges

Did we already mention that the OASYS PCI uses a whole bunch of delicate electronic components? Well, OK, so we've said it again. To avoid damaging those lovely little silicon jewels, **always hold the OASYS PCI by the edges of the card,** or by the metal jack panel (where the connectors are). Don't touch the electronic parts, the PCI connector pins, or any of the traces on the board (those little silvery paths that run between the components).

There, we're done nagging now.

Installing the OASYS PCI card in your computer

The instructions below are a brief overview of the installation procedure; please consult your computer's manuals for more detailed instructions.

1. **Shut down the computer.**
2. **Detach the power cable from the computer.**
3. **Remove the computer's main cover.**
4. **Choose any available PCI slot.**

When installing into Apple-branded MacOS computers, you can use any available PCI slot. Don't worry about which ones are "bus master" slots; on Apple computers, all PCI slots are capable of bus mastering. If you are installing the

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OASYS PCI into a MacOS clone computer (from a manufacturer other than Apple), see the HTML FAQ for details on which PCI slots are appropriate.

When installing into a Windows-compatible PC, consult your computer's manual for details. OASYS PCI requires a bus master slot; on most modern PC motherboards, all slots are capable of bus mastering.

For each slot, there is a small port on the back of the computer, which allows access to one end of the card. For the OASYS PCI, the port allows access to the jack panel, into which you plug all your digital and analog connectors. There will be a small cover over the port.

5. **Remove the cover from the port on the back of the computer.**

You may need to use a screwdriver, if your computer uses screws to secure the PCI cards and port covers. If you remove a screw, save it–we'll use it again later on.

6. **Before handling the OASYS PCI card, touch a grounded metal surface (such as your computer's power supply). Follow the complete instructions under "Handle carefully!," on page 9.**

7. **Before plugging the card in, align it with the selected PCI slot.**

The jack panel should line up with the port on the back of the computer. There also should be a corresponding guide towards the front of the computer, to hold the other end of the card in place.

8. **Press the card gently but firmly into the slot, until the connector is fully inserted.**

Don't force the card into the slot. If you encounter a lot of resistance, pull the card out and try inserting it again.

9. **To make sure that the connector is properly inserted, pull on the card gently.**

If the card resists your gentle pull and stays in place, then it's inserted properly.

If it moves easily, then go back to step 8 and try again.

10. **If you removed a screw in step 5, use it to secure the card to the case.**

11. **After installing the card in the slot, replace the computer's main cover and power cable.**

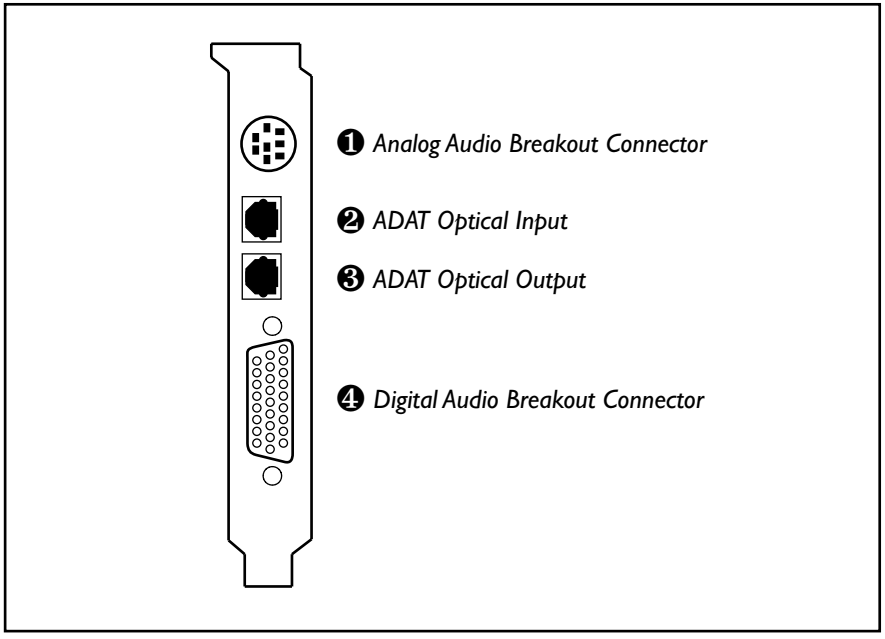
With the card installed in the computer, you're now ready to connect it to your audio system.

Audio Connectors

Korg engineers worked valiantly to squeeze an incredible number of inputs and outputs onto the OASYS PCI's relatively small jack panel. To produce such a densely packed piece of digital audio real estate, they used two breakout cables–that is, cables with a single connector on one end, fanning out to several connectors on the other.

One of the breakout cables is dedicated to analog audio input and output, and the other is dedicated to digital signals, including S/PDIF audio, ADAT timecode, and BNC word clock I/O.

The OASYS PCI jack panel



❶ Analog breakout connector

This connector should only be used with the special Analog Audio breakout cable included with the OASYS PCI. This cable provides two analog inputs and two analog outputs, on standard 1/4" jacks.

Analog inputs left and right

These connectors are used to bring analog signals into the OASYS PCI. You can connect this to the output of a mixer, microphone pre-amp, synthesizer, and so on. The analog inputs use standard 1/4", unbalanced connectors, referenced to a +4dBu signal level. The OASYS PCI uses 24-bit A/D converters, ensuring the highest possible audio quality.

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Microphones and electric guitar outputs should be sent through a mixer or pre-amp first, to bring them up to +4 levels; otherwise, their signals will be weak.

Analog outputs left and right

These connectors are used to bring analog signals out of the OASYS PCI, into your mixer, amplifier, etc.

As with the analog inputs, described above, the analog outputs use standard 1/4", unbalanced connectors, referenced to a +4dBu signal level. The OASYS PCI uses 24-bit D/A converters, ensuring the highest possible audio quality.

❷ ADAT optical input

The ADAT optical input carries eight channels of digital audio. You can connect this to the digital output of any multitrack recorder, digital mixer, effects processor, or other digital audio device which supports the ADAT optical format.

You can also connect this to an ADAT optical A/D converter, which will provide the OASYS PCI with eight additional analog inputs.

The OASYS PCI provides full 24-bit ADAT optical functionality.

❸ ADAT optical output

The ADAT optical output carries eight channels of digital audio. You can connect this to the digital input of any multitrack recorder, digital mixer, effects processor, or other digital audio device which supports the ADAT optical format.

You can also connect this to an ADAT optical D/A converter, which will provide the OASYS PCI with eight additional analog outputs.

The OASYS PCI provides full 24-bit ADAT optical functionality.

❹ Digital breakout connector

This connector should only be used with the special Digital breakout cable included with the OASYS PCI. This cable has a multi-pin connector at one end, which connects to the OASYS PCI, and fans out to a pair of RCA S/PDIF jacks, a pair of BNC Word Clock connectors, and a pair of ADAT 9-pin sync connectors.

S/PDIF input. The white RCA connector, labeled "In," is the S/PDIF input. You can connect this to the S/PDIF output of a DAT, signal processor, sampler, and so on. Please use high-quality, shielded, 75-ohm cables manufactured specifically for video or digital audio.

The OASYS PCI provides full 24-bit S/PDIF functionality.

S/PDIF output. The yellow RCA connector, labeled "Out," is the S/PDIF output. You can connect this to the S/PDIF input of a DAT, signal processor, sampler, and so on. Please use high-quality, shielded, 75-ohm cables manufactured specifically for video or digital audio.

The OASYS PCI provides full 24-bit S/PDIF functionality.

Word Clock input. The white BNC connector, labeled "In," is the Word Clock input. This allows the sample rate of the OASYS PCI to be controlled by an external device. Connect this to the word clock output of the master clock source.

The Word Clock input requires a shielded, video-quality cable (75-ohm or greater impedance) with BNC connectors. This type of cable is different from those commonly used in analog audio applications, but is readily available at professional audio and video dealers.

Word Clock output. The yellow BNC connector, labeled "Out," is the Word Clock output. This allows the OASYS PCI to control the sample rate of an external device; it will always echo the currently selected Clock Source. Connect this to the word clock input of the slave device.

As with the Word Clock input, above, the Word Clock output requires a shielded, video-quality cable, with 75-ohm or greater impedance.

ADAT sync input. This 9-pin connector receives timecode from an ADAT system. OASYS PCI-compatible digital audio software can use this to synchronize recording and playback with a connected ADAT system. Connect this to the ADAT's sync out port.

ADAT sync output. This 9-pin connector passes through timecode and MMC commands received at the ADAT sync input. You can use this to connect to other ADAT sync-compatible devices.

Software Installation

Installing the OASYS PCI software for MacOS

The OASYS PCI includes several important pieces of software for MacOS-compatible computers, including low-level drivers, ASIO drivers, Sound Manager drivers, OMS and FreeMIDI drivers, editing software, synthesizer sounds, and effects. All of these are included on the CD-ROM shipped with the OASYS PCI.

To install the OASYS PCI software for MacOS:

1. **Open the Extension Manager control panel.**
2. **If you've already created an Extension Set for use with digital audio programs, select it and skip to step 3. If not:**
   - 2a. **Select the MacOS Base Set.**
   - 2b. **Press the Duplicate Set button in the bottom right-hand corner of the window.**
   - 2c. **Give the set a descriptive name, such as "audio" or "OASYS PCI."**
3. **Turn off virtual memory, in the Memory control panel.**

We recommend that virtual memory be disabled, especially when using the OASYS PCI with digital audio software.

4. **Turn off AppleTalk, in the AppleTalk control panel.**
5. **Turn off File Sharing, in the Control Strip or in the File Sharing control panel.**

AppleTalk and File Sharing can adversely affect the performance of the CPU.

6. **Insert the Korg OASYS PCI CD-ROM into your computer's CD-ROM drive.**

The disk's icon and window will appear on the desktop.

7. **Double click on the CD-ROM's "OASYS PCI Read Me" file.**

This is a text file which contains any late-breaking information about the card and the software, including any additional installation instructions.

8. **Read the file.**

After reading the file and following any instructions that it might contain…

9. **Double-click on the "OASYS PCI Installer" icon.**

The OASYS PCI Installer will open.

10. **Follow the instructions to install the OASYS PCI software on your hard disk.**

In general, it's best to use the "Easy Install" option.

11. **Restart the computer before using the OASYS PCI.**

You must restart in order to use the OASYS PCI software.

12. **After successfully re-starting with the OASYS PCI extensions loaded, reset the Extension Manager as desired.**
13. **If you will be using the OASYS PCI with a simple serial port MIDI interface, without either OMS or FreeMIDI, see "Serial Port MIDI Setup (MacOS)," on page 17.**
14. **If you will be using the OASYS PCI with OMS-compatible software, see "Configuring OMS (MacOS)," on page 20.**
15. **If you will be using the OASYS PCI with FreeMIDI-compatible software, see "Configuring FreeMIDI (MacOS)," on page 23.**
16. **If you will be using the OASYS PCI with ASIO-compatible software, see "Configuring ASIO Software," on page 26.**

Installing the OASYS PCI software for Windows 95/98

The OASYS PCI includes several important pieces of software for Windows 95/98 computers, including low-level drivers, MME drivers, ASIO drivers, MIDI drivers, the Wave Device Settings program, editing software, synthesizer sounds, and effects. All of these are included on the CD-ROM shipped with the OASYS PCI.

The instructions below assume that you have already optimized Windows for use with audio and MIDI programs. If you have not already done so, please see the OASYS PCI FAQ, along with the documentation for your audio and MIDI programs.

Installing the OASYS PCI drivers

To install the OASYS PCI drivers:

1. **If you have not done so already, install the OASYS PCI card (see "Installing the OASYS PCI card in your computer" on page 9, above).**
2. **Turn the computer on.**

Windows will automatically detect that a new card has been installed, and the Update Device Driver Wizard will appear.

3. **Insert the Korg OASYS PCI CD-ROM into your computer's CD-ROM drive.**
4. **Follow the on-screen instructions to finish the installation of the OASYS PCI drivers.**
5. **When asked to do so, specify that you have the disk provided by the manufacturer.**
6. **When asked to do so, specify the path to the CD-ROM (since the Korg CD-ROM contains the driver installation file, "oasyspci.inf," along with the driver files themselves).**

When the driver installation is complete, Windows will return you to the desktop.

Installing the OASYS PCI software

Next, you need to run the Korg OASYS PCI Software Setup, which will install the OASYS PCI software and add it to the Start menu.

1. **Insert the Korg OASYS PCI CD-ROM into your computer's CD-ROM drive.**

The OASYS PCI CD-ROM disk supports Windows Auto-Play mode, so the software installation application should start automatically. If it does not start automatically, run the program named "setup.exe" on the CD-ROM.

2. **Follow the on-screen instructions to finish the installation of the OASYS PCI software.**

The on-screen instructions will walk you through the rest of the installation.

Serial Port MIDI Setup (MacOS)

You can use the OASYS PCI as a stand-alone synthesizer or effects processor with a simple serial-port MIDI interface, without OMS or FreeMIDI. To do this:

1. **Open the OASYS PCI Editor program.**
2. **In the Edit menu, select "Preferences."**

The Preferences window will appear.

3. **Click on the MIDI/Global tab.**

The MIDI/Global preferences page will appear.

4. **Set the MIDI System parameter to Serial Port.**

The OASYS PCI will now use the standard serial port drivers for MIDI. Notice that the Serial Port parameters, named Serial Port and Interface Speed, are no longer grayed out.

5. **Set the Serial Port parameter to the port that you'd like to use.**

The OASYS PCI can use either the Modem or Printer ports for MIDI.

6. **Set the Interface Speed to match the speed of the hardware MIDI interface.**

Almost all MIDI interfaces use "1x," which is the default.

The OASYS PCI will now receive MIDI from the selected serial port.

NOTE: When the MIDI System is set to Serial Port, only 16 channels of MIDI (A1-A16) are available. Channels B1-B16 will not carry any data.

USB MIDI Interfaces (MacOS)

The direct serial port drivers only support "classic" MacOS serial ports. For use with a USB MIDI Interface, use OMS or FreeMIDI instead.

MIDI Setup (Windows)

OASYS PCI automatically appears to the Windows multimedia system as two 16-channel MIDI devices. You can select these MIDI devices within any MIDI program.

Using the OASYS PCI with Windows MIDI programs

When using the OASYS PCI with an OMS sequencer, we recommend that you enable MIDI patch-through in the sequencer, and disable direct MIDI input to the OASYS PCI. To do this:

1. **Open the OASYS PCI Editor program.**
2. **In the Edit menu, select "Preferences."**

The Preferences window will appear.

3. **Click on the MIDI/Global tab.**

The MIDI/Global preferences page will appear.

4. **Turn off the "Editor Responds to MIDI Controllers" checkbox.**

This is similar to the Local On/Off parameter found on some synthesizers. Turning it off means that the OASYS PCI will not directly receive MIDI from MIDI controllers. Instead, it will only respond to MIDI patched through from other programs, such as a MIDI sequencer.

This setting prevents various strange things from happening, including phasing, hung notes, and notes cutting off prematurely.

5. **In the MIDI program, enable MIDI patch through.**

This will patch the MIDI output of your controller through to the OASYS PCI. The name of the parameter may vary depending on the particular MIDI program being used. Depending on the program, you also may need to select a track assigned to the OASYS PCI, and/or record enable the track. Please consult the program's manual for details.

6. **Read the OASYS PCI FAQ for more information on specific MIDI programs.**

The HTML-format OASYS PCI FAQ has detailed, step-by-step instructions for setting up OASYS PCI with specific MIDI programs, such as Cubase, Logic, and Cakewalk.

Using the OASYS PCI Editor as a stand-alone MIDI program

When using the OASYS PCI Editor as a stand-alone synthesizer or effects processor, without any other MIDI program, you will need to enable direct MIDI input to the OASYS PCI. To do this:

1. **Open the OASYS PCI Editor program.**

2. In the Edit menu, select "Preferences."

The Preferences window will appear.

3. Click on the MIDI/Global tab.

The MIDI/Global preferences page will appear.

4. Turn on the "Editor Responds to MIDI Controllers" checkbox.

This is similar to the Local On/Off parameter found on some synthesizers. Turning it on means that the OASYS PCI will directly receive MIDI from MIDI controllers.

Configuring OMS (MacOS)

OMS allows the OASYS PCI's MIDI functions to be accessed directly from OMS-compatible MacOS software, including Cakewalk Metro, Cubase VST, Logic Audio, Vision DSP, and Studio Vision Pro.

The instructions below assume that you have already installed OMS on your computer.

Installing the OASYS PCI OMS Driver

OMS needs the OASYS PCI OMS Driver to communicate with the OASYS PCI. The installer will place a copy of the OASYS PCI OMS Driver in the OMS folder, within the System folder.

If this driver is removed from the OMS folder, OMS programs will not be able to see the OASYS PCI. In this case, use the OASYS PCI installer program to re-install the OASYS PCI OMS Driver.

Selecting OMS as the OASYS PCI MIDI system

To use the OASYS PCI with OMS software, you need to set the OASYS PCI to use OMS as its MIDI system. To do this:

1. **Open the OASYS PCI Editor program.**
2. **In the Edit menu, select "Preferences."**

The Preferences window will appear.

3. **Click on the MIDI/Global tab.**

The MIDI/Global preferences page will appear.

4. **Set the MIDI System parameter to OMS.**

The OASYS PCI will now use OMS as its MIDI system.

Adding the OASYS PCI to the OMS Studio Setup

Once the OASYS PCI OMS Driver is installed, OMS needs to be configured to add the OASYS PCI to the Studio Setup. To do this:

1. **Open the OMS Setup application.**

The current OMS Studio Setup document will be opened.

2. **In the Studio menu, select MIDI Cards & Interfaces.**

A dialog box will appear.

3. **Click the Update Setup button.**

The OMS Driver Search window will appear.

4. **De-select all of the serial ports.**

It isn't necessary to search the serial ports in this case, and de-selecting them will make the search faster.

5. Click the Search button.

OMS will automatically detect the OASYS PCI, and add two devices to the Studio Setup, named OASYS PCI A and OASYS PCI B. The OASYS PCI devices are not connected to any serial ports or MIDI interfaces, since they connect directly to OMS.

6. In the Edit menu, select OMS MIDI Setup.

The OMS MIDI Setup dialog will appear.

7. Enable the "Run MIDI in Background" checkbox.

This allows OMS MIDI programs to continue to play while you work in the OASYS PCI Editor. If Run MIDI in Background is not enabled, switching from an OMS MIDI sequencer to the OASYS PCI Editor will cause the sequencer to stop playing. This will also prevent the MIDI Program from sending any MIDI data (including MIDI from your controller keyboard) to the OASYS PCI.

8. Save the edited OMS setup.

The OASYS PCI will now appear in your OMS programs as two devices, OASYS PCIA and OASYS PCIB, for a total of 32 MIDI channels.

Using the OASYS PCI with an OMS sequencer

When using the OASYS PCI with an OMS sequencer, we recommend enabling MIDI patch-through in the sequencer, and disabling direct MIDI input to the OASYS PCI. To do this:

1. Open the OASYS PCI Editor program.

2. In the Edit menu, select "Preferences."

The Preferences window will appear.

3. Click on the MIDI/Global tab.

The MIDI/Global preferences page will appear.

4. Turn off the "Editor Responds to OMS/FreeMIDI Controllers" checkbox.

This is similar to the Local On/Off parameter found on some synthesizers. Turning it off means that the OASYS PCI will not directly receive MIDI from MIDI controllers. Instead, it will only respond to MIDI patched through from other OMS programs, such as an OMS sequencer.

This setting prevents various strange things from happening, including phasing, hung notes, and notes cutting off prematurely.

5. In the OMS sequencer, enable MIDI patch through.

This will patch the MIDI output of your controller through to the OASYS PCI. The name of the parameter may vary depending on the particular OMS program being used. Depending on the program, you also may need to select a track assigned to

the OASYS PCI, and/or record enable the track. Please consult the program's manual for details.

6. **Read the OASYS PCI FAQ for more information on specific MIDI programs.**

The HTML-format OASYS PCI FAQ has detailed, step-by-step instructions for setting up OASYS PCI with specific OMS programs, such as Vision, Cubase, and Logic.

Using the OASYS PCI Editor as a stand-alone OMS program

When using the OASYS PCI Editor as a stand-alone synthesizer or effects processor, without any other OMS program, you will need to enable direct MIDI input to the OASYS PCI. To do this:

1. **Open the OASYS PCI Editor program.**
2. **In the Edit menu, select "Preferences."**

The Preferences window will appear.

3. **Click on the MIDI/Global tab.**

The MIDI/Global preferences page will appear.

4. **Turn on the "Editor Responds to OMS/FreeMIDI Controllers" checkbox.**

This is similar to the Local On/Off parameter found on some synthesizers. Turning it on means that the OASYS PCI will directly receive MIDI from MIDI controllers.

Configuring FreeMIDI (MacOS)

FreeMIDI allows the OASYS PCI's MIDI functions to be accessed directly from FreeMIDI-compatible MacOS software, including Performer and Digital Performer.

The instructions below assume that you have already installed FreeMIDI on your computer.

Installing the OASYS PCI FreeMIDI Driver

FreeMIDI needs the OASYS PCI FreeMIDI Driver to communicate with the OASYS PCI. The installer will place a copy of the OASYS PCI FreeMIDI Driver in the FreeMIDI folder, within the System folder.

If this driver is removed from the FreeMIDI folder, FreeMIDI programs will not be able to see the OASYS PCI. In this case, use the OASYS PCI installer program to re-install the OASYS PCI FreeMIDI Driver.

Selecting FreeMIDI as the OASYS PCI MIDI system

For use with FreeMIDI software, you need to set the OASYS PCI's MIDI system to FreeMIDI. To do this:

1. **Open the OASYS PCI Editor program.**
2. **In the Edit menu, select "Preferences."**

The Preferences window will appear.

3. **Click on the MIDI/Global tab.**

The MIDI/Global preferences page will appear.

4. **Set the MIDI System parameter to FreeMIDI.**

The OASYS PCI will now use FreeMIDI as its MIDI system.

Adding the OASYS PCI to the FreeMIDI setup

Once the OASYS PCI FreeMIDI Driver is installed, FreeMIDI needs to be configured to add the OASYS PCI to the FreeMIDI setup. To do this:

1. **Open the FreeMIDI Setup application.**

The current FreeMIDI Setup document will be opened.

2. **In the File menu, select FreeMIDI Preferences.**

The FreeMIDI Preferences dialog box will appear.

3. **Under Software Compatibility, select FreeMIDI Applications Only.**

This allows you to use the OASYS PCI Editor program while the FreeMIDI program plays in the background.

4. **Under MIDI Configuration, enable Applications: Inter-application MIDI.**

This allows the OASYS PCI Editor's knobs to respond to MIDI SysEx parameter changes. If Inter-application MIDI is disabled, parameter changes will still affect the sound, but the knobs will not move to reflect the changes.

5. **Under MIDI Configuration, make sure that both OASYS PCI A and OASYS PCI B are checked.**

This enables the OASYS PCI FreeMIDI driver. Two new devices, OASYS PCI A and OASYS PCI B, will appear in the FreeMIDI Setup document.

6. **Save the edited FreeMIDI setup.**

The OASYS PCI will now appear in your FreeMIDI programs as two devices, OASYS PCI A and OASYS PCI B, for a total of 32 MIDI channels.

Using the OASYS PCI with Performer and Digital Performer

When using the OASYS PCI with a FreeMIDI sequencer, such as Performer and Digital Performer, we recommend enabling MIDI patch-through in the sequencer, and disabling direct MIDI input to the OASYS PCI. To do this:

1. **Open the OASYS PCI Editor program.**
2. **In the Edit menu, select "Preferences."**

The Preferences window will appear.

3. **Click on the MIDI/Global tab.**

The MIDI/Global preferences page will appear.

4. **Turn off the "Editor Responds to OMS/FreeMIDI Controllers" checkbox.**

This is similar to the Local On/Off parameter found on some synthesizers. Turning it off means that the OASYS PCI will not directly receive MIDI from MIDI controllers. Instead, it will only respond to MIDI patched through from other FreeMIDI programs, such as Performer or Digital Performer.

This setting prevents various strange things from happening, including phasing, hung notes, and notes cutting off prematurely.

5. **In Performer or Digital Performer, select Patch Thru from the Basics menu.**

The Patch Thru dialog box will appear.

6. **Select the "Auto-channelize" option.**

With this setting, Performer and Digital Performer will automatically patch MIDI through to record-enabled tracks.

7. **Still in the Patch Thru dialog box, enable Patch Thru In Background.**

This setting means that even when Performer or Digital Performer is in the background, it will still send the output of your MIDI controller to the OASYS PCI.

8. **Read the OASYS PCI FAQ for more information on use with Digital Performer.**

The HTML-format OASYS PCI FAQ has detailed, step-by-step instructions for setting up OASYS PCI with Digital Performer.

Using the OASYS PCI Editor as a stand-alone FreeMIDI program

When using the OASYS PCI Editor as a stand-alone synthesizer or effects processor, without any other FreeMIDI program, you will need to enable direct MIDI input to the OASYS PCI. To do this:

1. **Open the OASYS PCI Editor program.**
2. **In the Edit menu, select "Preferences."**

The Preferences window will appear.

3. **Click on the MIDI/Global tab.**

The MIDI/Global preferences page will appear.

4. **Turn on the "Editor Responds to OMS/FreeMIDI Controllers" checkbox.**

This is similar to the Local On/Off parameter found on some synthesizers. Turning it on means that the OASYS PCI will directly receive MIDI from MIDI controllers.

Configuring ASIO Software

The OASYS PCI includes ASIO drivers, for direct compatibility with MacOS and Windows digital audio programs such as Cakewalk Metro, Cool Edit Pro, Cubase VST, Deck, Digital Performer, Logic Audio, Peak, TC Spark, and more.

Installing the OASYS PCI ASIO driver

ASIO 1.0 vs. ASIO 2.0

ASIO drivers currently come in two flavors: ASIO 1.0 and ASIO 2.0. ASIO 1.0 is the initial version of the driver standard, and ASIO 2.0 adds new features such as support for sample-accurate timecode and control of hardware-based monitoring. OASYS PCI includes drivers for both ASIO 1.0 and ASIO 2.0.

Many programs work well with either version of ASIO, but some programs may only work with ASIO 1.0 drivers - and they may even crash when an ASIO 2.0 driver is selected.

If you are installing an ASIO driver for a particular program, find out what version of ASIO is appropriate for that program. If in doubt, use the OASYS PCI ASIO 1.0 driver.

The ASIO 1.0 driver may not be included on your OASYS PCI CD-ROM. If not, you can download it from the OASYS PCI website, at http://www.korg.com/oasyspci_software.htm.

MacOS

MacOS digital audio programs require that ASIO drivers be placed in a particular folder. Usually, this folder is named "ASIO Drivers," and is located in the same folder as the program itself. Please consult your program's manual for more details.

The installer will place an OASYS PCI ASIO 2.0 driver into each folder named "ASIO Drivers." If an ASIO-compatible program does not recognize the OASYS PCI, make sure that the correct version of the OASYS PCI ASIO driver is in the appropriate folder.

If the driver isn't there, install it using the Custom Install option of the OASYS PCI Installer, on the OASYS PCI CD-ROM. Or, if you have a copy of the ASIO driver on your hard disk already, you can add it manually simply by dragging a copy of the driver into the folder.

You will also need to manually add an OASYS PCI ASIO driver if you install new ASIO-compatible software *after* installing the OASYS PCI software.

Windows

The OASYS PCI Windows installer will register OASYS PCI as an ASIO device via REGSVR32.INI. This will allow ASIO-compatible programs, such as Cubase VST and Cool Edit Pro, to recognize OASYS PCI via ASIO.

Selecting the OASYS PCI as the ASIO device

After the OASYS PCI ASIO Driver is installed in the correct folder, you need to tell the digital audio program to use the OASYS PCI as the ASIO Device. Different programs will do this in different ways; consult the program's manual for details.

Read the FAQ for more information on specific ASIO programs

The HTML-format OASYS PCI FAQ has detailed, step-by-step instructions for setting up OASYS PCI with a number of ASIO programs, such as Cubase VST, Logic Audio, Digital Performer, and Vision.

Setting the sample rate and word clock source

Whenever an ASIO-compatible audio program is running, be sure to set the sample rate and word clock source from within the audio program, as opposed to using the OASYS PCI Editor preferences settings. Otherwise, the audio program may not know that the sample rate or clock source has changed.

The OASYS PCI Editor's settings will reflect the clock and sample rate settings made within the digital audio program.

For more information on setting the sample rate and word clock source, please see "A few words on word clock" on page 38. Also see the Users Guide, under "ASIO Control Panel/Audio Settings" and "Using Audio Programs."

More information on using ASIO

For more information on ASIO and the OASYS PCI, please see the Users Guide, under "ASIO Control Panel/Audio Settings" and "Using Audio Programs."

Configuring Sound Manager (MacOS)

The Apple Sound Manager controls the basic sound input and output for the computer as a whole, including system alert beeps, speech input and output, game sounds, and so on. The Sound Manager also allows add-on hardware, such as the OASYS PCI, to be used in place of the computer's built-in sound input and output.

When you are using the OASYS PCI through the Sound Manager, only two channels are available for input and output; you can choose any stereo pair that you like (analog, S/PDIF, or ADAT 1-2, 3-4, 5-6, and 7-8). You can even use one pair of channels for input, and another for output.

Sound Manager setup

Apple's Sound control panel is included in the OASYS PCI software installation. It is also included in the "Apple Extras" folder This control panel is not automatically installed with the MacOS system software, but it works much better with third-party audio hardware than do the other sound-oriented control panels (including Monitors & Sound).

For this reason, only the Sound control panel is recommended for configuring the OASYS PCI and Sound Manager.

You can continue to use the Monitors & Sound control panel for any purpose other than configuring the OASYS PCI for use with Sound Manager.

To set up the Sound Manager to use the OASYS PCI:

1. **Open the Sound control panel.**
2. **Select "Sound In" from the Sound control panel's menu.**

The Sound In page appears, with the on-screen instruction, "Choose a source for recording."

3. **Select the OASYS PCI icon.**

It will become hilighted. The OASYS PCI will now be used for input to Sound Manager-compatible programs.

4. **Select "Sound Out" from the menu.**

The Sound Out page appears, with the on-screen instruction, "Choose a device for playback."

5. **Select the OASYS PCI icon.**

It will become hilighted. The OASYS PCI will now be used for output from Sound Manager-compatible programs.

The Sound control panel also includes an output volume setting.

6. **Select "Volumes" from the menu.**
7. **Set the OASYS PCI's output volume to the maximum value.**

With the OASYS PCI selected in the Sound control panel, the computer will now use the OASYS PCI for all sound input and output, including alert sounds (the alert sound is the "beep," or other sound, which plays when software displays a warning message). To keep extraneous MacOS beeps and chirps out of your digital audio system, you may wish to turn the alert volume off entirely.

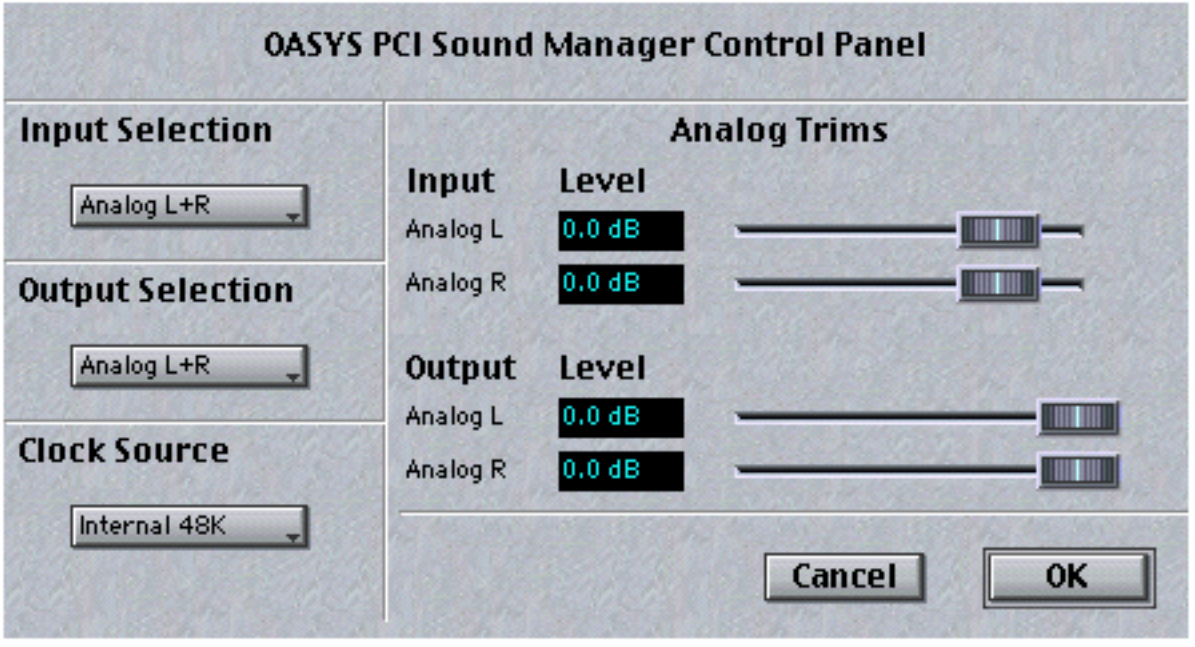
8. **Optional: select "Alert Sounds" from the menu, and turn the Alert Sound volume all the way down.**

The Sound Manager supports only two inputs and two outputs. Using the OASYS PCI Sound Manager control panel, you can set the inputs and outputs to use any two of the OASYS PCI's channels.

9. **Select "Sound In" again, from the Sound control panel's menu.**
10. **Press the Options button.**

The OASYS PCI Sound Manager control panel will appear.

Sound Manager Control Panel



11. **Select the desired OASYS PCI channels in the Input Selection and Output Selection menus.**

You can also change these as necessary, whenever you like.

12. **Set the Clock Source/Sample Rate and Analog Input and Output Trims as desired.**

For more information on these parameters, please see "Word clock and sample rate settings" on page 33.

That's it! You're now ready to use the OASYS PCI with Sound Manager programs.

Configuring MME (Windows)

The OASYS PCI is designed for seamless use with all MME-compatible digital audio programs, such as Cakewalk Pro Audio, Logic Audio, Cubase VST, SAW, Cool Edit Pro, Sound Forge, Acid, etc.

OASYS PCI also supports ASIO, for use with ASIO-compatible programs including Cubase VST and Cool Edit Pro. For more information on setting up ASIO, please see "Configuring ASIO Software," on page 26.

Using the OASYS PCI as multiple wave devices

Through the OASYS PCI's standard wave device driver, you can use the card with any standard Windows digital audio program. The OASYS PCI appears as six full-duplex stereo devices, one for each input/output pair, as well as four stereo output-only devices, for the eight Streams.

Programs which support the use of multiple audio devices have simultaneous access to all 12 inputs and 20 outputs, up to the limits of the program itself.

The OASYS PCI Wave Device Settings program controls the card's sample rate, word clock source, and play/record synchronization. Optionally, it also lets you set volume and balance for each output device. From this program, you can also call up the Audio Settings, Hardware Meters, and Diagnostics windows.

To set up the OASYS PCI for use with MME audio programs:

1. **Open the OASYS PCI Wave Device Settings program.**
2. **Select the desired sample rate and word clock source.**
3. **Make sure that the Auto Sync button is on.**

This will ensure that all of the input and output pairs are synchronized. In some special cases, you may wish to disable Auto Sync; for more information, see the section "Wave Device Settings (Windows)" in the Users Guide.

4. **Press the Audio Settings button.**

The OASYS PCI Audio Settings window will appear.

5. **Set up input-to-output monitoring as desired, using the channel routing and volume controls.**

For more information, see the section "ASIO Control Panel/Audio Settings" in the Users Guide.

6. **Optional: to use the OASYS PCI as the default input and/or output wave device, use the Multimedia Properties control panel.**

For more information, see "Setting the default playback or recording device," on page 32.

English

Wave device numbering

When selecting OASYS PCI inputs and outputs in digital audio software, each stereo pair is identified by name, PCI bus, and PCI device number - such as ADAT 3-4, Bus 0, Device 11.

However, the Windows multimedia system keeps track of each audio device simply by a number, generated by the order in which they were initialized. It is this number that is stored in a digital audio program's input and output assignments.

You can check the device order by looking at the audio "preferred device" menus in the Multimedia Properties control panel. In these menus, the devices are shown in order (although no actual numbers are displayed).

If you install or remove other soundcards, this may change the device numbers assigned to the OASYS PCI. This, in turn, can change the track output assignments of previously recorded files. If so, you'll need to re-select the desired outputs, and save the updated file.

As mentioned previously, the OASYS PCI appears to the Windows multimedia system as ten stereo audio devices–one for each stereo pair. The devices appear in the following order: Analog L/R, S/PDIF L/R, ADAT 1-8, and Stream 1-8.

Setting the default playback or recording device

Some programs will automatically use only the default recording and playback devices, as set in the Multimedia Properties control panel. To select the OASYS PCI as the default device:

1. **Open the Multimedia Properties control panel.**
2. **Select the desired OASYS PCI channels as the preferred device under both Playback and Recording.**
3. **Set the Preferred Quality to CD Quality.**

This will set the audio device to stereo, 16 bit, 44.1kHz sample rate. You can use the Customize button to select other sample rates and bit depths, if desired; the 44.1, 22.05, and 11.025kHz sample rates are valid for the OASYS PCI.

Note also that the volume controls in the Multimedia Properties control panel are disabled when the OASYS PCI is selected. The OASYS PCI's output volumes may be adjusted using the OASYS PCI Wave Device Settings program, if desired.

System Configurations

This chapter is intended to provide a quick guide for integrating the OASYS PCI into a variety of different setups. By its nature, the instructions here are brief; for additional detail, please consult the manuals of the other digital audio hardware and software being used.

Be sure to consult the OASYS PCI FAQ for information on specific audio/MIDI programs, as well as any late-breaking information.

Word clock and sample rate settings

With digital audio cards, the great majority of technical support questions are the result of incorrect word clock settings. Incorrect word clock settings may cause subtle degradation of audio, louder pops and clicks, altered pitch and playback speeds, and/or timecode problems.

Keeping track of the word clock source may seem confusing at first, but it's really pretty simple. Just remember that, as with SMPTE synchronization setups, there must be one and only one word clock master, with all other devices set to slave to the master device. This means that you need to keep track of the word clock settings on all of your digital audio devices–not just on the OASYS PCI.

For more background information, see "A few words on word clock," on page 38.

Sample rate setting must match external clock source

When you record or play back audio data using external clock sources (such as the S/PDIF, ADAT, or Word Clock inputs), the sample rate is controlled entirely by the external source, and not by the digital audio program's sample rate parameter. Because of this, you must make sure that the external clock source is actually set to the same sample rate as the digital audio program. If the two are different, it can result in audio playing back faster or slower than expected.

Setting the word clock source in the OASYS PCI Editor

You can set the OASYS PCI's sample rate and word clock source from within the OASYS PCI Editor. To do so:

1. **In the OASYS PCI Editor, select Preferences… from the Edit menu.**

The Preferences window will appear.

2. **Click on the MIDI/Global tab.**

The MIDI/Global page will appear.

The Sample Rate and Clock Source parameters are in the Global Settings section, in the lower right-hand corner of the window.

3. **Set the Sample Rate and Clock Source as desired.**

NOTE: This is only recommended when using the OASYS PCI as a stand-alone synthesizer and/or effects processor. When using OASYS PCI in conjunction with digital audio software, we recommend setting these parameters from within the audio software instead, as described below.

Setting the word clock source in digital audio software

When using the OASYS PCI with ASIO-compatible digital audio programs (or other programs which directly support the OASYS PCI), you should set the sample rate and clock source within the audio program. This will ensure that the audio program and the OASYS PCI agree on the current settings.

The OASYS PCI Editor's settings will reflect the clock and sample rate settings made within the digital audio program.

For information on setting the clock source within a specific digital audio program, please refer to the program's manual.

Using only the OASYS PCI's analog input and output

You can use the OASYS PCI via only the analog inputs and outputs, if you like, without any digital connections. In this case, you should generally set the OASYS PCI's word clock source to Internal.

Using the OASYS PCI with ADAT-compatible digital mixers

You can connect the OASYS PCI to an ADAT-compatible digital mixer in various ways, depending on your other equipment and your personal preference.

Mixer as word clock master

The simplest way is to use the mixer as the word clock master. In this case:

1. **Connect the OASYS PCI's ADAT optical input and output to the mixer.**
2. **Make sure that the mixer is set to use its internal clock.**
3. **Set the OASYS PCI's word clock source to ADAT.**

OASYS PCI as word clock master

In some cases, you may wish to use the OASYS PCI as the master clock. In this case:

1. **Connect the OASYS PCI's ADAT optical input and output to the mixer.**
2. **Set the OASYS PCI's word clock source to Internal.**
3. **Set the mixer to use the OASYS PCI's ADAT output as the master clock.**

External word clock generator as master

You may also wish to use a stand-alone word clock generator or SMPTE-to-digital audio converter as the master. In this case:

1. **Connect the word clock generator's output to the word clock input of both the mixer and the OASYS PCI.**
2. **Set the word clock source of both devices to Word Clock.**

Using the OASYS PCI with ADAT-compatible A/D and D/A converters

You can connect the OASYS PCI to ADAT-compatible A/D and D/A converters in various ways, depending on your other equipment and your personal preference.

OASYS PCI as word clock master

With a combined A/D and D/A converter, it will generally be easiest to use the OASYS PCI as the word clock master. In this case:

1. **Connect both the OASYS PCI's ADAT input and output to the converter.**
2. **Set the OASYS PCI's word clock source to Internal.**
3. **Set the converter to use the ADAT input as the clock source.**

Converter as word clock master

You may also use the converter as the clock source. In this case:

1. **Connect both the OASYS PCI's ADAT input and output to the converter.**
2. **Set the converter to use its internal clock.**
3. **Set the OASYS PCI's word clock source to ADAT.**

External word clock generator as master

You may also wish to use a stand-alone word clock generator or SMPTE-to-digital audio converter as the master. In this case:

1. **Connect the word clock generator's output to the word clock input of both the converter and the OASYS PCI.**
2. **Set the word clock source of both devices to Word Clock.**

Using the OASYS PCI with ADAT-compatible tape machines

The OASYS PCI will work equally well in a system with only one ADAT-compatible tape machine (from now on, we'll just call that an "ADAT" for short), or in a more complex system with multiple ADATs and a remote controller, such as the Alesis BRC.

To connect the OASYS PCI to an ADAT system:

1. **Connect the ADATs together as usual, with the sync and optical outputs from ADAT #1 going into ADAT #2, from ADAT #2 to ADAT #3, and so on.**
2. **Connect the sync output from the last ADAT to the OASYS PCI's ADAT Timecode Input.**
3. **Connect the optical outputs from the last ADAT to the optical inputs of the OASYS PCI.**

4. **Connect the optical output of the OASYS PCI to the optical input of ADAT #1.**
5. **If using an Alesis BRC, connect the BRC's sync output to ADAT #1's sync input, and then connect the Word Clock output of the OASYS PCI to the 48kHz Input of the BRC.**

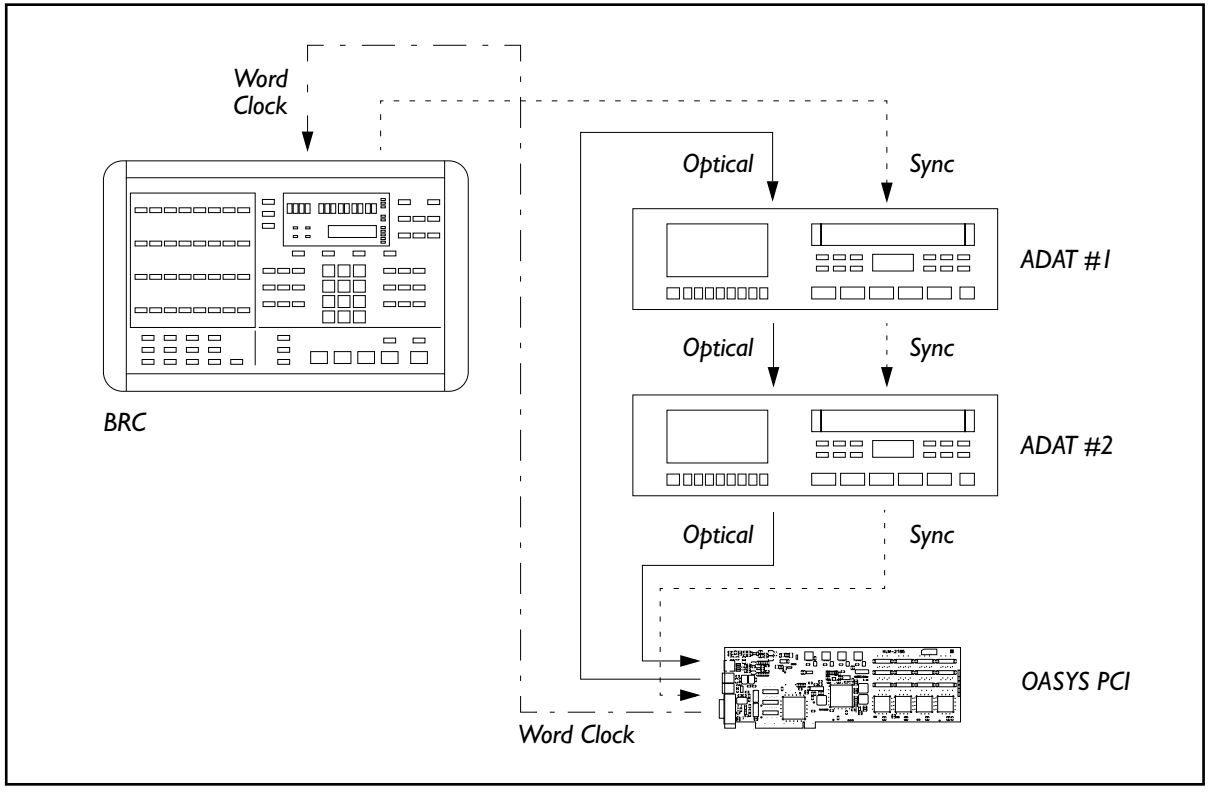
This connection is necessary when recording from the OASYS PCI's S/PDIF input.

6. **For general use, set the OASYS PCI's word clock source to ADAT, and the ADAT system's word clock source to Internal.**

For details on setting the word clock source for a particular ADAT model, see the ADAT's manual, or the OASYS PCI FAQ.

Below is a nifty little diagram, showing the OASYS PCI hooked up in a simple system with two ADATs and a BRC. If you have more ADATs than shown here (lucky you!), just pretend that this diagram's ADAT #2 is the last one in your chain.

The OASYS PCI with 2 ADATs and a BRC



Using the OASYS PCI with S/PDIF devices (DAT, effects, etc.)

There are two broad classifications of S/PDIF devices: those which can use an external clock to control their digital output, and those which cannot. These two types require different settings on the OASYS PCI.

Devices which do not accept external word clock

Many S/PDIF devices don't have a separate setting for the word clock source. For instance, many DAT machines automatically use incoming digital audio data as the word clock source when recording, and automatically use the internal clock source when playing back. Some stand-alone A/D converters also may not accept an external word clock input.

When recording from such devices, all the other devices must slave to the S/PDIF device's clock.

1. **Connect the digital audio cables between the S/PDIF input and output of the OASYS PCI and the S/PDIF device.**
2. **When recording from the S/PDIF device into a digital audio program, set the OASYS PCI's word clock source to S/PDIF.**
3. **When playing back into the S/PDIF device from a digital audio program, set the OASYS PCI's word clock source to Internal (or ADAT, if you generally use an ADAT system as the master clock source).**

Devices which accept external word clock

Some S/PDIF devices, on the other hand, may allow you to freely select between internal and external word clock. Some may use a dedicated word clock input; others may use the clock signal received at their S/PDIF input.

When using the OASYS PCI with these devices, you don't need to change word clock settings between recording and playback. Instead:

1. **Connect the digital audio cables between the S/PDIF input and output of the OASYS PCI and the S/PDIF device.**
2. **If the S/PDIF device has a dedicated word clock input, connect the word clock output of the OASYS PCI to the word clock input of the S/PDIF device.**
3. **Set the S/PDIF device to use the external clock source.**
4. **In the digital audio program, set the OASYS PCI's word clock source to Internal or ADAT, as desired.**

You can also use a dedicated word clock source as the master for the OASYS PCI. In this case, connect the word clock output of the master device to the word clock input of the OASYS PCI, and set the OASYS PCI's word clock source to Word Clock.

A few words on word clock

Whenever two or more audio devices are connected together digitally, they are sending and receiving thousands of individual bits of data every second.The bits are sent out continuously, one after another, at a very steady pace. This is similar to two jugglers passing balls between each other, while at the same time keeping up their own steady juggling patterns.

When one device sends out a bit of data (like the ball being thrown to the other juggler), the other needs to be ready to receive it. If the data is being sent even just slightly faster than it can be received, bits will be lost, causing errors in the audio (like the ball being dropped).

Similarly, if the data is being sent even slightly slower than the receiver expects it to be, then the receiver will occasionally be left without real data at its input (like a juggler grabbing at the air). In digital audio, these errors show up as loud pops and clicks, as well as lower-level noise.

The rate at which those bits are sent and received is controlled by the word clock, which "ticks" for every bit of data. Each device has its own word clock, so that it can work on its own–such as a single ADAT, or a single OASYS PCI.

When you send digital audio data between two or more devices, however, their word clocks need to be synchronized together, so that devices send and receive each bit at the exact same moment. One of the devices–usually the sender–will provide the master clock; the others must be set to ignore their internal clocks, and instead slave to the master clock.

This clock signal is normally carried along with the digital audio data, so that when connecting two devices together in a simple configuration–such as connecting OASYS PCI to a digital mixer, or dubbing between two DAT machines–you don't need to make any other connections. You will, however, need to make sure that only one device is providing the master clock, and that all the other devices are set so that they slave their clocks to the master (or to another slave device).

Sometimes, it may also necessary to send the word clock separately from the digital audio data. For instance, you may be using a dedicated word clock generator, or a SMPTE-digital audio synchronizer. In this case, as before, you need to make sure that all devices are set to slave to the master clock.

It is best to set up a studio to use a single clock, and to stay with that clock at all times (or as much as possible). This will help to ensure that all timing and pitch remains the same.

Getting Started

Instant Gratification

Loading and playing Multis

Now that you've installed the OASYS PCI hardware and software, let's play some sounds!

1. **Make sure that the analog outputs of the OASYS PCI are connected to your mixer or sound system, and that your MIDI controller (keyboard, guitar, etc.) is connected to your computer, and is set to transmit on MIDI channel 1.**

The Korg preset Multis respond to MIDI channel 1, and play from the card's analog outputs.

If you are using OASYS PCI with Windows, skip to step 3.

If you are using OASYS PCI with MacOS, follow step 2:

2. **If you have set up the OASYS PCI to use OMS, follow the instructions under "Using the OASYS PCI Editor as a stand-alone OMS program" on page 22. After this, go on to step 3.**
   or
   If you have set up the OASYS PCI to use FreeMIDI, follow the instructions under "Using the OASYS PCI Editor as a stand-alone FreeMIDI program" on page 25. After this, go on to step 3.
   or
   If you have set up the OASYS PCI to use the standard serial MIDI interface, go on to step 3.

The installer program will have opened two folders on the desktop. One of these is named "OASYS PCI Demo Multis." This folder contains a number of demo sounds, which show off different aspects of the OASYS PCI.

3. **Open one of the demo Multis, by double-clicking its icon on the desktop.**

The OASYS PCI Editor will open, and the selected Multi will appear. Multis are complete setups for the OASYS PCI, including all of the settings for the onboard digital mixer, along with all settings for synthesizer sounds and effects.

4. **Play on your MIDI controller.**

Enjoy!

When you'd like to hear another sound:

5. **If you've opened any other windows, make sure that the main Mixer window is in the foreground.**
6. **Select Close from the File menu.**

The window will close. Since you closed the main Mixer window, the Multi will close as well. If you've changed anything, a message will appear asking if you'd

like to save your changes; press the Don't Save button (MacOS) or the No button (Windows).

7. **In the desktop, double-click on the icon of another Multi.**
   or
   Select Open… from the File Menu, and select a new Multi.

As the shampoo bottles say, "repeat as desired."

After you're done listening to a few sounds, make sure to read at least the chapter "Using the OASYS PCI" in the Users Guide. There's a lot to the OASYS PCI, and we wouldn't want to you miss anything!

Specifically, for more information on loading sounds, see the "Using Multis" section in the Users Guide. For information on loading effects, see "Using Effects" in the Users Guide.

What are...?

File Types

The OASYS PCI use a number of different file types to organize and store sounds. Each of these types is briefly described below.

Multis

A Multi is a single, complete setup for the OASYS PCI. It includes all of the settings for the Mixer windows, and for the Programs, Patches, and Effects being used. The Multi also includes settings for all Program Edit windows, and all Control Panel parameters for the Patches and Effects.

To put it another way, Multis store all of the settings in the Mixer, Send Busses, Output Busses, Channel Parameters, Program Edit, and Control Panel windows-everything except for the Preferences and ASIO Control Panel windows.

For more information, see the "Using Multis" section in the Users Guide.

Programs

Programs are the basic sounds of the OASYS PCI, and must be placed on a Mixer Channel to be played. They play one or two Patches, which can be layered or split by key and velocity ranges. They also have up to four Insert Effects, which appear in the Mixer Channel. Programs store all Control Panel settings for their Patches and Effects.

For more information, see the "Using Programs & Patches" section in the Users Guide.

Effects-Only Programs

Effects-Only Programs store all of the Insert Effects for a Mixer Channel, including all Effects Control Panel parameters. You can use them to load chains of Effects into a Mixer Channel, or to store such chains for use elsewhere.

Effects-Only Programs are just normal Programs without any Patches loaded into the Patch slots. Unlike normal Programs, Effects-Only Programs can be used on any type of input, including Audio Inputs, Streams, or even other Programs.

In the Korg factory voicing, they will be placed in the Programs section of the folder named "Korg FX Programs."

For more information, see the "Using Effects" section in the Users Guide.

Patches

Patches are the basic units of sound creation on the OASYS PCI. They must be placed in a Program in order to be played. Each Patch contains its own synthesis algorithm, which may be quite different from one Patch to another. The Patch

Control Panel allows you to edit the parameters of a Patch; those parameters may be very different, depending on the Patch's synthesis algorithm.

For more information, see the "Using Programs & Patches" section in the Users Guide.

Effects

Effects are used to modify the sound of Patches, Audio Inputs, or Streams. They can be used as insert effects in the Mixer Channels and Output Busses, or as send effects via the Send Busses.

Each Effect contains its own audio processing algorithm, which may be quite different from one Effect to another. The Patch Control Panel allows you to edit the parameters of an Effect; those parameters may be very different, depending on the Effect's synthesis algorithm.

For more information, see the "Using Effects" section in the Users Guide.

Samples

A Sample is an audio file, which can be placed in a Multisample (see below) and then played back by sample-based OASYS PCI Patches. OASYS PCI recognizes 16-bit and 24-bit samples in a number of different formats, including AIFF, WAV, Sound Designer II, and Korg's proprietary .kes format.

For more information, see the "Using Samples & Multisamples" section in the Users Guide.

Multisamples

Multisamples are collections of one or more Samples assigned to ranges across the keyboard. Each key range has offsets for common parameters, such as volume, pan, filter cutoff, decay, and so on, which can be used to adjust Patch parameters individually for each Sample.

For more information, see "Using Samples & Multisamples" section in the Users Guide.

OASYS PCI Editor

The OASYS PCI Editor program allows you to control all of the sound production and audio processing aspects of the OASYS PCI, including all mixer settings, loading of Programs and Effects, and all Program, Patch, and Effects parameters.

If you are using the OASYS PCI in conjunction with a digital audio program, you should leave the OASYS PCI Editor running in the background, so that you can switch to it for editing Programs and Effects.

OASYS PCI Engine

The OASYS PCI Engine controls the low-level functions of the OASYS PCI system, such as sending and receiving MIDI, playing sounds, and so on. It will automatically start up whenever the OASYS PCI is being used, and will

automatically quit again when it is not. On MacOS systems, it's located in the System Extensions folder; on Windows systems, it's located in the windows/system directory.

You don't interact directly with the OASYS PCI Engine itself; instead, you control it via the OASYS PCI Editor and any audio and/or MIDI software being used.

User Interface & Shortcuts

Wherever possible, the OASYS PCI supports standard user interface concepts. There are buttons to push, sliders to drag, numerical fields to type in, and so on. There are a few items and concepts which bear mentioning, as discussed below.

Volume faders

Double-clicking on a volume fader in a Mixer Channel, Send Bus, or Output Bus will set the fader to 0dB (unity gain), a value of 111.

Knobs

Knobs are used in the Mixer windows and the Control Panel. You can move knobs by dragging the mouse either up and down, or left and right, as if you were moving a slider. They are *not* designed to be "turned" in a circular motion; doing so will produce undesired results!

For fine control, you can increment and decrement the knob's value using the up and down arrows on the keyboard. You can also type directly into the value box.

Double-clicking on a knob will set it to its 12 o'clock position. For example, double-clicking on the Mixer's Pan knobs sets them to 64 (center).

Send knobs are the one exception to this. As with volume faders, double-clicking a send knob sets it to 0dB (unity gain), a value of 111.

Value boxes

A value box displays a numerical value, such as a volume level or a filter cutoff. You can edit value boxes in several different ways, as described below:

Typing. You can type directly into the selected value box. Typed edits take effect when you press return, tab, or enter; when you click on another value box, or on another window; or when you move another knob, slider, button, or menu.

Arrow keys. You can increment and decrement the selected value box by pressing the up and down arrow keys on the computer keyboard.

Mouse dragging. You can edit a value box by simply clicking in the box and then dragging the mouse up or down, as you were moving a slider. Dragging up increments the value, and dragging down decrements the value.

Drag-and-drop

To load Programs, Patches, or Effects, just drag them from the Catalog window into the desired slot.

Alternately, you can select a slot, and then double-click on the name of the Program, Patch, or Effect in the Catalog window.

You can also use drag-and-drop to copy Programs, Patches, and Effects between slots. Just click on the name of the Program, Patch, or Effect that you'd like to copy, and drag it to the new location.

Delete key

Pressing the Delete key will remove the currently selected Program, Patch, or Effect from the current Multi or Program.

Bypassing Effects

To bypass a single Effect, click on the slot number to the left of the Effect name.

To bypass all Effects in a Channel, Send, or Output Bus, option-click (MacOS) or CTRL-click (Windows) on any of the Effects slot numbers.

Clearing clip indicators

To clear a meter's clip indicators, click on them. To clear *all* clip indicators on the Mixer, option-click (MacOS) or CTRL-click (Windows) on any clip indicator.

Appendix

Troubleshooting & Tech Support

For troubleshooting tips, look in the OASYS PCI FAQ

FAQ stands for "Frequently Asked Questions." The OASYS PCI FAQ, which is automatically installed with the OASYS PCI software, contains a complete website devoted to troubleshooting, compatibility, and usage tips.

The FAQ is in HTML format, so that it can be read by any standard web browser, such as Netscape Navigator or Internet Explorer. To search through the FAQ, start by opening the document named "OASYS PCI_faq_index.htm."

In addition to the FAQ installed with the OASYS PCI software, the latest version can always be found at the Korg website, at http://www.korg.com.

That's nice, but I can't start my computer

We sincerely hope that the OASYS PCI will never interfere with your computer starting up. If you think this is the case, however, you can try the following:

1. **Start up with extensions disabled (MacOS only).**

Start with extensions disabled by turning on the computer's power and then immediately holding down the Shift key. Keep holding the Shift key throughout the startup process, until the Finder desktop appears.

Once the computer is started properly, you can remove the OASYS PCI extensions from the System folder if necessary (or better, disable them using the Extensions Manager control panel).

You can then restart with the extensions required for the web browser, and look through the OASYS PCI FAQ for a solution.

2. **Make sure that the OASYS PCI card is firmly seated in the PCI slot.**

If the card is not seated properly, this can interfere with the computer in unpredictable ways.

3. **If all else fails, physically remove the card from the computer.**

This will at least eliminate the possibility that the OASYS PCI is the root of the problem.

For technical support, contact your Korg Distributor

Your national Korg Distributor will be pleased to provide technical support for the OASYS PCI. There are Korg Distributors in almost every nation on earth. A sheet of paper labeled "Korg Distributors List," included with the OASYS PCI package, contains contact information for all Korg Distributors, world-wide.

The current version of the Korg Distributors List is also maintained online, at http://www.korg.co.jp/company/distributors.html.

MIDI Implementation Chart

Korg OASYS PCI **Version 2.0** **2001**

Function		Transmitted	Recognized	Remarks
Basic Channel	Default	1-16	1-16 (A and B)	Memorized
	Changed	1-16	1-16 (A and B)	See Note 1
Mode	Default		3	Mode 3: Omni Off, Poly
	Messages	X	X	
	Altered	**********		See Note 2
Note Number		X	0-127	Note Number "True Voice" is the actual note played in response to the MIDI note.
	True Voice	**********	0-127	
Velocity	Note On	X	O	
	Note Off	X	O	
After Touch	Key (Poly)	X	O	
	Channel (Mono)	X	O	
Pitch Bend		X	O	
Control Change	01	X	O	01 Mod Wheel
	07	X	O	07 Volume
	08	X	O	08 (Width)
	10	X	O	10 Pan
	11	X	O	11 Expression
	12	X	O	12 Effect Control 1 (FX Send A)
	13	X	O	13 Effect Control 2 (FX Send B)
	64	X	O	64 Sustain
	89	X	O	89 (Mute)
	90	X	O	90 (Solo)
	91	X	O	91 (Send Mute A)
	92	X	O	92 (Send Pre/Post A)
	93	X	O	93 (Send Mute B)
	94	X	O	94 (Send Pre/Post B)
	1-95	X	O	1-95 Controllers - See Note 3
Program Change		X	X	
	True Number	X	X	
System Exclusive		O	O	
System Common	Song Position	X	X	
	Song Select	X	X	
	Tune Request	X	X	
System Real Time	Clock	X	O	"Commands" means Start, Continue and Stop commands (for use with sequencers).
	Commands	X	O	
Aux Messages	Local On/Off	X	X	
	All Notes Off	X	X	
	Active Sensing	X	X	
	System Reset	X	X	
Notes	1. Basic Channel "Changed" means the channels that are accessible by the user. 2. Mode "Altered" means substitutions used for unimplemented modes. OASYS PCI makes no substitutions. 3. The mod sources "MIDI A-H" allow 8 additional MIDI controller numbers to be recognized as modulation sources.			

O: Yes

X: No

English

Specifications

Analog I/O

Inputs

Inputs: 24-bit, 128x oversampling sigma-delta converters

S/(THD+N) Ratio (A weighted): 92dB at -0.5dBFS

Dynamic Range: 98dB (typical) @IHF-A

THD+N (A weighted): 0.005% at 1kHz, +16dBu Input, 100kOhm load

Frequency Response: 20 Hz - 20 kHz, +/- 0.02dB, +4dBu Input, 100kOhm load

Impedance: 100kOhm (calculated)

Outputs

24-bit, 128x oversampling sigma-delta converters with 8x digital filters

S/(THD+N) Ratio (A weighted): 93.0 dB at -0.5 dBFS

Dynamic Range: 108dB (typical) @IHF-A

THD+N (A weighted): 0.002% at 1kHz, +16dBu Input, 100kOhm load

Frequency Response: 20 Hz - 20 kHz, +/- 0.09dB, -12.0 dBFS, 100kOhm load

Impedance: 50 Ohm (measured)

General

Nominal Levels: +4 dBu

Headroom: 12 dB

Sample Rates: 44.1 kHz, 48 kHz, external clock

Digital I/O

ADAT optical I/O: 24-bit

S/PDIF coaxial I/O: 24-bit

Word clock I/O: BNC

ADAT Timecode: Input and through

Synthesizers

Synthesizers are plug-ins loaded from disk, allowing for easy future expansion.

Initial release includes over 25 synthesis algorithms and hundreds of sounds.

Effects

Effects are plug-ins loaded from disk, allowing for easy future expansion.

Initial release includes over one hundred unique effects algorithms.

Mixer

12 channels, each of which may process synthesis programs, audio inputs, or hard disk audio tracks. Channels may each have up to 4 insert effects.

4 send busses, each with up to 4 effects.

6 stereo output busses, each with up to 4 effects.

General

DSP Processing MIPS: 480

PCI revision 2.1 compliant. Requires one full-length PCI slot.

PCI Power Consumption: +5V = 1.875W, +12V = 0.294W, -12V = 0.117W

Specifications, operations, and appearance are subject to change without notice.

Index

English